Poster Abstracts

P001

Comparison of different schemes of conservative treatment of anal incontinence

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Aim: To compare anal electrostimulation and extracorporeal magnetic stimulation in complex programs of conservative treatment of anal incontinence.
Method: The study included 59 people with anal incontinence. I group – 22 patients (20 (90.9%) women), 50.9 ± 5.1 years – complex of methods: anal electrostimulation, anal biofeedback and tibial neuromodulation (TNM), II group – 37 patients (33 (89.2%) women), 51 ± 4.4 years – complex of methods: magnetic stimulation, anal biofeedback and TNM. The method of control was anorectal manometry.
Results: Group I – rest tone and maximal squeezing pressure of anal sphincters before treatment were 33.3 ± 2.8 mmHg and 77.3 ± 16.0 mmHg, respectively; after treatment was 42.6 ± 4.2 and 99.5 ± 19.2, thus the pressure increase amounted to 27.9% ($P = 0.001$) and 28.7% ($P = 0.09$). Group II – rest tone and maximal squeezing pressure before treatment were 32.4 ± 2.0 and 91.4 ± 9.5 mmHg; after treatment – 40.9 ± 3.0 and 109.8 ± 11.9 mmHg, so the pressure in the anal canal increased by 26.2% ($P = 0.000$) and 20.1% ($P = 0.022$). Statistically significant differences between pressure increment in groups of patients with electrical or magnetic stimulation were not registered (in case of rest tone $P = 0.875$, squeezing $P = 0.062$).
Conclusion: Magnetic stimulation has not shown greater efficacy compared to electrostimulation in the treatment of anal incontinence.

P002

Replacement adaptor 09106 as a solution in case of end of stimulation of the Interstim I for patients with a dynamic graciloplasty: a feasibility and safety study

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Aim: The Medtronic Interstim I®, which was used for dynamic graciloplasty (DGP), is no longer produced. No Interstim replacement can be offered to patients who underwent a DGP as these patients have two individual electrodes, whereas the new Interstim II® only has one access point. To solve this problem, the so-called Medtronic replacement adaptor 09106® was created. This study evaluates the feasibility and safety of this adaptor.
Method: All patients who underwent a DGP and reported loss of efficacy due to reached end of stimulation (EOS) and received a replacement adaptor 09106 were included in the study. The replacement adaptor 09106 was positioned anteriorly to the posterior rectal sheet in 7 patients. The feasibility and safety of this procedure was assessed.
Results: All 7 procedures, included between February-April 2018, were successful. No technical lead problems or complications occurred. The diaries showed loss of faeces was equal to levels prior to EOS.
Conclusion: The Medtronic replacement adaptor 09106® is a feasible and safe solution for the Interstim I® in case of EOS in patients who underwent DPG.

P003

Long-term results of sacral nerve stimulation for faecal incontinence in one tertiary referral center

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Aim: To report long-term results about Sacral Nerve Stimulation (SNS) for Faecal Incontinence (FI).
Method: All patients who underwent SNS in a single tertiary center were retrospectively included. Permanent implantation rate and long-term results were analyzed. Successful SNS was defined by Wexner's score improvement ≥50%.
Results: Between 2004 and 2018, 169 patients (149 women, mean age 60.9 ± 13 years) underwent temporary implantation for FI (93.5%) or dyschesia (6.5%). 133 (79%) patients were permanently implanted for FI. Post-test morbidity was significantly lower in permanently implanted patients than non-implanted patients (8 vs 21%, $P = 0.03$). Post-operative morbidity occurred in two patients (1.5%). Surgical revision and explantation rates were 38% and 21%, respectively. Long-term results were available in 113 patients (85%) after a mean follow up of 5.3 ± 3.7 years. Mean Wexner's score after implantation was significantly improved (5 ± 5.1 vs 14 ± 3.3, $P < 0.0001$). At the end of the follow-up, SNS was successful in 75 patients (66%), and 38 patients were fully continent (34%). Patients with successful SNS were significantly associated with preoperative dyssynergia (25 vs 0%, $P = 0.007$).
Conclusion: SNS is a safe and effective surgical option for the management of FI, allowing full continence in more than one third of patients after permanent implantation.

P004

Is percutaneous tibial nerve stimulation adequate to manage patients with fecal incontinence without having any type of surgery?

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Aim: In this study, short-term results of the percutaneous tibial nerve stimulation applied in our clinic are discussed.
Method: We examined cases who presented between January 2015 and January 2018 with fecal incontinence. Demographics, etiology of incontinence and values like pre- and post-treatment incontinence scores, the numbers of applications, endoanal ultrasound and anorectal manometry results were retrospectively recorded.
Results: Therapy was started for 47 patients. From this group 8 of them abandon treatment with various reasons. Median age from patients with incontinence was 50.3 (17 – 82). There are 30 women (63.8%). Etiologies are surgery in 26 (55.6%), idiopathic in 13 (27.6%) and trauma in 18 (17%) cases. Pre-treatment average Wexner score of all group was 15.48. Average score of 39 patients who completed the treatment found 8.66. Five patients has complete response regarding to scoring system. Scores are reduced between 0 to 5 in 17 patient.
Conclusion: In selected cases, PTSS both improved the incontinence scores and provided a better quality of life. Favored by its low cost, lack of complication risks, lack of hospitalization need and easy application, it is increasingly becoming a preferred method.

P005

Laparoscopic ventral rectopexy in treatment of rectal prolapse

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Aim: Ventral rectopexy has gained in popularity amongst colorectal surgeons as an operation that addresses functional bowel symptoms by correcting anatomical abnormalities in patients with internal and external rectal prolapse. The aim of this study was to evaluate the results of laparoscopic ventral rectopexy in patients with rectal prolapse.
Method: Laparoscopic ventral rectopexywas performed in 65 patients with rectal prolapse (31 – complete prolapse, 34 – internal rectal prolapse). The age from 34 to 66 years (49.7 ± 14.6). Follow-up period – 6–42 (12) months. Rectal solitary ulcer was discovered in 11 (16.9%) of 65 patients.
Results: Improvement of anal continence in 78.6% and better colonic motility in 85% of patients with complete rectal prolapse was registered after surgery. Improvement of rectal evacuatory function was obtained in 76.5% of patients with internal rectal prolapse. Healing of solitary rectal ulcer after laparoscopic ventral rectopexy was achieved in 8 (72.7%) of patients.
Conclusion: Laparoscopic ventral rectopexy improves anal continence in 78.6% of patients with complete rectal prolapse, release obstructed defecation syndrome in 76.5% of patients with internal prolapse and to heal solitary rectal ulcer in 72.7% of cases.

P006

Isolated fecal incontinence patients represent a different disease phenotype from patients who report fecal incontinence with concurrent constipation

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Aim: This study compares fecal incontinence patients with constipation present (FICP) and absent (FICA).

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Method: Single institution prospective cohort study (January 2007–2017). 946 patients with FI completed the Fecal Incontinence Severity Index (FISI) survey. 656 (69.3%) had coexisting constipation by Constipation Severity Instrument (CSI). The FI quality of life (FIQOL), coexisting pathology rate (measured by the Pelvic Organ Prolapse Inventory (POPIQ-7) and Urinary Distress Inventory (UDI-6) surveys) were compared. Linear regression models were developed for FIQOL themes. Manometry and defecography were reviewed.
Results: FICP patients (CSI score of 33.1 ± 15.3) were less likely to report pregnancy history (89.2% vs 91.4%, $P = 0.001$) or complicated delivery, (9.1% vs 18.1%, $P = 0.005$) compared to FICA patients. They had different physiology and defecography findings, higher pelvic organ prolapse and urinary retention rates. FICP patients had better FISI scores at presentation (21 vs 24, $P < 0.001$) yet lower health satisfaction (28.9% vs 42.5, $P < 0.001$). FIQOL scores in FICP patients were worse as CSI increased over FISI quartiles. Coexisting pathology worsened FIQOL scores further.
Conclusion: FICP patients may represent a different disorder, which can be recognized at presentation based on symptoms. Their treatment requires coordinated management of co-existing pelvic organ prolapse from the beginning.

P007

Results of pelvic floor rehabilitation in patients with fecal incontinence

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Aim: To evaluate the effectiveness of pelvic floor rehabilitation (PFR) for fecal incontinence (FI) patients regarding defecatory function and quality of life.
Method: A quasi-experimental study conducted at a single tertiary care center. We included all consecutive patients with FI treated by PFR in our center between 2007–2014. Demographic data, past medical history, and anal ultrasound results were recorded. Wexner functional score and quality of life utilizing FIQLS were measured pre (T1) and posttreatment (T2). Scores data were non-parametric, hence are shown as median and range. We compared continuous related variables with Wilcoxon test and performed logistic regression to identify factors associated with treatment response. Statistically significant was accepted as $P < 0.05$.
Results: We identified 215 patients. 87.4% were women; age was 65 ± 13.9 years. The median Wexner score was 15 (2–20) in T1 and 6 (0–18) in T2, ($P = 0.000$). The quality of life improved significantly in its four dimensions when comparing T1 and T2, ($P = 0.000$). At logistic regression, diabetes was the only factor associated with a worse response to treatment OR 3.29 (IC 95% 1.54–7.04).
Conclusion: PFR is an effective therapy for FI. It improves the functional and quality of life scores significantly. Diabetes is associated with a worse outcome.

P008

Biofeedback for faecal incontinence improves functional outcomes and reduces long term healthcare utilisation

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Aim: To critically evaluate the short-term outcomes of patients with faecal-incontinence (FI) who underwent a tailored 10-week Biofeedback program at a tertiary-referral-centre in Singapore.
Method: A prospectively-collected database was retrospectively reviewed from 2012–2016. Adult patients with moderate-FI defined as >2 episodes of involuntary leakage per week for >3 months, underwent biofeedback and were included in the analysis. Primary outcomes were Wexner-incontinence-score and the Rockwood faecal-incontinence quality-of-life scale (FIQL) respectively. Successful outcomes were defined as improvement in both the post-treatment Wexner-score, and in all FIQL domains. Secondary outcomes included healthcare utilization-calculated as number of hospital visits for faecal-incontinence over a 2 year follow-up period in responders versus non-responders.
Results: 137 patients completed biofeedback. 94 patients (68.6%) reported improvement in the post-treatment Wexner score, 37 patients (27%) had no change, and 6 patients (4.4%) reported deterioration. Using the FIQL scale, 89 patients (65%) improved in all FIQL domains. Overall, 65 patients (47.4%) had successful outcomes evidenced by improvement in both Wexner and FIQL domain scores. Patients with rectal hypersensitivity were positively associated with a favourable response to biofeedback therapy. Responders to biofeedback had significantly fewer healthcare utilization than non-responders post-treatment.
Conclusion: Biofeedback therapy was effective in treating FI and reduced healthcare utilisation.

P009

Comparative quality of life in patients following transanal minimally invasive surgery (TAMIS) and healthy control subjects

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P010

A systematic review of anterior resection syndrome (ARS)

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Aim: In 2010, 90% of rectal cancer diagnoses underwent sphincter-preserving surgery. However, UK-rates decreased to 60% from 2015–16. This may be secondary to the fact that up to 90% of these patients experience alteration of bowel habit ranging from increase in frequency, faecal incontinence (FI) or rectal-evacuatory dysfunction (RED). No clear definition or cause has been established. Previous reviews have focused only on ARS and function/quality of life when compared to abdominoperineal resections (APER). This reviews aim is to raise awareness and understanding of ARS, highlight needs for accurate data-capture and clinical research into aetiology and targeted treatments.
Method: A search, following the PRISMA pathway, of literature was carried out using the MedLine database with search terms "rectal resection", "function","quality of life" and "ARS"1950–2017.
Results: Long-term studies demonstrate ARS symptoms 15-years post-operatively. Incidence of FI ranged from 0%–71% and 10–74% for RED. Quality-of-life papers have demonstrated worse outcomes in ARS vs APER, albeit others demonstrated parity. Aetiology is multifactorial, including sphincter damage, decreased rectal-compliance, altered colonic motility, nerve injury, operative techniques and neoadjuvant therapy. No specific-treatments for ARS exist; it is empirical, including biofeedback and SNS.
Conclusion: Despite this evidence, surgeons' appreciation of ARS pre-operative risk is significantly underestimated.

P011

Sacral nerve stimulation at sub-sensory threshold does not compromise treatment efficacy in faecal incontinence patients

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Aim: Sacral-Nerve-Stimulation an effective treatment for faecal incontinence. Previously, sub-sensory-stimulation as low as 50% of sensory threshold (ST) was shown not to compromise short-term efficacy. The aim of this study was to explore if a 50% reduction in stimulation amplitude of ST is feasible in a clinical setting.
Method: All patients with an active pacemaker and satisfied with current treatment were offered to have the stimulation amplitude reduced to 50% of ST. Patients were follow-up after 1-year and evaluated by Wexner-score and VAS for patient-satisfaction.
Results: Seventy-five (68%) out of 110 satisfied patients accepted to have the stimulation amplitude reduced. The median time from permanent implantation was 6 (IQR: 3–8) years. The stimulation amplitude was reduced from 1.5 (IRQ:0.85–2) to 0.55 (IQR:0.35–0.85) volt equivalent to a reduction of 56 (IQR:39–73) percent. At 1-year follow-up the stimulation amplitude increased to 0.75 (IQR:0.45–1.4) volt – a reduction of 39 (IQR:6.6–62.5)%. The Wexner-score was stable between baseline 9 (IQR:6–11) and 1-year follow-up 9 (IQR:7–12) (P-value:0.252). Patient satisfaction was unaltered from 16 (IQR:8–35) to 19 (IQR:5–37) at 1-year follow-up (P-value:0.794)
Conclusion: Sub-sensory stimulation at median 39% of ST is as effective as stimulation at or above ST. Patients tend to increase amplitude over time.

P012

Taeniectomy versus transvere coloplasty as neorectum after low rectal resection

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Aim: The aim of this study is to assess the efficacy "Taeniectomy" pouch in comparison to Transverse coloplasty pouch.
Method: This was a prospective controlled study. Most patients who were candidate for low rectal resection presented to Cairo university hospitals from February

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2013 to August 2016 were divided into 2 groups with total of 180 patients. Ninety patients were subjected to Low rectal resection with the transverse coloplasty pouch and 90 patients were subjected to low rectal resection with the newly described taeniectomy pouch. Safety and feasibility of both techniques were assessed about leakage, operative time, difficulty in evacuation, incontinence, number of daily motions and post-operative urgency.
Results: There was no significant statistical difference between Taeniectomy and Transverse coloplasty regarding post-operative leakage, post-operative mortality (P-Value = 0.99) and functional outcomes including number of motions per day (P-value was 0.403 at 3 months and 0.361 at 12 months), urgency (P-Value was 0.688), continence grade (P-Value was 0.320 and 0.683 in 3 and 12 months respectively) and manometric findings. However, Taeniectomy is statistically significant better in terms of operative time (P-value = 0.001)
Conclusion: Taeniectomy is a newly described technically easier technique for pouch formation after Low rectal resection that is *comparable* to Transverse coloplasty.

P013
Utility of mansoura numeroalphabetic constipation score (MNCS) in decision making and predicting the outcome of treatment of obstructed defecation syndrome

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Aim: The present study aimed to assess the clinical utility and accuracy of Mansoura Numeroalphabetic Constipation Score (MNCS) in predicting the outcome of treatment of Obstructed defecation syndrome (ODS).
Method: The MNCS was applied to patients at the first visit to the outpatient clinic then re-applied at 6 months after conservative or surgical treatment. The reduction in MNCS after treatment was recorded and the accuracy, sensitivity, and specificity of the score in predicting the outcome of treatment were calculated.
Results: Ninety-one ODS patients (32 males) with mean age of 43.7 years were include. A significant decrease in MNCS was noted after conservative treatment (8.1 ± 1.6 to 5.7 ± 2.3) and after surgical treatment (10.1 ± 0.84 to 4 ± 0.81). The median percentage of reduction in MNCS was 45.2% after conservative treatment and 60% after surgical treatment. The overall diagnostic accuracy, sensitivity, and specificity of MNCS was 90.1%, 95.2%, and 78.5%, respectively.
Conclusion: The MNCS had a 90% accuracy rate in predicting the outcome of conservative and surgical treatments of ODS with high sensitivity and acceptable specificity rates. The MNCS had higher accuracy and sensitivity in predicting the outcome of surgical treatment of ODS when compared to conservative treatment.

P014
Neuromodulation of the posterior tibial (PTNS) as treatment of faecal incontinence: Our experience in 62 patients

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Aim: Show the uses of PTNS as an alternative treatment for fecal incontinence and its evaluation by the quality of life survey.
Method: A retrospective analysis of a prospectively recorded database of patients treated with PTNS between 2015 to 2018 was performed. Patients were treated on an outpatient basis following the usual technique for percutaneous PTNS. The Wexner score and the FIQL/CCVIA questionaries' were used before and after the treatment.
Results: 62 patients were analyzed. mean age was 58 years: 46 women. 82% had previous vaginal delivery 29% of patients had a history of perianal surgeries and 19% presented LARS. The most frequent type of incontinence was urge incontinence (43%) and 32% of patients had associated urinary incontinence.Mean Wexner score was, 13 points pre-treatment and 11.7 points after treatment.In FIQL the average of items related to lifestyle was 2.057 before treatment and 2.99 after. Variations in Behavior were: 1.93–2.79, Depression 2.23–2.34 and embarrassment 1.78–2.016. Treatment was considered successful by 68% of patients, 15% had a relapse in their symptoms.
Conclusion: PTNS is a useful, safe and economic technique in the treatment of fecal incontinence, and should be considered as part of the therapeutic options for incontinence, although its long-term effectiveness is still to be determined.

P015
A comparative study on the sexual and urinary functions after transanal total mesorectal excision and low anterior resection for rectal cancer

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Aim: Trananal total mesorectal excision may (TATME) address the problem of difficult dissection at the low rectum, but whether this translates into better outcome in terms of urogenital function is unknown. The aim of this study was to compare the urogenital function of those who underwent TATME and robotic-assisted low anterior resection (RLAR).
Method: The urogenital function was assessed using the International Prostate Symptoms Score (IPSS) the International Index of Erectile Function (IIEF) questionnaires.
Results: There were 23 and 41 male patients who underwent TATME and RLAR during the study period. For the TATME group, the IPSS score showed no significant difference compared to baseline at 3 and 6 months postoperative. There was significantly lower IIEF score at 3 months ($P = 0.002$), but recovered to baseline at 6 months ($P = 0.142$). For the RLAR group, the IPSS score was significantly higher ($P = 0.018$) at 3 months but recovered to baseline at 6 months ($P = 0.413$). The sexual function at 3 months ($P = 0.499$) and 6 months ($P = 0.239$) postoperative was comparable with the baseline.
Conclusion: Both sexual and urinary functions returned to baseline at 6 months. Patients who underwent TATME had a faster recovery of urinary function, while those who underwent RLAR had an earlier return of erectile function.

P016
Functional lumen imaging probe functional assessment of anal canal in faecally incontinent patients

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Aim: To compare anal canal function using Endoluminal Functional Lumen Imaging Probe (EndoFLIP) between faecally incontinent patients (FI) and asymptomatic subjects (AS).
Method: All subjects were assessed using HR-ARM, EAUS and EndoFLIP. Anal competence of the narrowest area of the anal canal was evaluated using three distinct parameters derived from the EndoFLIP data.
Results: Sixteen FI patients (2M/14F, Mean age 61.38 years, SEM+3.34) and 9 AS (3M/6F, Mean age 57.9 years, SEM+3.69) were assessed. The squeeze strength was significantly higher in the AS group 167.3 (62.0–270.8)mm.cmH_20 compared to FI group 23.6 (8.1–86.1)mm.cmH_20. The median yield pressure (the pressure when the diameter increased from baseline) was significantly lower in the FI group at 22.99 (17.67–45.49)cmH_20 compared to 55.95 (36.56–64.82)cmH_20 in asymptomatic subjects. There was no significant difference in the distensibility between the FI group 0.18 (0.17–0.35)mm/cmH_20 compared to AS group 0.23 (0.12–0.39) mm/cmH_20 calculated as the change in diameter divided by the change in distension pressure.
Conclusion: EndoFLIP demonstrated that FI patient's anal sphincters yielded at a lower pressure and had lower squeeze strength than in asymptomatic subjects, which may be clinically more relevant than squeeze pressures alone.

P017
Fecobionics: A novel defaecatory function test

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Aim: To characterise physiological expulsion parameters in asymptomatic subjects using Fecobionics.
Method: Fecobionics is a new novel device invented by our team that allows assessment of pressures, orientation and bending all at once by patient bedside. Fecobionics was inserted into the rectum and subjects were asked to sit on a commode. The bag was filled with fluid until subjects had sensation to defaecate. Patients were then asked to expel the Fecobionics. Time to expulsion, pressures and bending angles were assessed during expulsion. This was compared to conventional 50 ml BET and HR-ARM.
Results: Eight subjects (6F/2M, 50 years (25–77)) were assessed. Defaecation urge was felt at 32 ± 8 ml. The expulsion time for Fecobionics and BET were 32.2 ± 6.3 and 15.7 ± 3.3 srespectively ($P < 0.05$). Linear association was found (R^2=0.48). During Fecobionics expulsion all the pressure sensors showed elevated pressures. Defecations could be subdivided into five distinct phases based on the front and rear pressures and their pressure difference. Changes in the anorectal angle were noted during defaecation.

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Conclusion: It was possible to obtain reliable data under physiological conditions using Fecobionics. Five defecatory phases could be defined from the pressure signature. Orientation and bending could also be assessed.

P018

Altemeier's procedure for complete rectal prolapse; outcome and function in 47 consecutive patients

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Aim: To evaluate morbidity and mortality, recurrence and postoperative function in patients treated by Altemeier's rectosigmoidectomy for complete rectal prolapse.
Method: Peri-operative data on 47 consecutive patients were reviewed. At follow-up recurrences and any change in pelvic floor function were determined. The 38 patients were assessed at a median interval of 51 (2–135) months.
Results: Two of the patients had a major complication not related to the ASA score, BMI or age. At follow-up there were 13 (34%) cases of recurrence with an estimated risk at 48 months of 40%. Recurrences were not related to age ($P = 0.208$), gender ($P = 1.000$), BMI ($P = 0.988$), ASA score ($P = 0.492$), previously repaired prolapse ($P = 0.301$), hysterectomy ($P = 0.429$), length of resected bowel ($P = 0.184$), and levatorplasty ($P = 0.415$). There was a statistically significant decrease in the obstruction defecation score, but no in the Vaizey score, the International Consultation on Incontinence Questionnaire Short Form score, the urinary retention score and the Pelvic Organ Prolapse Quantification score. No statistically significant difference was found in ODS or Vaizey score in relation to levatorplasty. The mean patient satisfaction was 7.7/10.
Conclusion: Altemeier's procedure had a low complication rate and improved evacuation in constipated patients. Patient satisfaction was high. Faecal and urinary incontinence and pelvic organ prolapse were not improved.

P019

Stapled transanal rectal resection for the treatment of rectocele associated with obstructed defaecation syndrome: a large series of 262 patients

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Aim: This study aims to evaluate the functional results and recurrence after Stapled Transanal Rectal Resection (STARR) for rectocele associated with obstructive defecation syndrome.
Method: Patients underwent STARR for a symptomatic rectocele ≥3 cm on dynamic defecography associated with ODS symptoms between 2007–2015.
Results: Two-hundred-sixty-two consecutive female patients with the median age was 54 years (range;20–78) were enrolled. The median follow-up duration was 64 months (range;17–124). An improvement was expressed by a statically significant (P-value<0.001) median Wexner constipation score reduction from 19 preoperatively to 9 postoperatively. Only 10 patients (4%) experienced recurrence with three of them required additional re-intervention. Overall, there was no mortality. Sixty patients (23%) experienced postoperative complications with only 9 patients required re-interventions for surgical hemostasis ($n = 7$), fecal diversion for anastomotic leakage ($n = 1$), and recto-vaginal fistula repair ($n = 1$).
Conclusion: STARR is a safe, effective, and less invasive treatment for rectocele associated with ODS. It has satisfactory functional results and low recurrence rate. It should be offered to symptomatic patients after failure of medical treatment. Precise patients' selection is important with multidisciplinary decision. "Easy surgery" could be achieved when performed by surgeons well-trained and experienced in pelvic floor surgery, as serious complications may occur.

P020

Defecography: first-line diagnostic modality in patients with refractory constipation? Implications from a systematic review and meta-analysis

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Aim: To systematically review and meta-analyse the rates of structural and functional abnormalities diagnosed by barium (BD) and/or magnetic resonance imaging defecography (MRID) in patients with chronic constipation (CC) and healthy volunteers (HV).
Method: Studies were considered if they met the inclusion criteria of ≥40 HV, or adult patients with CC, undergoing BD or MRID.
Results: From a total of 1760 records identified, 175 full-text articles were assessed for eligibility. Of these, 63 studies were included providing data on outcomes of 7519 BDs and 668 MRIDs in patients with CC, and 225 BDs and 50 MRIDs in HV. Pathological Oxford III-IV intussuscepta and >4 cm rectoceles were diagnosed in 23.7%(95%CI, 16.8–31.4) and 15.9%(10.4–22.2) of patients, respectively. Prevalence of functional abnormalities in studies where diagnosis was based on the assessment of defecatory dynamics in isolation, compared with those adding parameters of rectal emptying was equivalent on BD, but notably different on MRID (23.9% *vs* 36.3%;OR, 1.81[1.12–2.91], $P = 0.013$). Although associated with higher level of embarrassment (OR, 1.73[1.14–2.62]; $P = 0.008$), BD detected more intussuscepta (OR, 1.52[1.12–2.14]; $P = 0.009$]).
Conclusion: Pathologically significant structural abnormalities are common in CC patients. Such abnormalities cannot be evaluated using other contemporary modalities, and hence defecography should be considered first-line diagnostic test.

P021

The long-term results of Transtarr procedure to treat obstructed defecation syndrome (ODS)

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Aim: The aim of this study was to assess functional outcomes of patients treated with Transtarr procedure for obstructed defecation syndrome (ODS).
Method: 42 patients that underwent a Transtarr procedure from 2006 to 2009 were included in this retrospective study. Functional symptoms, were evaluated with the ODS score and PAC-QoL score (Patient Assessment of Constipation—Quality of Life). Incontinence was recorded with the Cleveland incontinence score.
Results: After a mean follow up of 7.4 ± 4 months, the mean ODS score decreased significantly : 7.76 ± 6.05 vs 16.7 ± 7.2 ($P < 0.001$) and the median PAC-QoL score was significantly improved from 48.84 ± 16.9 to 39.2 ± 20.5 ($P < 0.05$).Incontinence score increased numerically, but nonsignificantly, with a mean score value of 2 ± 3.6 at baseline, and of 2.91 ± 4. Long-term follow-up data were available in 24 patients, with a mean follow-up duration of 118 ± 12 months. The functional results were similar to the findings at the short-term postoperative assessment however the incontinence score was significantly deteriorated from 2.13 ± 3.57 to 5.33 ± 4.55 ($P = 0.004$).
Conclusion: The Transtarr procedure is an effective treatment of obstructed defecation syndrome but exposes to the risk of decompensating long-term anal incontinence.

P022

Towards a core outcome set for slow-transit constipation in adults: a systematic review of outcomes reported in the literature

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Aim: To systematically assess outcomes in studies regarding treatment options for slow-transit constipation (STC) in adults.
Method: In February 2018, MEDLINE, EMBASE and PsycINFO were searched for papers assessing any STC-treatment in adults. Outcomes were systematically extracted and categorized in domains using the conceptual framework of the Outcome Measures in Rheumatology filter 2.0. Outcome reporting was stratified by decade of publication (inception -1996, 1997–2007, 2008–2018).

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Results: After screening 1458 titles and abstracts, 47 studies were included. Fifty-nine different types of outcomes were categorized into eighteen domains. Most studies reported on outcomes in the domains defecation functions (94%), digestive functions (53%), healthcare service use (51%), sensation of pain (49%), and health-related quality of life (43%). The primary outcome was not clearly defined in 62% of the studies. From inception, reporting of health-related quality of life and side effects increased from respectively 0 and 22% of the studies to 57%, whereas reporting of the digestive functions domain decreased from 89 to 43%.
Conclusion: Outcomes assessed in studies on STC in adults are inconsistent and heterogeneous. A lack of standardization complicates comparisons between studies. Developing a core outcome set for STC in adults could contribute to standardization of outcome reporting in future studies.

P023
Expectations and experiences of patients with idiopathic constipation regarding sacral neuromodulation: a qualitative approach

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Aim: To obtain more in-depth understanding of patient-relevant outcomes in patients with idiopathic constipation treated with sacral neuromodulation (SNM).
Method: Semi-structured face-to-face interviews were conducted with eleven patients treated with SNM for idiopathic constipation. Interviews focused on expectations and experiences of patients regarding their treatment. Interviews were transcribed verbatim and coded using attribute and descriptive coding.
Results: Patients experienced constipation as a severe health problem with a large impact on quality of life. SNM was mainly selected to prevent the need of a stoma. In general, respondents thought SNM had a positive effect on their constipation complaints, medication usage, daily activities and quality of life. Prior to SNM, respondents felt insecure and unprepared. Filling out defecation diaries for SNM-eligibility, when withheld from treatment, appeared to be problematic as patients already expected, and subsequently experienced, increased constipation symptoms. Respondents experienced communication problems with healthcare professionals. In the treatment phase, surgery under local anesthetic was described as a "terrifying experience". Furthermore, three respondents experienced problems with a failing test device.
Conclusion: This study provides insight into patient expectations and experiences. Results might be used to select patient-relevant outcomes for future studies and to improve communication between patients and healthcare professionals.

P024
Episiotomy effects on fecal incontinence in multiparous patients in Shiraz

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Aim: We aimed to analyze the role of episiotomy on this type of fecal incontinence in multiparous patients.
Method: Forty-four females with anal incontinence and 36 asymptomatic ones that had two or more previous deliveries were investigated with endoanal ultrasonography from December 2016 to April 2017. All subjects were divided into two groups on the basis of episiotomy: with episiotomy and without episiotomy.
Results: In our study, 80 multiparous females with a mean age of 46.9 years (26–77 years) were measured for episiotomy in incontinent patients and in asymptomatic subjects. The mean Wexner score was 8.6. For 89% of the patients, there was a history of vaginal delivery and 62.5% had undergone one or more prior episiotomy during delivery.
Conclusion: The episiotomy can be associated with incontinence but not with incontinent patients however there was not any significant difference between the two groups. Perineal body thickness plays a significantly important role in fecal incontinence, therefore, it should be one of the factors involved in anal incontinency evaluations.

P025
Defecography in the diagnosis of rectocele and prolapse of the rectum

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Aim: Determination of the role, as well as the parameters of dynamic radiographic defecography in patients with prolapse of the rectum and rectocele.
Method: From 2014 to 2017, in a complex study 103 sick women aged 26–75 years with pathologies of the anorectal region included dynamic radiographic defecography. The reason for the study was the presence in the history of anal discomfort, chronic constipation, a feeling of incomplete emptying, a difficult defecation, a sense of foreign body in the anal canal.
Results: During the defecography in 78 patients (75.7%) rectocele II-III degree was found, in 15 (24.3%) cases rectal prolapse. The time of emptying the contrast, as well as the volume of residual contrast in the lumen of the gut, is important in the choice of surgical tactics.
Conclusion: In the diagnosis and differentiation of anorectal and pelvic floor diseases, the informative value of dynamic radiographic defecography is high. The sensitivity of the method is 85.5%, 92.3% specificity, 94%accuracy.Acomparative radiographic analysis of dynamic defecography with other visualizing means examination is importance in the choice of therapeutic tactics.

P026
Sexual function in women after laparoscopic ventral rectopexy with Permacol-biomesh, for rectal prolapse

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Aim: Does laparoscopic ventral rectopexy (LVR) with Permacol-biomesh for rectal prolapse affect sexual function in women
Method: Female Sexual Function Index (FSFI) was recorded pre- and postoperatively for 32 women (20–83 years, mean 54.5 years) with rectal prolapse treated with LVR between 2009–2016. Mean follow-up 1.5 years. Four questions were selected as relevant for overall assessment: level of sexual interest, level of sexual arousal during sex, overall satisfaction regarding sex life, and level of pain during intercourse.
Results: 11 women not sexually active were excluded from the study. Two thirds of the patients were sexually active (mean 49.5 years). In 50% of cases, all sexual parameters excluding pain were increased postoperatively, reduced in 30% of the cases and with no change in remaining patients. 60% of patients experienced no pain during intercourse postoperatively. 30% of those recording intercourse and of those not having intercourse before surgery had minor postoperative pain during sexual intercourse.
Conclusion: 70% of patients undergoing LVR for rectal prolapse experience an unchanged or increase in sexual function compared to the period of rectal prolapse. The30% of patients encounter minor pain during intercourse after surgery. LVR seems a safe treatment option with regards to sexual function.

P027
Long-term functional outcome and quality of life after redo-anastomosis following an anastomotic leak

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Aim: To investigate long-term bowel-, urinary- and sexual function and quality of life (QoL) in rectal cancer patients who had a redo-anastomosis after anastomotic leakage.
Method: The LARS score, EORTC QLQ-C30 and -CR29 were collected from rectal cancer patients who had bowel continuity restored after a diverting stoma for anastomotic leakage. A control group of rectal cancer patients who had undergone TME without anastomotic leakage completed the same questionnaires.
Results: A total of 35 patients returned completed questionnaires; 17 cases (redo-patients) and 18 controls (TME group). The mean age was 66 ± 10.1, 71.2% were males, and 77.1% had pre-operative radiotherapy with no significant differences between cases and controls. More patients in the TME group (62.5%) had a temporary diverting stoma at primary surgery compared with the redo-patients (37.5%) (p0.05). Major-LARS was scored in 70.6% of the redo-patients vs 72.2% in TME group (p0.16). No significant differences between the cases and controls were found in any of the EORTC QLQ-C30 /-CR29 sub scales.
Conclusion: No statistical significant differences in functional outcome or quality of life was found between cases and controls. Both groups reported considerable impairment of their bowel function.

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P028

Colectomy for chronic constipation patients with features of colonic pseudo-obstruction

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Aim: There are subsets of chronic constipation patients with features of colonic pseudo -obstruction (CPO) with a distinct transitional zone (TZ). We intended to evaluate the results of colectomy in these patients.
Method: Patients who underwent operation for chronic constipation were prospectively registered and retrospectively analyzed. Surgical outcomes of CPO were compared with typical slow transit constipation (STC) without any dilatated colonic segments.
Results: Total of 52 patients (28 males and 24 females, mean age 54.2 years)underwent total/subtotal colectomy for chronic intractable constipatioin. Fourty-two patients presented with CPO and 10 patients with STC. In CPO group, all TZ were located on the left colon and pathologic diagnosis was segmental hypoganglionosis / aganglionosis compared to visceral neuropathy ($n = 7$) or intestinal neuronal dysplasia type B ($n = 3$) in STC. After colectomy, early complications did not differ between two groups, but in the long-term follow-up (median : 40 months), CPO showed lower incidence in the recurrence of constipation symptoms (0% vs 30%) and small bowel obstruction compared to STC (0% vs 50%).
Conclusion: Colectomy can be beneficial to medically intractable chronic constipation patients with features of CPO.

P029

Outcomes of treatment of fecal incontinence with sacral nerve stimulation – a Finnish national study

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Aim: The aim of this multicenter study is to report the results of sacral nerve stimulation (SNS) treatment for fecal incontinence (FI) in Finland and to determine factors that could predict SNS treatment outcome.
Method: This is a national multicenter study, involving all patients tested for SNS implantation in Finland from 1999–2017. Data was collected retrospectively from patient archives and analyzed for possible effects on treatment outcome.
Results: Of the 432 patients tested for SNS 365 were female, 313 (72.5%) of the tested patients advanced to permanent stimulator implantation. A successful treatment outcome, with subjective alleviation of FI was reported by 59.3% of the patients at the end of follow-up (mean 2.4 years, range: 8 days- 13.3 years). Patients with idiopathic FI and obstetric sphincter injury had more permanent stimulator implantations compared to patients with iatrogenic injury ($P = 0.012$). Male patients had significantly worse test phase outcomes compared to female patients ($P < 0.001$). The number of electrodes responding during testing had an effect on the success of the test phase ($P = 0.031$).
Conclusion: Results of SNS treatment in Finland correspond with other published data. We found predictive factors that can help guide future patient selection and reduce the number of unnecessary SNS tests.

P030

Graciloplasty as an effective method for restoration of the perineal body in patients with passive fecal loss

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Aim: Fecal incontinence has an enormous social and economic impact and may significantly impair quality of life. We hypothesize that patients with a large ventral sphincter defect may experience passive faecal loss due to diminished support of the perineal body, which subsequently results in a less effective kinking mechanism of the anorectal angle. The aim of this study was to evaluate the safety and efficacy of a graciloplasty in this selected group of patients.
Method: We retrospectively studied patients with passive faecal loss, and a ventral sphincter defect of more than 90 degrees, who received a graciloplasty between November 2015 and February 2018. Primary outcome measures were success rate, defined as the absence of passive faecal loss 3 months after surgery, and 30-day complication rate.
Results: We retrospectively included seventeen patients in whom a graciloplasty was constructed. Rate of success was 76.5%, as thirteen patients no longer had complaints of passive fecal loss 3 months after surgery. Thirty-day complication rate was 23.5%($n = 4/17$) with surgical site infection as most often reported complication.
Conclusion: Graciloplasty has been proved to be successful in a selected group of patients with passive fecal loss, possibly due to restoration of the perineal body.

P031

Electrophysiological responses of the S3 sacral nerve in humans during neuromodulation for faecal incontinence

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Aim: To investigate electrophysiological responses of the S3 sacral nerve to stimulation during acute sacral neuromodulation (SNM) for faecal incontinence.
Method: Patients underwent a standard SNM trial using commercially available products. Standard patient diaries were used to assess trial outcome. Evoked Compound Action Potentials (ECAPs) were acutely recorded using a custom neurostimulator/recording system. Recordings were obtained during the tined (quadripolar) lead implantation procedure, post-op prior to programming their external trial stimulator, and finally at the end of their trial period. The recordings were analysed to identify the recruited fibre type and neurophysiological characteristics of the responses.
Results: Five patients undergoing SNM therapy were recruited. The responses revealed large inter-patient variability in fibre type recruitment (A-alpha, A-beta, and B fibres) and significant posture-related effects on the recruitment level. Further, responses could not be reliably observed in the patient with failed trial.
Conclusion: These first-in-human results show that ECAP recordings can be used to identify the fibre types recruited by SNM therapy. Further, the ability to stimulate certain fibre types may give a prospective indication of therapeutic effectiveness. These results pave the way for improved targeting as well as closed-loop SNM that has the potential to greatly improve the therapy.

P032

Male sexual dysfunction after surgery for mid to low rectal cancer

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Aim: To clarify the incidence and risk factors of erectile and ejaculatory dysfunction after mid to low rectal cancer surgery.
Method: The subjects were 410 male patients who underwent surgery for primary mid-to-low rectal cancer from 2009 to 2015. Two hundred and thirty four patients (57.1%) completed the International Index of Erectile Function, and a questionnaire on ejaculatory status before and after surgery. Postoperative dysfunction was studied in patients without erectile or ejaculatory dysfunction before surgery. Risk factors were identified for dysfunction at 12 months postoperatively.
Results: 74 and 119 patients had no preoperative erectile or ejaculatory dysfunction, respectively. At 3, 6, and 12 months after surgery, the rates of erectile dysfunction were 64.9%, 59.5%, and 51.4%, and those for ejaculatory dysfunction were 64.7%, 54.6%, and 48.7%, respectively. In multivariate analysis, age >55 ($P = 0.006$), laparotomy ($P = 0.009$) and ileostomy ($P = 0.001$) were associated with erectile dysfunction; and age >55 ($P = 0.02$), lateral lymph node dissection ($P = 0.001$), and early urinary retention ($P = 0.02$) were associated with ejaculatory dysfunction.
Conclusion: Sexual dysfunction occurred in almost half of patients after rectal cancer surgery, but improved over time. Several factors, including laparotomy, had an independent association with sexual dysfunction.

P033

Adverse obstetric history is not a risk factor for poor outcome after ventral mesh rectopexy for obstructive defecation syndrome

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Aim: Ventral rectopexy (VR) for obstructive defecation syndrome (ODS) due to a symptomatic rectocele or intussusception has gained popularity, but data on its efficacy and safety are heterogeneous. Few predictors of successful outcome exist. Our study aimed to examine whether adverse obstetric history affects functional outcome following VR.

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Method: 76 consecutive female patients undergoing VR for ODS at a single center between 2012–2015 were followed up via telephone questionnaire. Data on obstetric history and pre- and postoperative symptoms of ODS and faecal incontinence (FI) were recorded.
Results: ODS symptoms were significantly improved by surgery, with 56% of patients showing ≥ 50% reduction of symptoms ($P < 0.001$). There was no significant change in FI grade following surgery. Obstetric factors including foetal weight, instrumental delivery, episiotomy, perineal tear and number of deliveries did not predict worse outcome following VR. Lower BMI (24.4 *vs* 27.3) and shorter duration of symptoms (7 year *vs* 10 year) prior to surgery were significantly associated with better outcome for ODS symptoms ($P = 0.042$, $P = 0.041$).
Conclusion: Adverse obstetric history was not associated with worse functional outcome following VR and this should not influence patient selection for surgical treatment of ODS. Lower BMI and shorter symptom duration were predictive for a better outcome.

P034
The impact of bariatric surgery on gastrointestinal function

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Aim: Obesity, BMI ≥ 30 kg/m^2 is widely accepted to be one of the leading problems in UK being associated with high morbidity and mortality. Despite the beneficial effects of bariatric surgery, studies have reported bowel changes in patients after the operations. We aim to quantify the colonic symptoms following bariatric surgery and the impact these have on the patients' quality of life.
Method: Twenty six studies were identified examining the effects of bariatric surgery on gastrointestinal function and a systematic review and meta-analyses was performed. The scores of the PFDI-20, POPDI-6, CRADI-8, UDI-6 questionnaires were used to quantify the symptoms experienced by patients following bariatric surgery and PFIQ-7, POPIQ-7, CRAIQ-7, UIQ-7 and PISQ-12 to demonstrate the impact of these symptoms on the patients' quality of life and sexual function.
Results: Following bariatric surgery an overall significant weight loss (WMD -38.6, $P < 0.05$) and BMI change (WMD -14.9, $P < 0.05$) was observed. A statistically significant improvement was also demonstrated in all the studied questionnaire scores after bariatric surgery.
Conclusion: Overall patients report less colonic symptoms and subsequently an improvement in their quality of life and sexual function after their operations.

P035
Clinical evaluation and treatment of chronic diarrhoea following cancer in the colon and pelvic organs

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Aim: Chronic gastrointestinal symptoms are common among patients surviving treatment for cancer in the bowel or pelvic organs. It is unknown whether patients will benefit from evaluation by a gastroenterologist. The aim of this study was to present the results of standard clinical evaluation and treatment of chronic diarrhoea among patients surviving cancer in the colon and pelvic organs.
Method: All patients referred to our clinic from September 2016-March 2018, as a cause of chronic diarrhoea after treatment of cancer in the colon or pelvic region, were prospectively evaluated.
Results: The patients ($n = 43$) were treated for cancer in the caecum/ascending colon ($n = 24$), sigmoid colon ($n = 1$), rectum ($n = 9$), anus ($n = 2$), cervix uteri ($n = 3$), corpus uteri ($n = 1$), ovary ($n = 2$), and prostate ($n = 1$). Symptoms included frequent bowel movements ($n = 29$), loose stools ($n = 38$), urgency ($n = 23$), faecal incontinence ($n = 23$), and nocturnal defecation ($n = 7$). Main findings were bile acid malabsorption ($n = 20$) and small intestinal bacterial overgrowth ($n = 16$). Treatment included bile acid sequestrants ($n = 19$), antibiotics ($n = 17$), loperamide ($n = 16$), and dietary intervention ($n = 4$). After treatment, 41% of patients reported major improvement of symptoms, while 32% reported some improvement.
Conclusion: Most patients with chronic diarrhoea following cancer in the colon or pelvic organs will benefit from clinical evaluation and targeted treatment.

P036
How does bariatric surgery affect symptoms related to pelvic floor disorders in obese female patients? A prospective study

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Aim: Obesity is a well-known risk factor for female pelvic floor disorders. This study assessed the effect of bariatric surgery on pelvic organ prolapse symptoms (POPs), urinary (UI) and anal incontinence (AI) in a cohort of morbidly obese women.
Method: Female patients undergoing bariatric surgery from June 2016 to June 2017 were prospectively included. POPs, UI and AI were compared at baseline and 1 year after surgery using validated questionnaires on function and quality of life.
Results: Seventy-four women (mean age: 41 ± 12.3 years (range:20–65); mean preoperative BMI: 41.6 ± 5.7 kg/m^2(range:26–56)) were enrolled. At baseline, 36 (49%), 41 (55%) and 37 (50%) patients respectively had AI (flatus only: 72%, faecal: 30%), UI and POPs. The mean total body weight loss at 1 year was 29%. Surgically-induced weight loss was associated with a significant improvement in UI ($P = 0.002$) but there was no significant difference in terms of AI and POPs ($P = 0.81$ and $P = 0.09$ respectively). Bowel habits change correlated with persisting symptoms of faecal incontinence.
Conclusion: Bariatric surgery is associated with a significant improvement in UI but not in AI and POPs. A larger study focusing specifically on AI symptoms and their management is underway.

P037
Dynamic graciloplasty can be an option to treat severe faecal incontinence. Twenty-years' experience from one tertiary referral centre

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Aim: To report our long-term results with dynamic graciloplasty for faecal incontinence (FI).
Method: All patients who underwent dynamic graciloplasty for FI in our tertiary referral center were included and analysed.
Results: From 1997 to 2017, 32 patients (25 females, mean age = 48 ± 17 years) underwent dynamic graciloplasty for severe FI (mean Wexner score: 16 ± 2) after failure of biofeedback therapy and previous surgeries (myoraphy, rectopexy, sacral nerve stimulation, diverting stoma). Postoperative overall and major morbidity occurred in 23 patients (72%) and 7 patients (22%), respectively. Unplanned surgery was required in 6 patients, for sepsis ($n = 3$), hematoma ($n = 2$), and scar disunion ($n = 1$), and percutaneous drainage was performed in one patient. Mean length of stay was 20 ± 6 days.

Eleven patients underwent the removal of the generator, and in 5 of them, another generator was placed. After a mean follow-up of 9 ± 5 years, dynamic graciloplasty was still present in 21 patients, and successful in 14 of them (67%; 44% from overall series).
Conclusion: Our study suggests that dynamic graciloplasty improves half of patients with severe FI after failure of other treatments. Patients should be informed that this surgical procedure could be associated with postoperative morbidity.

P038
What is the best trans-anal procedure for rectocele treatment? A comparative study between Sullivan and STARR procedures

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Aim: To compare long-term results between Sullivan and Stapled Trans-Anal Rectal Resection (STARR) procedures.
Method: All patients who underwent trans-anal procedure for symptomatic rectocele from 2004 to 2015 in two tertiary referral centers were included and divided in two groups according to the type of procedure.
Results: 208 women (median age = 58 [29–86] years) were included and divided in groups Sullivan ($n = 121$) and STARR ($n = 87$). Postoperative morbidity was similar between groups (5 vs 9%, $P = 0.27$). At 3 postoperative months, no recurrence was noted. Follow-up of more than 1 year was available in 151 patients. After a median follow-up of 5 (1–13) years, Long-term recurrence rates were similar (15 vs 12%, $P = 0.6$). Symptoms of outlet obstruction was more frequently observed in Gr Su (31 vs 14%, $P = 0.02$) whereas urgency and de novo fecal incontinence were less frequently noted in group Sullivan compared to group STARR (4 vs 36%, $P < 0.0001$ and 9 vs 23%, $P = 0.03$).
Conclusion: Our study suggests that Sullivan and STARR procedures are associated with similar satisfactory long-term results for the treatment of symptomatic rectocele. Patients should be informed for the long-term occurrence of outlet rectal obstruction (Sullivan) or urgency and de novo fecal incontinence (STARR).

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P039

A retrospective analysis of botulinum toxin for anal fissure at Wexham Park Hospital

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Aim: Protocols for administration of botulinum toxin vary across the literature. A Cochrane review reported healing rates between 23% and 76%. We wished to compare the healing rates at our institution against these to guide future management.
Method: All patients who underwent injection of botulinum toxin for anal fissure over a 12 month period were included. Data of interest included: amount of botulinum toxin given; site of injection (two quadrant vs four quadrant); number of repeat procedures, resolution of symptoms; and incidence of incontinence.
Results: 94 patients were studied. Rate of symptom resolution was 67% (70% and 56% for administration of 100 units and 50 units respectively), though this did not achieve statistical significance. However, there was a significant decrease in the number of repeat procedures in the 100 unit group ($P = 0.02$). There was no significant difference in healing rate for the number of quadrants injected with the same total dose. There were no reports of incontinence. Non-healers were offered repeat injection, sphincterotomy, or referral for anorectal physiology.
Conclusion: Healing rates at our centre compare favourably to the published literature. Using the higher dose of 100 units improves cure rate and reduces the need for repeat procedures.

P040

Results of satisfaction survey after percutaneous tibial nerve stimulation (pTNS) in a serie of 62 patients with fecal incontinence

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Aim: Fecal incontinence affects approximately 10% of the population, with a devastating impact on quality of life. PTNS, represent an alternative to surgical treatments, it's less invasive and cheaper, results from large series studies are needed
Method: Retrospective analysis was performed including patients treated with pTNS in our hospital between 2015 and 2018. A total of 62 patients were included. Demographic, aetiopathogenic and follow up data were collected. A survey was conducted before and after the treatment to evaluate the satisfaction with the technique. It consisted on ten sections evaluating the time until the beginning of the treatment, the privacy, the information received, the proper technique, the subjective improvement and the monitoring and global satisfaction. The degree of satisfaction was assessed from 1 to 10
Result: 100% of the patients responded to the survey. The average satisfaction was 7. The highest ratings were for health professionals (9.87) and the worst for the waiting time (7.45). When considering the obtained results (Wexner and FIQL), 68% of the patients improved after pTNS
Conclusion: The global satisfaction rate of patients treated with pTNS was high. This therapy should be considered as an alternative for patients with fecal incontinence before invasive procedures

P041

Delorme surgery for rectal mucosa prolapse after ISR in 28 patients

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Aim: Intersphincteric resection (ISR) is performed with anal preservation, but rectal mucosa prolapse can be an anastomotic problem after ISR. Here, we report use of Delorme surgery to treat rectal mucosa prolapse in such cases.
Method: A total of 575 patients underwent ISR between 2001 and 2017 at our hospital, and 28 of these patients underwent initial Delorme surgery for postoperative rectal mucosa prolapse. An analysis of these cases was performed.
Results: The average age of the 28 patients was 61.7 years old; 20 were male and 8 were female; and 13, 6 and 9 had undergone total, subtotal and partial ISR, respectively. The mean anastomotic level from the anal verge was 1.5 cm. End-to-end and side-to-end anastomoses were performed in 24 and 4 cases, respectively. Laparoscopic surgery was performed in 24 cases and a diverting stoma was created in 27 cases, including 10 in which the diverting stoma was closed before Delorme surgery. The average Wexner score changed from 14.1 before Delorme surgery to 12.1 after this surgery, and most patients also had improvement of local symptoms.
Conclusion: These results suggest that Delorme surgery for rectal mucosa prolapse after ISR can improve local symptoms and Wexner scores.

P042

Old method – new century: the Altemeier procedure

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Aim: For therapy of rectal prolapse the method of choice – abdominal or perineal approach – is selected based on surgeon's experience, patient's preference and clinical findings. Little evidence is found for usability of the Altemeier procedure within the last decades. Therefore, we evaluated this old technique, which is traditionally used at our department.
Method: We retrospectively assessed clinical data of all patients with full thickness rectal prolapse treated with Altemeier procedure from January 2013 to November 2017. Postoperative and long-term assessment included a physical examination and scoring of faecal continence.
Results: Data of 17 women and 1 man (median age 77 years, 44–101) were included. Median length of external prolapse was 10 cm (2–16). 88% of the patients were suffering from faecal incontinence and showed improved scoring postoperatively. No complications were observed. One early recurrence (1 month post-surgery), but none in the long-term follow up (median follow up 9 months, range 1–63) was seen.
Conclusion: The Altemeier procedure is an effective treatment for full thickness rectal prolapse with low recurrence rate in the long term follow up. A short hospital stay, low perioperative risk, and the high degree of patients' satisfaction, emphasise the importance of this procedure alongside abdominal approaches.

P043

Effectiveness of pelvic floor rehabilitation for bowel dysfunction after intersphincteric resection for lower rectal cancer

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This abstract has been accepted for publication.

P044

A total laparoscopic approach reduces erectile dysfunction after ileal pouch-anal anastomosis: a two-centre study

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Aim: To assess the impact of ileal pouch-anal anastomosis (IPAA) on male erectile function (EF) and fertility.
Method: This was a prospective two-centre study. All patients under 70 years undergoing IPAA were included. All patients responded to the international index of erectile function (IIEF), Wexner questionnaires and a fertility survey. Patients fertility was compared to controls undergoing appendectomy after matching for age at surgery, desire for paternity (DP) and follow-up.
Results: 118 patients were included, among which 35 (30%) presented erectile dysfunction and 7 (6%), severe erectile dysfunction. An age older than 50 years and open rectal dissection were independent risk factors for erectile dysfunction (OR = 2.79, $CI_{95\%}$ [1.17–6.64], $P = 0.021$; OR = 6.67, $CI_{95\%}$ [1.85–24.07], $P = 0.004$, respectively). Among the 30% patients with ED, 21 patients (72%) had the feeling of a weaker/inconstant ejaculation and for 25 (78%) an alteration of global sexuality. About ejaculation evolution, it was inconstant or decreased in 29 patients (25%). There was no infertility after IPAA compared with controls: 23 (20%) IPAA patients presented with pregnancy in their couple *vs* The 27 (22%) controls ($P = 0.64$).
Conclusion: A total laparoscopic approach, including rectal dissection, should be preferred in IPAA to preserve erectile function. Male fertility is not impaired after IPAA.

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P045

Risk factors for postoperative ileus following elective laparoscopic right colectomy: A retrospective multicentric study

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Aim: The aim of this study was to identify pre-, intra- and post-operative risk factors associated with the development of postoperative ileus (POI) following elective laparoscopic right colectomy.
Method: Between 2004 and 2016, 637 laparoscopic right colectomies were performed. Data were analysed retrospectively thanks to the CLIHMET database.
Results: Patients with POI ($n = 113$, 17.7%) were compared to those without postoperative ileus (WPOI) ($n = 524$, 82.3%). In the POI group, there were more men (62%vs49%; $P = 0.012$), more use of epidural anaesthesia (19%vs9%; $P = 0.004$), more intraoperative blood transfusion requirements (7%vs3%; $P = 0.018$) and greater perioperative intravenous fluid administration (2000 mL *vs* 1750 mL; $P < 0.001$). POIs were more frequent when extracorporeal vascular section (20%vs 2%; $P = 0.049$) and transversal incision for extraction site (34%vs 23%; $P = 0.044$) were performed.Overall surgical complications in the POI group were significantly greater than in the control group WPOI (31.9% vs 12.0%; $P < 0.0001$). Multivariate analysis found the following independent POI risk factors: male gender, epidural anaesthesia and postoperative blood transfusion requirement.
Conclusion: Modifiable risk factors such as epidural anaesthesia and intraoperative blood transfusion should be used with caution in order to decrease POI rates.

P046

Low anterior resection syndrome and quality of life after sphincter sparing rectal cancer surgery: A long-term longitudinal follow-up

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Aim: To elucidate whether symptoms of low anterior resection syndrome change over time and if the correlation to quality of life is equivalent when measured at two time points.
Method: A multicenter prospective cohort study including measurements at two time points (5 years between). Outcomes were measured with the LARS-score questionnaire including a question assessing impact of bowel function on QoL and with a validated QoL questionnaire (EORTC QLQ-C30).
Results: In total, 282 patients were included and there was no statistically significant differences in the distribution in the three groups (no-, minor- and major low anterior resection syndrome) when comparing follow-up 1 with follow-up 2 ($P = 0.455$). At follow-up 2, 138 patients (49%) still experienced major impairment. No statistically significant differences were seen in mean score of EORTC QLQ-C30 when comparing the same low anterior resection syndrome group at follow-up 1 and follow-up 2 and the impact on quality of life was comparable. Global health status/QoL was impaired in the major low anterior resection syndrome group at both follow-up 1 ($P < 0.001$) and follow-up 2 ($P < 0.001$).
Conclusion: Difficulties with low anterior resection syndrome and the impact on patients' quality of life persists over time.

P047

Low anterior resection syndrome: are we getting to the bottom of the problem with TaTME?

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Aim: Low Anterior Resection Syndrome (LARS) is a common condition that impacts quality of life (QoL) after low anterior resection. Transanal TotalMesorectalExcision (TaTME) has potential to reduce its impact. No study to date has addressed long-term LARS outcomes after TaTME. Our aim was to evaluate LARS after TaTME for rectal cancer.
Method: A single Tertiary Referral Center's International Registry was reviewed for LARS and QoL scores in consecutive rectal cancer patients undergoing laparoscopic TaTME. Results were based on patient self-reported surveys, administered before and 12–24 months after surgery.
Results: Twenty-nine patients were included (86.2%male). Mean tumour height from the anal verge was 6.1 cm (SD 2.1), mean size was 3.3 cm, 79.3% occupied more than 2 quadrants. Eight patients (27.6%) received neoadjuvant radiochemotherpy. LARS categories before surgery and at long-term follow-up, respectively, were: no functional LARS: 37.9% vs 27.6%, minor: 44.7% *vs* 51.7%, and major: 17.4% vs 20.6%. Long-term LARS score was not associated with self-reported QoL, height from the anal verge, chemoradiotherapy or tumour size (Pearson's correlation non-significant). Thirteen patients preserved their function (44.8%) and 7 had improved LARS at follow-up (24.1%).
Conclusion: Long-term TaTME outcomes show promising results for improving or preserving function. Further, it may lessen the impact of LARS on QoL.

P048

Evaluating response to sacral nerve stimulation in patients with low anterior resection syndrome: are scores good enough?

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Aim: To analyse our institutional series of patients treated with sacral nerve stimulation (SNS) for low anterior resection syndrome (LARS) and evaluate outcomes regarding scores and symptomatic improvement.
Method: All described symptoms, bowel function and anal physiology were evaluated. LARS scores before and after and programming parameters of SNS were revised.
Results: 25 patients (12 male, mean age 55 years) had SNS from 2008 to 2018, all presenting major LARS for a mean of 3 years (range 1–7). Cases were LAR (16 cancer, 4 endometriosis), 2 total colectomies, 1 coloanal and 2 extensive transanal resections. Mean pre-SNS LARS score was 40, mean post-SNS LARS (1 year) was 33, still considered Major LARS. In all patients, urgency and bowel function improved. Urinary/sexual dysfunction (7) and proctalgia (3) improved as well. Patients with preserved sphincters and rectal sensitivity performed better, needing lower voltages. There were 2 clear periods: 2008–2012 pre-SNS study was less exhaustive with more negative outcomes. From 2013–2018 patient selection, score completion and outcomes improved.
Conclusion: SNS therapy can improve a wide variety of symptoms associated with LARS, and a careful selection of patients can enhance outcomes. Patients can be satisfied with therapy despite not improving their LARS score.

P049

Long-term results of sacral nerve stimulation for chronic refractory constipation: are patients satisfied with therapy?

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Aim: There has been some controversy regarding the efficacy of Sacral Nerve Stimulation (SNS) for the treatment of chronic refractory constipation, due to less positive outcomes and concerns about cost-effectiveness in the long term.
Method: We analysed our institutional series of patients with SNS for constipation (2008–2017), and registered clinical factors, profile of constipation, physiology studies and patient's subjective satisfaction with SNS therapy.
Results: Twenty-nine patients (86% female, mean age 49 years) were tested for SNS, 24 were implanted after a positive test phase (range 3–8 weeks). There were 2 bilateral and 22 unilateral implants, in S3 or S4 depending on best response. Mean follow-up was 59 months. Efficacy was considered as score ≥5 (range 1–10) in general symptom improvement, and this represented 37.9% of implanted patients. In 6 cases (25%) patient satisfaction was 9–10. Due to the small sample there were no statistically significant variables considered as predictors of response.

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Conclusion: Our results agree with current studies which describe around a 30% response of SNS for refractory constipation. However, there is a small group of patients which are highly satisfied with SNS therapy: more studies would be needed to better understand this profile and optimise outcomes.

P050
Risk factors for low anterior resection syndrome after rectal cancer treatment

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Aim: Studies have reported an incidence of low anterior resection syndrome (LARS) between 19% and 52% in patients with low anterior resection. Our aim to investigate the risk factors of LARS after low or very low anterior resection for rectal cancer patients.
Method: Patients undergoing low anterior resection for rectal cancer between January 2015 and February 2018 were included in the study. All patients who had bowel continuity restored and underwent curative resection were sent a LARS questionnaire. The demographic and clinicopathological features were compared among groups and the risk factors of major LARS were tested by logistic regression analysis.
Results: A total of 110 patients (72 males, 38 females) completed the questionnarie, with an average age of 64 (32–81) years. 61 patients (55.4%) had no LARS, 24 (21.8%) had minor LARS, and 25 (22.7%) had major LARS. Extent of operation and presence of protective ostomy were significantly associated with majör LARS (*P*:0.003 and *P*:0.009 respectively). There is no significant differences associated majör LARS in accordance with neoadjuvant radiotherapy and histopathological grade (*P*:0.561 and *P*:0.99 respectively).
Conclusion: Extent of operation and presence of protective ostomy are risk factors for the development of LARS.

P051
An analysis of surgical outcomes for rectal prolapse at a single institution: retrospective observational study

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Aim: To consider the appropriate operation for full thickness rectal prolapse patients.
Method: Between January 2012 and December 2015, all patients who had abdominal approach and perineal approach for full thickness rectal prolapse were enrolled this study. The data were analyzed retrospectively.
Results: 154 patients were enrolled this analysis. The mean age was 68.1 years old. Between perineal approaches ($n = 100$) and abdominal approaches ($n = 54$), gender ratio was not significantly different ($P = 0.164$). In the mean age, the patients who underwent the perineal approaches (70.5 years old) were older than the others (63.4 years old) ($P = 0.02$). In mean operative time, perineal approaches were significantly shorter than abdominal approaches ($P = 0.00$). With a mean follow up of 45.4 months, recurrence rates were not significant between two groups (perineal approaches 17% vs abdominal approaches 9.3%, $P = 0.190$). In terms of satisfaction of the operation, abdominal approach is similar to perineal approaches. In postoperative incontinence improvement, abdominal approaches were better than perineal approaches ($P = 0.012$).
Conclusion: As other articles for rectal prolapse, our study has shown the abdominal approach group had younger and healthier than perineal group. Both the perineal approach and abdominal approach are feasible and effective treatment for rectal prolapse.

P052
A systematic review and network meta-analysis comparing treatments for fecal incontinence

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Aim: To compare the effectiveness of treatments for fecal incontinence (FI).
Method: A systematic literature review and Bayesian network meta-analysis was performed.
Results: Forty-three randomised controlled trials were included comparing 33 treatments for FI and reporting on 3559 participants. No treatment ranked best or worst with high probability for any outcome of interest. No significant difference was identified between treatments for adverse events and episodes of FI per week. No significant difference was found between treatments in changing the resting pressure, maximum resting pressure, squeeze pressure, and maximum squeeze pressure. Sacral nerve stimulation (SNS), artificial bowel sphincter (ABS), and zinc-aluminium, significantly improved incontinence scores compared to placebo, medical management, biofeedback/pelvic floor muscle training plus medical management, and transanal irrigation. All domains of the fecal incontinence quality of life questionnaire significantly improved by using zinc-aluminium ointment compared to placebo, and the embarrassment domain was significantly improved by SNS compared to placebo.
Conclusion: SNS, ABS, and zinc-aluminium exhibited limited benefits to patients. No treatment persistently improved outcomes, and popular treatments did not significantly benefit patients compared to placebo. This review questions the clinical effectiveness and cost-effectiveness of FI treatments and larger trials with standardized outcome measures and long-term follow-up are required.

P053
"Low anterior resection syndrome" after surgery for colon cancer – is right worse than left?

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Aim: Low Anterior Resection Syndrome (LARS) has not previously been studied after treatment for colon cancer. This population-based cohort study aimed to evaluate differences in occurrence of LARS after right- versus left-sided colectomy and to assess the impact of LARS on HRQoL after colon cancer.
Method: Patients operated with segmental colonic resection for colon cancer stage I-III in the Stockholm-Gotland region 2013–2015 got EORTC QLQ C30, CR29 and LARS score 1 year after surgery. Clinical data were collected from the Swedish ColoRectal Cancer Registry.
Results: Complete answers to the questionnaires were obtained by 517 (59.7%) out of 866 patients. Major LARS was reported in 20.6% after right-sided resection and 15.6% after left-sided resection. OR for major LARS after right resection was 1.45 (CI 1.02–2.06, $P = 0.037$) compared to left. After adjustment for age and sex, a significant increase in the risk for major LARS after right resection remained, with OR 1.48 (95% CI 1.03–2.13, $P = 0.035$). Major LARS was related to impaired HRQoL.
Conclusion: Major LARS was more frequent after right-sided colon resection than after left-sided resection and correlated to an impaired quality of life. The finding of worse functional results after right-sided colon resection than left-sided warrants further studies.

P054
A multicentre randomised controlled trial comparing surgical treatments for rectal prolapse

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Aim: There is no standard surgical treatment for rectal prolapse; therefore a randomised study was performed at 13 surgical units during 2000–2008.
Method: Patients were randomised between perineal and abdominal approach (a). The perineal group was further randomised to Delorme or Altemeier (b) and the abdominal group to suture rectopexy or resection rectopexy (c). Patients not suitable for either perineal or abdominal procedure were included in only (b) or (c). Primary outcome was bowel function but this analysis aims to evaluate recurrence rate at 3 years.
Results: In all 18 patients were randomised between perineal and abdominal procedure (a). 80 patients were randomised in (b) and 54 in (c). In (a) recurrence rate after 3 years was 71% (5/7) for perineal procedures and 29% (2/7) for abdominal procedures. In (b) the recurrence rate was 58% (18/31) for Delorme and 54% (15/28) for Altemeier. In (c) the recurrence rate was 22% (4/18) for suture rectopexy and 11% (2/19) for resection rectopexy.
Conclusion: No significant differences regarding recurrence of prolapse were seen in any of the randomised comparisons. The recurrence rate for abdominal procedures is comparable with previous studies while the recurrence rate for Delorme and Altemeier is higher than previously reported.

P055
Management of faecal incontinence using the novel 4 stage FINCH Strategy

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Aim: To demonstrate the efficacy of a novel 4 stage process in the treatment of faecal incontinence (See appendix)
Method: Data was collected on patients with faecal incontinence referred to our tertiary pelvic floor service between 2011 and 2017. All patients underwent a graded sequential treatment protocol. Those with subjective and objective improvement at each stage were discharged.

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Results: 909 patients were seen by the service. Data and follow up was available for 586 patients. (64%). Over half the patients were discharged after stage 1 and 22% progressed to stage 4. The majority of patients in stage 4 underwent nurse led PTNS, with only 2.5% requiring consultant input and intervention (13 patients had SNS and 2 patients had stoma formation). Data was collected on daily bowel movements, deferment time, leakage, limitation in activities of daily living, Wexner score, GIQOL and SF36 scores. All showed significant improvements at each stage.
Conclusion: Simple, organised, graded nurse led treatment strategies can greatly improve symptoms and quality of life in patients with faecal incontinence with very few patients requiring invasive consultant led surgical intervention.

P056
A targeted biofeedback programme improves functional outcome following low anterior resection

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Aim: ARS impacts QoL for 90% of patients who have rectal cancer surgery. This study evaluated the effectiveness of a targeted biofeedback programme in patients with ARS.
Method: Data collected from patients who had Anterior Resection/TATME with/without an ileostomy. Patients seen approximately 8 weeks post Anterior resection/TATME or reversal of ileostomy. Patients commenced on a 4-stage nurse led biofeedback programme. Bowel diaries, Wexner and ICIQ-B assessed outcome at each stage.
Results: Data complete in 26 of 29 patients who completed treatment. (Median age 61 range 60–64), 12 male. Overall improvement in bowel function seen in all patients based on Wexner and ICIQ-B. Average bowel movements per day reduced 5 to 2 (paired t-test; $P = 0.007$). Average deferment time increased from 3 mins to 20 mins ($P = 0.48$). 30% of the patients reported episodes of urge incontinence with an 86% reduction on discharge (Fisher's exact test; $P = 0.0496$). Post defecation and nocturnal leakages reduced by 89% ($P = 0.02$). Post treatment, of the 57% who reported bowel symptoms limited their daily activities, all 57% reported a 100% improvement ($P < 0.0001$). Significant improvements were seen in both QoL and Wexner scores.
Conclusion: Targeted nurse led biofeedback programmes are an effective method in the short-term management of ARS.

P057
Is digitation a serious complaint?

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Aim: To investigate the degree of pelvic organ prolapse (POP) with pelvic floor ultrasound (PFUS) in patients with chronic constipation (CC) or obstructed defecation symptoms (ODS), complaining of digitation, since the evidence in literature on this topic is scarce.
Method: 38 patients, examined at one proctology clinic for CC or ODS, were referred to PFUS between June 2017 and March 2018. Data about parity, type of delivery, length and type of bothersome symptoms regarding defecation, previous operations and diagnostic procedures, proctological and gynecological examination, and ultrasonographic measurements were prospectively collected using Redcap system.
Results: 55% (21) of patients with ODS or CC claimed to have any kind of anal incontinence. 89% (34) complained of feeling of incomplete evacuation. 40% (15) of the patients complained of digitation and 87% (13) of these were found to have ultrasonographically seen rectocoele, 53% (8) rectal intussusception, 47% (7) cystocoele, 20% (3) uterine descent and 13% (2) enterocoele.
Conclusion: Patients using digital manoeuvres for defecation were shown to have at least two concurrent kinds of POP seen on PFUS, mostly rectocoele. Patients with ODS or CC should be questioned of digitation on the regular basis.

P058
Assessment of outpatient pelvic floor ultrasound investigations by specialist nurse therapists

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Aim: Assessment of pelvic floor ultrasound investigations by specialist nurses.
Method: Two specialist pelvic floor nurses completed courses covering complete perineal pelvic floor ultrasound examination (PPU), endo-vaginal (EVU) and endo-anal ultrasound (EAU). 60 patients consecutively examined for anal incontinence between July 2017 – April 2018. Examinations were analysed by 2 independent observers- consultants. Parameters assessed were, Organ orientation, Technique – contrast enhancement and Diagnostic value. Grading was from 0 – 2. 0 was good, 1 acceptable and 2 unacceptable. Consecutive batches of 15 patients analysed.
Results: An acceptable grading was achieved after 45 examinations for PPU and EVU examinations. For EAU examinations grading was good after 30 patients. After 60 examinations PPU (mean 0.900) and EVU (mean 0.804) remained acceptable and EAU rated good (mean 0.300) $P = 0.06$. Patients older than 55 years (41/60 patients) were significantly more difficult to examine $P = 0.001$. There was no significant difference between the nurses with regards to patients examined.
Conclusion: A good EAU grading can be achieved after 30 examinations. A minimum of 45 examinations is needed for an acceptable PPU and EVU examination. Age is a confounding factor in PPU examinations. Specialist nurses can perfom complete pelvic floor ultrasound examinations needed for correct diagnosis.

P059
Ventral sacrocolporectopexy with biological mesh in the treatment of total rectal prolapse combined with vaginal vault prolapse

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Aim: Rectal and vaginal vault prolapse have been treated as separate entities with abdominal or perineal or tranvaginal approaches. In this study, we present our experience with a single abdominal procedure using a single biological mesh to treat rectal prolapse combined with vaginal vault prolapse.
Method: Cross-linked porcine dermal collagen meshes were used. Prospectively collected data were analysed. Complications were recorded as long term outcome and recurrence. Preoperatively, all patients underwent clinical examination, colonoscopy, anorectal manometry, proctography and anal endosonography. All patients were evaluated preoperatively and postoperatively at 1, 3, 6 months.
Results: Twenty-five consecutive patients underwent surgical procedure with transverse or short median laparotomy. Median age was 72 years. All patients except three received epidural anaesthesia. There was no mortality, and only two patients had complications including one urinary tract infection and one postoperative bleeding treated conservatively. One patients developed rectal prolapse recurrence treated subsequently with transanal stapled technique. No vaginal vault recurrence were recorded. No erosions were observed or other mesh-related complications.
Conclusion: Correction of both prolapse with a single biological mesh seems to be safe at 6 month follow-up.

P060
Anastomotic leakage impairs long-term quality of life after rectal resection

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Aim: We aimed to establish the long-term impact of anastomotic-leakage (AL) after rectal resection on health-related quality-of-life (HRQoL). While AL confers early postoperative morbidity, late-outcomes remain unclear.
Method: Surviving patients were identified who had AL (LEAK) following sphincter-preserving rectal cancer resection at two high-volume centres from 2003–2016. A comparison cohort (CONTROL) was identified, matched by sex, neoadjuvant-radiotherapy, adjuvant-chemotherapy, and ileostomy formation (ratio 1:3 LEAK: CONTROL). A single cross-sectional HRQoL assessment was performed (EORTC-QLQ-C30).
Results: 75 surviving LEAK patients were identified, matched to 225 CONTROLs. Completed EORTC-QLQ-C30 questionnaires were received from 33/75 LEAK (44%) versus 114/225 CONTROL (50.7%, $P = 0.35$). AL grade was A-6; B-18; C-9. Mean post-operative follow-up was 67.0 ± 5.9 months versus 68.4 ± 3.4 months ($P = 0.85$). More LEAK patients still had a stoma (39.4% [13/33] versus 5.3% [6/114], OR 11.7 [3.9–35.1], $P < 0.0001$). There was a significant impairment in global HRQoL in LEAK compared to CONTROL patients (68.7 ± 3.4 vs 76.6 ± 1.7, $P = 0.020$), and in role and social functional domains ($P < 0.021$). LEAK patients had increased fatigue, nausea, pain and anorexia symptom scores ($P < 0.046$).
Conclusion: AL has persisting impact on HRQoL, with higher stoma rates, lower global HRQoL, and impairment in role and social functions.

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P061

Factors associated with low anterior resection syndrome and comparative assessment of three validated questionnaires at Greek rectal cancer patients

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Aim: To compare validated questionnaires [Low Anterior Resection Syndrome (LARS), Colorectal Functional Outcome Questionnaire (COREFO) and Memorial Sloan-Kettering Cancer Center Bowel Function Instrument (MSKCC-BFI)] and to identify factors adversely affecting LARS at rectal cancer patients after surgery.
Method: 120 rectal cancer patients after (ultra-)LAR. Associations between questionnaires and their subscales were evaluated with Spearman's correlation (rho). The ability of the questionnaires to differentiate between groups of patients with proposed risk factors was assessed.
Results: LARS total score was significantly correlated to all COREFO sub-scales with the strongest positive associations to "incontinence" and "social impact" scales. Significant correlations were detected between LARS score and all MSKCC subscales, with the most pronounced ones to be revealed with the "urgency" and "clustering". Significant associations were detected between LARS, COREFO, MSKCC-BFI and tumor distance and temporary stoma ($P < 0.05$). COREFO and MSKCC-BFI were significantly associated with radiation.
Conclusion: Low anastomosis, temporary stoma and radiation treatment were revealed as factors adversely affecting LARS scoring. LARS score was strongly correlated with important COREFO and MSKCC subscales which are related to discrete functional aspects of LARS. The shorter LARS score may be established as the simplest, fast-comliting and targeted tool to assess low anterior resection syndrome.

P062

Long-term outcome after segmental colonic resection for slow transit constipation

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Aim: Colectomy with ileorectal anastomosis (IRA) is the most common surgical procedure for slow transit constipation (STC).A hemicolectomy has been suggested as an alternative to IRA with good short-term results. The aim of this study was to evaluate the long-term results after hemicolectomy as a treatment for STC.
Method: 50 patients with STC were selected for hemicolectomy after evaluation with colonic scintigraphy from 1993–2008. Eligible patients ($n = 43$) received a bowel function questionnaire and a questionnaire about patient-reported outcomes.
Results: After a median follow-up of 19.8 years, 13 patients had undergone rescue surgery ($n = 12$) or used irrigation ($n = 1$) and were classified as failures. 30 were evaluable for functional outcome and questionnaire data for 19 patients could be analysed. Median stool frequency remained increased from one to six at long-term follow-up ($P = 0.001$). Preoperatively, all patients used laxatives, whereas twelve managed without laxatives at long-term follow-up. There was a reduction in other constipation symptoms but not statically significant.In the patients'global assessment; ten stated a very good result, eight good results and one a poor result.
Conclusion: Hemicolectomy for STC increases stool frequency and reduces laxative use. Long-term success rate was 60% (18/30) but could range between 18/50 (36%) to 36/50 (72%) depending on outcome among non-responders.

P063

Long-term outcome after laparoscopic ventral rectopexy for external rectal prolapse

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Aim: The study assessed long-term outcomes after laparoscopic ventral rectopexy (LVR) for external rectal prolapse (ERP).
Method: Between 2011 and 2015, patients who underwent LVR were included. Fecal incontinence and constipation was scored using the fecal incontinence severity index (FISI) and the constipation scoring system (CSS). Data were shown as mean (range).
Results: Fifty-eight patients were included. There was no mortality and major morbidity. After an active follow-up of 50 (6–91) months, recurrence of ERP was noted in 1/58 (2%). There were no mesh-related complications. Of the 10 patients with new-onset recto-anal intussusception (RAI), 4 underwent reoperation. In 2 of the 4 patients, mesh detachment from the sacrum occurred, and re-LVR was performed. The remaining 2 patients underwent Delorme's transanal excision for mucosal prolapse. The FISI score was significantly reduced at 3 months (35 *vs* 14, $P < 0.0001$) and remained significantly reduced at each postoperative time until 6 years). The CSS score was significantly reduced at 3 months (14 *vs* 8, $P < 0.0001$) and remained significantly reduced at each postoperative time until 3 years). The remaining 24 patients without constipation preoperatively did not develop new-onset constipation.
Conclusion: LVR for ERP was associated with low morbidity and recurrence and a long-term improvement in function.

P064

Biopsies in normal colons for loose stools: should this practice be abandoned?

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Aim: Guidelines advocate that routine biopsies should be taken during endoscopy for patients with loose stools or diarrhoea in a macroscopically normal colon. The aim of this study was to investigate the yield of routine biopsies, and whether they changed management.
Method: Retrospective study over a 1 year period of all patients referred for colonoscopy for loose stools or diarrhoea. Colonoscopy findings by JAG accredited endoscopists and histopathology results were extracted. We included acute, chronic, lymphocytic and collagenous colitis as microscopic colitis in the absence of visible inflammation.
Results: 386 patients were referred with loose stools and underwent colonoscopy. 370 patients had no visible colitis at endoscopy. 350 patients had biopsies, in whom 30 revealed microscopic inflammation (8.6%). 10 patients with microscopic colitis required no further management as their symptoms had spontaneously settled and 14 patients were managed without steroids. 6 patients with microscopic colitis were treated with steroids, 4 had resolution of their symptoms.
Conclusion: Steroids were only used in 1.7% of patients with loose stools who underwent colonic biopsy in the absence of visible colitis. We suggest further research into clinical presentation of symptoms to determine when biopsies should be taken in patients with loose stools.

P065

Water-perfused anorectal manometry and pull-through maneuvers are unreliable techniques because they inadvertently increase anal pressure

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Aim: We aimed to demonstrate that the results of water-perfused catheters and pull through maneuvers are unreliable because they inadvertently increase anal pressure.
Method: We, retrospectively, studied 44 healthy subjects. First, we analyzed the results of the anorectal pressure test. We compared the basal anal pressure, when the manometry was performed without any maneuvers, i.e. stationary pressure, with outcomes obtained when stepwise and pull-through maneuvers were performed. Second, we analyzed the results of the rectal infusion test that simulates the use of water-perfused catheters. We compared the basal anal pressure, i.e. pressure measured before the rectum was filled with water, with the anal pressure after we had started filling the rectum with water.
Results: Pull-through basal anal pressure was higher than stepwise and stationary basal anal pressure ($P < 0.001$). After inserting 20 mL of water into the rectum, anal pressure increased significantly from 80 mm Hg to 135 mm Hg within 5 s ($P < 0.001$). We obtained comparable results when we analyzed men and women separately.
Conclusion: Water-perfused catheters and pull-through maneuvers are unreliable techniques to measure anorectal function because they inadvertently increase anal pressure by activating the anal-external sphincter continence reflex.

P066

Long-term bowel dysfunction after surgery for colorectal cancer

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Aim: The aim of this study was to evaluate the long-term prevalence of bowel dysfunction in patients who underwent surgery for colorectal cancer.
Method: In this prospective cross-sectional study, 324 patients who underwent right hemicolectomy, sigmoid colon resection or low anterior resection (LAR) for colorectal cancer between 2009 and 2016 were included. Functional constipation and fecal incontinence were assessed based on the Rome IV criteria. In patients who underwent LAR, low anterior resection syndrome (LARS) score was also obtained.
Results: Median (range) time to follow-up was 52 (22–110) months. There was no significant difference in follow-up between the three different types of surgery. Minor and major LARS were present in 23.4% and 31.4% of patients who

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underwent LAR. Fecal incontinence was found in 24.8% of LAR patients, which was significantly higher compared to sigmoid colon resection and right hemicolectomy (7.1%, and 17.9%, $P = 0.033$ respectively). Functional constipation was also more often present in LAR patients, (29.9% *vs* 19.0% and 13.8%, $P = 0.004$, respectively).
Conclusion: This prospective study showed that bowel dysfunction after surgery for colorectal cancer is still prevalent in the long run. Fecal incontinence and functional constipation are highly prevalent, especially among patients who underwent LAR.

P067
Examination under anaesthetic is an important diagnostic tool for assessment of high grade internal rectal prolapse

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Aim: High grade internal rectal prolapse (HGIP) can cause a range of defaecatory symptoms including obstructive defaecation and faecal incontinence. If diagnosed appropriately it can be surgically treated, with good results. Historically defaecography has been considered the gold standard for assessment of HGIP, despite studies showing high numbers of both false negatives and false positives.
Method: Authors undertook a retrospective review of patients seen in a dedicated pelvic floor clinic from May 2014 to July 2017 to identify patients who had had an examination of rectum under anaesthesia (EUA) for symptoms and clinical examination consistent with HGIP.
Results: In the study period 852 patients were seen in the clinic. There were 22 patients identified who had an EUA for assessment of prolapse. Of these patients, 19 (86.4%) were diagnosed with HGIP on EUA and 3 were found to have low grade or no internal rectal prolapse. Of the 19 patients who were found to have HGIP on EUA, 14 had undergone defaecating proctography, and none of the proctograms had identified HGIP.
Conclusion: If symptoms and clinical examination are suggestive of HGIP, an examination under anaesthesia should be considered for diagnosis, particularly if a proctogram is inconclusive.

P068
Dietetics is integral to the conservative management of functional defaecatory disorders

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Aim: Functional defaecatory disorders are common and the cause is often multifactorial. The aim was to review the outcomes of patients with defaecatory dysfunction seen in a dietetics clinic.
Method: Patients referred to a busy colorectal department from January 2016 to December 2017 were identified as potentially having a functional defaecatory disorder. They were assessed and treated by a specialist dietician prior to being seen by a colorectal surgeon. Patients completed the Diet Quality Tool Questionnaire; multiple validated tools for assessment of faecal incontinence, constipation, obstructive defaecation and quality of life (QOL) prior to, and during treatment.
Results: 126 patients were identified; 44% presented with constipation/ obstructive defaecation; 12% with diarrhoea; 26% with faecal incontinence; 18% with mixed symptoms. Initial treatment was diet modification and increasing dietary fibre intake. Subsequent treatment included fibre supplementation, FODMAP/elimination diets, and probiotics. The 25% of patients had successful resolution of symptoms prior to surgical assessment. 6% of patients did not improve, 17% were lost to follow up and 52% are continuing treatment. QOL was improved significantly. Patient satisfaction levels were high.
Conclusion: A multidisciplinary approach is important in patients with defaecatory dysfunction. A quarter of patients had complete resolution of symptoms following treatment by a specialist dietician.

P069
A feasibility study of dynamic MRI enema pouchography – normal variation in asymptomatic participants

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Aim: Fluoroscopic pouchography is often performed for the investigation of anastomotic leaks and pouch dysfunction. This investigation has poor positive and negative predictive value. Dynamic MRI enema pouchography potentially offers greater detail and diagnostic sensitivity. We present initial results from a feasibility study in normal participants.
Method: Participants with normal pouches (defined by history, Brandsborg functional score <1.5, blood and stool biochemistry) were invited to participate. Plain axial and saggital series were performed before 400 ml 1% Gadolinium contrast solution was introduced via 22 Fch Foley catheter. During filling a single saggital dynamic slice was obtained, before plain post-fill series.
Results: Twelve participants (nine male) were enrolled – median age 52 (30–71), median 22 years since pouch surgery (6–28). The experience was well tolerated; mean Likert scores of 4.67/5, 4.42/5 and 4.75/5 for overall experience, comfort and dignity respectively. Median maximal distended volume estimate was 269 mls (187–806), median expansion ratio was 2.8 (1.2–17.1). Median S3/S4 pre-sacral widening was 10 mm (0–38) containing mesentery. Median distances from anastomosis to top of puborectalis and superficial external sphincter were 14 mm (0–30) and 58 mm (42–70).
Conclusion: Our initial findings from dynamic MRI enema pouchography show variation in 'normal' pouches. We propose reference values to assist future reporting.

P070
MRI defaecating pouchography – a feasibility study in asymptomatic participants

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Aim: Fluoroscopic defaecating pouchography is commonly used to investigate pouch dysfunction. MRI defaecating pouchography may offer greater sensitivity than fluoroscopy, but no normal standard is defined. We present the initial results from a feasibility study of MRI defaecating pouchography.
Method: Participants with normal pouches (defined by history, Brandsborg functional score <1.5, blood and stool biochemistry) were enrolled. After plain and dynamic enema series, 60 mls of water based jelly was introduced via a 22 Fch Foley catheter. Participants emptied their pouches during 60 s dynamic series. Reporting was according to ESGAR Pelvic Floor Working Group recommendations.
Results: Eleven participants (eight male) were enrolled: median age 53 (30–71), median 23 years since pouch surgery (6–28). The experience was well tolerated; average Likert scores of 4.64/5, 4.36/5 and 4.73/5 for overall experience, comfort and dignity. Four participants completely evacuated their pouches, three incompletely with four unable to pass jelly. Anismus was present in six. Median times to first passage and complete emptying were 11 (4–250) and 52 (31–170) seconds respectively. Mean posterior compartment descent was 22 mm (SD 8.2 mm).
Conclusion: Our initial findings in MRI defaecating pouchography show variation in 'normal' pouches. The technique is well tolerated. We propose reference values to assist future reporting.

P071
Biofeedback is cost-effective in treating functional constipation and obstructed defecation syndrome

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Aim: To examine if biofeedback (BFB) is effective in improving function and quality-of-life in an Asian population.
Method: 269 patients attending BFB for constipation in a centre for gastrointestinal functional-disorders in Singapore between 2012 and 2016 were examined. Patients with slow-transit were excluded. Treatment comprised 3 sessions over 10 weeks. Wexner constipation score and Eypasch-GIQL score were used to evaluate outcome. Healthcare utilization over 2 years following treatment was examined.
Results: The study included 105 males (39%) and 164 females (61%). Post-treatment, Wexner scores were significantly improved in 90% of patients. The overall GIQL score improved in 95% of patients, with symptoms, emotion, and function showing the greatest difference. Social function and medication scores did not change significantly. These improvements were also reflected in the overall mean scores for each domain, which did not reach significance for social function and medication. Healthcare utilization was examined for this cohort of patients tracking national electronic records for admissions and attendances for abdominal pain or constipation as a diagnosis. This did not show significant improvement.
Conclusion: Significant improvement in objective constipation-scores and quality-of-life were noted post-BFB. Effect on long-term healthcare utilization remains uncertain.

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P072
Effectiveness of biofeedback therapy in improving symptoms and quality of life of patients with chronic constipation

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Aim: Chronic constipation is a common condition managed by colorectal surgeons. We aimed to understand the effectiveness of biofeedback therapy (BFT) in symptom improvement and quality of life (QOL).
Method: 269 patients were recruited from Singapore General Hospital pelvic floor disorder clinic between 2012 and 2016. Wexner constipation score and Eypasch quality of life score were used. The data collected were analysed using descriptive statistics.
Results: The study included 105 males (39%) and 164 females (61%). The mean pre-BFT Wexner constipation was 11.4 (± 4.1) and post-BFT was 8.8 (± 4.4), T-value 11.0 ($P < 0.05$). The pre-BFT Eypasch QOL was 101.0 (± 21.2) and post-BFT Eypasch QOL was 112.7 (21.8), T-value 11.1 ($P < 0.05$). The mean pre-BFT symptom score of 56.2 (±10.5) vs post-BFT symptom score of 61.5 (±10.4), pre-BFT emotion score of 11.4 (±4.7) vs post-BFT symptom score of 13.9 (±4.7), pre-BFT function score of 18.5 (±6.7) vs post-BFT function score of 21.2 (±6.4), pre-BFT social score of 12.4 (±7.3) vs post-BFT social score of 12.9 (±3.1), and pre-BFT medicine score of 2.8 (±1.3) vs post-BFT medicine score of 3.3 (±1.4).
Conclusion: BFT improves both symptoms and quality of life of patients with chronic constipation.

P073
Quality of life in women after laparoscopic ventral rectopexy with Permacol-biomesh, for rectal prolapse

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Aim: To assess quality of life in women after laparoscopic ventral rectopexy with Permacol-biomesh, for rectal prolapse.
Method: 32 women (aged 20–83 years, mean 54.5 years) with rectal prolapse were treated with LVR between 2009–2015. The IQ-OLA SF36 (Swedish version 1.0) was recorded pre- and post-operatively, mean follow-up of 1.5 years. Four (out of 11) questions were selected as relevant for overall assessment: subjective perception of general health, the ability to perform moderate to heavy physical work, and the ability to perform standard tasks at work and/or at home.
Results: 40% of patients had improved general health, 15% worse and 45% (14/30) unchanged. 45% had improved ability to perform heavy physical actions, 5% worse and 50% (15/29) unchanged. Regarding moderate physical actions, 30% were improved, 10% worse, whereas a larger proportion of patients (60%, 18/29) were unchanged. To perform standard physical tasks 40% of patients were improved, 15% worse and 45% (14/30) unchanged.
Conclusion: The majority of female patients (>85%) undergoing LVR do not report any decrease in health or ability to perform physical tasks. LVR seems a safe treatment option with regards to quality of life and with restoration of ability to perform physical tasks and overall health after surgery.

P074
Are there patient or operative factors associated with septic complication following Ileocolonic resection for Crohn's disease? – Single centre contemporaneous cohort

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Aim: Septic postoperative complications, i.e. anastomotic leak / intra-abdominal sepsis develop more frequently in Crohn's Disease (CD) than in other intestinal diseases. This study aims to report on early postoperative outcomes of a contemporary case series
Method: Retrospective review of clinical records of patients with CD (confirmed on histopathology), who underwent an ileocolonic resection as a one-stage or two-stage procedure, were reviewed. Primary endpoint was the development of intra-abdominal septic complications within 30-days post-operatively.
Results: 190 patients undergoing 201 ileocolonic procedures between 2010 and 2017 were included. 51% were female and mean age at operation was 38. Majority (73%) of patients had no prior biologic treatment and 42% had no previous surgical resections. There were no mortalities within 30 days postoperatively. Overall 23% had surgical site infections and specifically, 9% had intra-abdominal abscess and 3% had anastomostic leaks. None of the patient factors were strongly associated with intra-abdominal sepsis. There was a trend towards smokers having an increased risk of infection, but this result was not statistically significant.
Conclusion: There were no significant patient/operative factors associated with early postoperative intrabdominal septic complications. Unsurprisingly, age at CD-diagnosis / age at time of surgery were found to be positively associated with early 'non-surgical' infection (e.g. pneumonia, bacteraemia).

P075
A comparison of short-term outcomes for patients undergoing elective laparoscopic right hemicolectomy for Crohn's disease versus colon cancer within an enhanced recovery programme

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Aim: To compare outcomes following elective laparoscopic right-hemicolectomy for Crohn's disease (CD) versus colon cancer (CRC) within an enhanced recovery programme (ERP).
Method: Patients undergoing elective laparoscopic right-hemicolectomy for CD or CRC within an ERP between 2015–2017 were included. Outcome measures included number of postoperative complications, length of stay and 30-day readmission rates.
Results: 57 patients were included, 19 with CD and 38 with CRC. CD patients were younger (median age 43[IQR26–58]) less obese (BMI<30 in 90%) and had less co-morbidities (median Charlson Co-morbidity index (CCI) 0[0–1]) compared to CRC patients (median age 69[IQR62–76]), (BMI<30 in 71%) and median CCI 6 [4–7]. 10 CD patients experienced 17 minor (Grade I/IIClavien-Dindo) complications, with 20 CRC patients experiencing 32 minor (Grade I/II) complications. Ileus was the commonest complication, occurring in 8 (47%) CD patients and 7 (22%) CRC patients. Median post-operative stay was 5 days [IQR4–7] for CD and 4 days[IQR4–7] for CRC patients. Two (10.5%) CD patients were readmitted versus 3 (7.9%) for CRC patients.
Conclusion: Despite being younger and less co-morbid, elective laparoscopic right-hemicolectomy in the CD group was not associated with a reduction in early complications, length of stay or readmission rates.

P076
Factors associated with requirement of surgery in patients with Crohn's disease

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Aim: While surgery is indicated for complicated Crohn's disease (CD), medical therapy, especially the biologics, are used to alter the natural history of disease. This study aims to identify possible factors for surgical requirement in CD.
Method: 283 CD patients who were followed up at a tertiary inflammatory bowel disease center were included. Characteristics of patients undergoing surgery (resection or strictureplasty) were compared with those who received only medical treatment.
Results: Forty-one (15%) patients had surgery. Age (37 vs 34 years, $P = 0.93$), body mass index (23 vs 25 kg/m^2, $P = 0.35$), family history of CD (12 vs 6%, $P = 0.13$), smoking status (44 vs 52%, $P = 0.35$), history of perianal disease (20 vs 21%, $P = 0.87$), disease location ($P = 0.14$), steroid (44 vs 54%, $P = 0.24$), methotrexate (2 vs 3%, $P = 0.99$) and mesalamine use (51 vs 49%, $P = 0.83$) were similar between the surgical and non-surgical groups. Rate of female gender (63 vs 46%, $P = 0.04$), biologics (27 vs 14%, $P = 0.03$), and azathioprine use (66 vs 42%, $P = 0.005$) were higher in patients undergoing surgery. In multivariate analysis, azathioprine use was independently associated with surgery ($P = 0.004$).
Conclusion: While female CD patients are prone to surgical treatment, azathioprine seems to be the medication of choice to salvage patients from surgery.

P077
Pouch resection – how to avoid and when to decide

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Aim: The aim of the study was analysis of risk factors for pouch failure in patients after restorative proctocolectomy and ileal pouch-anal anastomosis (IPAA) and defining the best strategy for the control and follow-up of the patients.
Method: We analyzed the clinical course of IPAA patients, who had the J-pouch excision 2–30 years ago. The analysis was conducted for ulcerative colitis and FAP patients.
Results: 408 patients after IPAA were analyzed (218 FAP; 190 UC), In this group 19 pouches (5%) were removed (10 FAP, 9 UC). The main reason was malignancy in FAP group, the chronic pouchitis with or without perianal fistulas in UC group. The mean time of from IPAA to pouch excision was 12 years. In patients with pouch excision 14 patients were in regular follow-up. In 7 FAP patients advanced

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neoplastic lesions were found despite regular endoscopic monitoring of the biopsy reservoir.
Conclusion: IPAA is effective method in surgery for FAP and UC. In some patients, progressive pouch lesions are observed and in long term follow-up can lead to pouch excision. Individualization of the follow-up strategy is important especially in high risk group of patients (polyps, chronic dysplasia, perianal fistulae).

P078
Effect of anti TNFα on postoperative outcomes after ileocolic resection for Crohn disease

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Aim: The aim of this study was to compare the postoperative outcome after ileocolic resection for Crohn disease between group of patients treated with anti-TNFα and those treated without anti-TNFα prior to surgery.
Method: This was a retrospective study conducted from 1999 to 2017, including all patients who underwent a first ileocolic resection for Crohn's disease. The impact of preoperative characteristics, intraoperative data and postoperative outcomes were evaluated.
Results: 169 patients were analyzed. Patients who underwent surgery within 3 months of receiving anti TNFα, 37.8% of patients were treated with anti-TNFα and 15.4% received corticosteroid and anti-TNFα. The surgery was performed by laparoscopy in 69.2% of cases with 16% conversion rates to open surgery. The overall postoperative morbidity was 44.4%. There were 20.1% of surgical site infection and 14.2% of major complication (Grade III – IV). 52.9% of patients with surgical site infection were treated with anti-TNFα and 29.4% in with corticosteroid versus 34.1% and 11.9% in the other group ($P = 0.0495$ and $P = 0.0168$). anti-TNFα were also associated with more major postoperative complication (66.7% vs 33.1% $P = 0.0027$).
Conclusion: Anti-TNFα use within 3 months prior to surgery is a risk factor of surgical site infection and major complications.

P079
Resection for primary ileocecal Crohn's disease: is temporary ileostomy associated with less surgical recurrence

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Aim: Comparing surgical recurrence after primary ileocecal resection (ICR) with immediate restoration of gastro-intestinal continuity (GIC) to a 2-stage procedure with temporary ileostomy, usually performed in patient with more severe / recurrent disease.
Method: All patients who underwent primary ICR for Crohn's disease (CD) between 2000–2012 in three tertiary units were identified from a prospective database, applying strict inclusion criteria. Time zero was establishment of GIC, and surgical recurrence the primary endpoint.
Results: ICR with primary anastomosis (group 1) was performed in 346 patients and with temporary ileostomy (group 2) in 88. Median follow-up time was 102.4 months (IQR 74.7–134.9), median time between ICR and closure of ileostomy 8.9 months (IQR 5.3–12.2). Fifty-five patients in group 1 had a recurrence requiring surgery, compared to 12 in group 2 ($P = 0.98$). Reinterventions for recurrent CD in active smokers were observed in 11/30 (36.7%) patients in group 1 and 1/15 (6.7%) in group 2 ($P = 0.17$). Corresponding numbers in patients with penetrating CD (Montreal B3) were 20/88 (22.7%) in group 1 and 4/39 (10.3%) in group 2 ($P = 0.11$).
Conclusion: ICR with temporary ileostomy reduces the long-term surgical recurrence in active smokers and patients with penetrating CD.

P080
An audit of processes and outcome for emergency colectomy for colitis in England and Wales: an analysis of data from the National Emergency Laparotomy Audit

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Aim: To describe outcome and use of laparoscopy in England and Wales for colitis patients undergoing emergency colectomy.
Method: National Emergency Laparotomy Audit (NELA) is a national audit including patients undergoing emergency laparotomy and laparoscopic resectional procedures. Adult patients under 65 years old, who underwent emergency subtotal colectomy or panproctocolectomy for colitis between 2011 and 2014 were included.
Results: Overall 1204 patients were included. Though most patients underwent colectomy within 5 days of admission [37% (440/1204)], 32% (383/1204) of patients were admitted for over 10 days prior to surgery. Colorectal surgeons were present at operation in 72% (869/1204) of cases. Consultant surgeons attended in 94% (1137/1204) of procedures. Laparoscopy was attempted in 32% (390/1204) of operations with wide institutional variation in its use (0–100% cases). The 30-day mortality was 2.9% (35/1204). On regression analysis, age>55 [odds ratio (OR) 3.59 (1.05–12.21), $P = 0.041$], female gender [OR 2.88 (1.27–6.52), $P = 0.011$], ASA of 5 [37.43 (2.72–514.52), $P = 0.007$] were associated with increased mortality.
Conclusion: There is a consultant driven service largely delivered by specialist colorectal surgeons. Laparoscopy rates were high though there was wide variation in use across institutions. Preoperative delays remain concerning. Further work is necessary to determine the underlying reasons for delays.

P081
Ileal pouch-anal anastomosis for patients with ulcerative colitis: functional results, quality of life and morbidity in follow-up of more than 10 years

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Aim: To evaluate the preservation, morbidity, functional results, quality of life and personal satisfaction associated to ileal pouch-anal anastomosis (IPAA) in patients with ulcerative colitis (UC) after more than 10 years of follow up.
Method: Cohort study. We identified all consecutive patients that underwent IPAA for UC between 1984–2007 at our institution. Demographic, surgical and morbidity variables were recorded. After excluding patients without a functioning IPAA, we conducted an e-mail survey including Öresland's functional scale, quality of life (QOL) by Cleveland and degree of satisfaction with surgery. Descriptive statistics of the series, Kaplan-Meier curves and Cox regression to evaluate IPAA preservation and identify associated variables. Significance with $P < 0.05$.
Results: We identified 116 patients. 67 (57.8%) were female and 35 ± 10.3 years at intervention. 85 (73.2%) had a 3-stage procedure. 112 (96.5%) by a J pouch. Early and late morbidity were found in 16.4 and 56.9% of patients. At 20 years, 93.1% had a functional IPAA. 55 patients answered the survey. The median of the functional score was 6 (1–15), and global QOL 0.8 (0.23–1.0). 92.7% were satisfied with the procedure.
Conclusion: The functional results are acceptable in the long term, maintaining a good quality of life.

P082
Review of surgical referral pathway for patients with acute severe colitis

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Aim: To audit the pathway of patients admitted with acute severe colitis as per existing NICE guidelines.
Method: Retrospective data collection of patients diagnosed with acute severe colitis, who underwent a subtotal colectomy, over a two-year period. Data regarding the patients' diagnosis, duration of medical therapy, surgical management and post-operative outcomes were analysed. Our cohort was split into two groups, those who received medical therapy for <7 days and >7 days. Post-operative outcomes were compared between them.
Results: 14 patients were identified. There was an increased risk (RR = 9 [95% CI 8.511 – 1.133]) of developing post-operative complications in patients with a prolonged course of medical therapy with every second patient susceptible in the

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exposed group (NNT = 2). Patients referred early had a reduced risk of post-operative complications with an OR of 0.0519 [CI 0.0021 – 1.2536 ($P = 0.0686$)].
Conclusion: Prolonged medical therapy in our cohort demonstrated an increased risk of post-operative complications. We suggest the early surgical referral of patients admitted with acute severe colitis and the introduction of a proforma to guide management in the view of improving patient outcomes.

P083
Risk factors for early postoperative complications and length of hospital stay in ileocecal resection and right hemicolectomy for Crohn's disease: A single center experience

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Aim: To determine risk factors for early postoperative complications after ileocolonic resection in a single-center cohort of patients with Crohn's disease (CD).
Method: A retrospective analysis of the prospectively maintained surgical database for patients with CD at our institution was performed. All consecutive patients operated on between January 2010 and December 2016 were included.
Results: A total of 305 patients were included. Median length of hospital stay was 7 days. Major postoperative complications were observed in 9.5% of patients. Anastomotic leak was observed in 5 patients. The rate of local septic complications was 4.3%. In multivariable analysis, independent risk factors for major postoperative complications were bowel perforation, elevated preoperative leucocyte levels, and low levels of preoperative albumin. The cut-off value for albumin was 32.5 g/L.
Conclusion: In this large cohort of patients surgically treated for CD in a specialist referral center, 9.5% of the patients developed major postoperative complications. Preoperative albumin levels >32.5 g/L significantly reduced the risk for postoperative complications. In a multidisciplinary approach with an adequate preoperative management, surgery can be performed with a low rate of major complications and a very low rate of anastomotic leakage.

P084
Risk factors for early endoscopic recurrence after ileocecal resection in Crohn's disease

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Aim: The purpose is to determine the incidence of endoscopic recurrence (ER) in the first year after ileocecal resection with end-to-end anastomosis, as well as to assess possible risk factors.
Method: This is a retrospective study of 138 patients who underwent ileocecal resection with end-to-end anastomosis in the period between 2010 and 2016. Patients who underwent ileo-colonoscopy during first postoperative year were included. The rate of ER was recorded, and possible predictive factors were evaluated.
Results: Ninety-four patients (68%), with mean age of 37.9 ± 12.5 years underwent ileo-colonoscopy during the first postoperative year. Thirty-four (36.2%) had ER (Rutgeerts' score ≥ i2). Univariate analysis showed that smoking (63.2% vs 17.9%, $P < 0.0001$), age at diagnosis >40 years (<17: 16.7%, 17–40: 36.9%, >40: 63.6%, $P = 0.038$), anastomotic leakage (75.0% vs 32.6, $P = 0.024$) and non-use of azathioprine pre-operatively (45.7% *vs* 8.3%, $P = 0.001$) were related to significantly higher rates of ER. Multivariate analysis identified smoking (OR 5.92; 95% CI 1.98–17.75; $P = 0.001$) and non-use of azathioprine (OR 9.69; 95% CI 1.71–54.90; $P = 0.01$) as independent risk factors
Conclusion: Our study recognized a beneficial effect of preoperative administration of azathioprine, as well as the aggravating role of smoking.

P085
Frequency of endoscopic surveillance of the defunctioned rectum/colon in Crohn's disease

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Aim: Patients with IBD have an increased risk of colorectal malignancy. Surveillance guidelines of the intact colon are well established, although no guidelines exist for surveillance of the defunctioned rectum/colon. We aimed to audit the quality of surveillance of the defunctioned rectum/colon.
Method: All Crohn's patients with a defunctioning stoma with 'out of circuit' rectum/colon for over 1 year were identified from the colorectal, stoma therapy and pathology databases. Demographics, distribution of IBD, family history of colorectal malignancy, and history of primary sclerosing cholangitis (PSC) were recorded. Undertaking flexible sigmoidoscopy or colonoscopy of the defunctioned recto-colon was recorded. Patients were considered high risk group if one/more risk factors were identified (family history of colorectal malignancy/PSC/disease over 10 years).
Results: 100 patients were identified from which 73 were in the high-risk group. Overall, 54% had some endoscopic surveillance, 51% from the high risk and 63% from the low risk group.
Conclusion: Endoscopic surveillance of the defunctioned rectum/colon occurred in just over half (54%) of the patients with IBD. Surveillance was inconsistent with high risk patients receiving less assessment than low risk patients. We would recommend regular endoscopic surveillance of the defunctioned rectum/colon in IBD patients especially in high risk group.

P086
Pouch failures following restorative proctocolectomy in ulcerative colitis

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Aim: We explored the pouch failure rate and the risk factors for the pouch failure after restorative proctocolectomy (RPC) in ulcerative colitis (UC).
Method: Review of the medical records of all patients with UC over 18 years of age undergoing RPC with subsequent pouch failure in 1985–2016.
Results: The study comprised 491 RPC patients; 209 women and 282 men. Fifty (10.2%) pouch failures were recorded: 9 women, and 41 men. Median time from the operation to the failure was 5.4 years (range 0- 26). After RPC, 15 (3.1%) of the patients with the initial diagnosis of UC were showed to suffer from Crohn's disease; 7 (47%) of them had subsequent pouch failure. There were significantly more early leakages 15 (30%) vs 32 (7.3%) $P = 0.000$, fistula/abscess 21 (43%) vs 34 (8%) $P < 0.001$ and pouchitis 30 (69.8%) *vs* 164 (40%) $P < 0.001$ with failure patients than with those with functioning pouch, respectively.
Conclusion: Men had a higher risk of pouch failure than women. Crohn′s disease diagnosis after RPC increases the risk for pouch failure substantially. Severe pouch complications after RPC and infectious problems during follow up increased the risk for pouch failure.

P087
Severe anemia increases the risk of postoperative morbidity in patients undergoing surgery for colonic Crohn's disease

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Aim: The present study analyzes the postoperative morbidity in patients undergoing surgery for colonic Crohn's disease.
Method: Patients undergoing colorectal resections for colonic Crohn's disease at 7 surgical units were included. Exclusion criteria were: proctectomy for perianal disease and ileocolic resections. Abdominal colectomy and proctocolectomy were defined as extended resections; all other surgeries were classified as segmental resections. Postoperative intraabdominal septic complications (IASC) were: anastomotic leaks, intestinal fistula, peritonitis and abscess. Preoperative hemoglobin level of <10 g/dl was defined as severe anemia.
Results: 211 patients were included (segmental resections $n = 100$; extended resections $n = 111$). Segmental resections were performed significantly more frequently for stricturing or penetrating disease (96% *vs* 61%, $P < 0.001$) and were completed by an anastomosis more often than extended resections (72% *vs* 40%, $P < 0.001$). Preoperative severe anemia was noted in 29 patients (15%); its occurrence correlated significantly with emergent colectomy ($P = 0.007$). The postoperative IASC rate was 22%. By multivariate analysis, segmental resections (Hazard ratio 2.3; 95% CI: 1.0–5.5. $P = 0.061$), an anastomosis (HR 3.8; 95% CI: 1.4–10.3; $P = 0.009$) and severe anemia (HR 4.4; 95% CI: 1.5–12.9; $P = 0.006$) were associated with an increased IASC risk.
Conclusion: Preoperative severe anemia is a strong predictor of postoperative morbidity.

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P088

STAT1 signal pathway is associated with inflammatory bowel disease

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Aim: To clarify a role of STAT1 signal pathway in an onset of inflammatory bowel disease.
Method: In this study, we established dextran sulfate sodium (DSS)-induced colitis model using wild-type (WT) C57BL/6 mice and STAT1-deficient mice. We evaluated body weight of mice, histological score of the colon, inflammatory immune cells infiltrating in the diseased tissues, and IL-6 and TNF-α gene expression levels of immune cells isolated from the colon tissues.
Results: Disease states such as body weight loss and histological score of WT mice were significantly severe compared to those of STAT1-deficient mice. Relative gene expression levels of inflammatory cytokines such as IL-6 and TNF-α in $CD11b^+$ macrophages isolated from colon tissues of STAT1-deficient mice were significantly reduced compared to those of WT mice, whereas infiltration of immune cells in colon tissues was not different between STAT1-deficient mice and WT mice.
Conclusion: From these data, we speculate that STAT1 signal pathway in inflammatory macrophages is involved in an onset of inflammatory bowel disease.

P089

Laparoscopic surgery for inflammatory bowel disease – 10 years experience

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Aim: 20% of patients with Crohn's disease (CD) and 80% patients with ulcerative colitis (UC) will require an operation during their life. Minimally invasive surgery should be preferred. Advantages of laparoscopic approach include reduction of morbidity, faster recovery time and reduction of analgesics. Long-term outcomes include fewer adhesions, fewer incisional hernias, and better cosmesis.
Method: Patients without any previous gut resection with inflammatory bowel disease (IBD) were indicated for the laparoscopy. Patients with a CD with the tight stenosis in the distal ileum and/or ileo-colon or various colon stenosis, patients with UC with ineffective medical therapy, steroid dependence or dysplasia underwent the surgery.
Results: From January 2009 to April 2018 we performed 230 ileocolic resections, 62 hemicolectomies, 69 subtotal colectomies and 29 proctocolectomies with ileoanal pouch anastomosis either totally laparoscopically or laparoscopically assisted. Restoration of gas movement was 4.2 days in average and restoration of stool was 5.0 days on average. Length of hospital stay was 5.2 days. Complications occurred in 19 patients (4.9%).
Conclusion: Laparoscopic surgery for IBD is becoming a gold standard. It is safe and feasible in well-selected patients thanks to short- and long-term outcomes. Supported by project MO1012.

P090

Donorscreening for faecal microbiota transplantation

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Aim: To evaluate the results of the screening procedures for potential faecal donors to be used in faecal transplantation (FMT) for Ulcerative Colitis.
Method: Healthy volunteers were evaluated by screening including: 1) a questionnaire regarding general health, risk factors and medical history, 2) serum analysis (haematology, inflammation, liver and kidney function, HIV, Hepatitis, Cytomegalovirus, Epstein Barr virus and HbA1c) and 3) faeces analysis (calprotectin, *Clostridium difficile* (PCR), enteric pathogenic bacteria and antibiotic-resistant bacteria, parasites, cysts, and viruses).
Results: To date, 15 healthy individuals have been screened as potential faecal donors. One person was excluded by the questionnaire (due to travel to South America within the last 6 months), passing 14 persons to serum and faecal screening. All donors passed the serum screening. However, faecal screening excluded seven persons, due to ESBL-producing *E. coli* ($n = 3$), *Entamoeba Coli* cysts ($n = 2$), multidrug-resistant *Pseudomonas* (Non-aeruginosa) ($n = 1$) and Shiga Toxin producing *E. coli* ($n = 1$). None of the findings resulted in antibiotic treatment.
Conclusion: Preliminary results indicate that only 47% of healthy individuals are eligible as faecal donors for FMT, primarily due to findings of potential pathogens in faeces. None had symptoms of enteric disease, underlining the importance of thorough screening before faecal donation.

P091

Sigmoidostomy or Hartmann's procedure after laparoscopic subtotal colectomy for inflammatory bowel disease? A case-matched study in 170 consecutive patients from 6 European centres

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Aim: To evaluate 2 techniques of laparoscopic subtotal colectomy (LSTC) for inflammatory bowel disease (IBD).
Method: Patients who underwent LSTC were divided into 2 groups: sigmoidostomy in the right iliac fossa with ileostomy (Gr.S) versus Hartmann's procedure (Gr.H). Matching was performed according to gender, IBD diagnosis and preoperative medical treatment.
Results: From 2005 to 2015, 314 patients underwent LSTC. After matching, 170 patients were divided into Gr.S ($n = 85$) and H ($n = 85$). Stoma-related complications occurred more frequently in Gr.S (12%) than H (3.5%, $P = 0.04$). Major morbidity (10 vs 5%, $P = 0.3$), unplanned reoperation (9 vs 5%, $P = 0.2$) and mean length of stay (10 ± 7 vs 12 ± 9, $P = 0.1$) were similar. Completion proctectomy with ileal pouch-anal anastomosis (IPAA) was more frequently performed laparoscopically in Gr.S than H (100 vs 61%, $P < 0.0001$). For both LSTC and IPAA, cumulative conversion rate was lower in Gr.S (1%) than H (10%, $P = 0.015$), and cumulative stoma related complications rate was higher in Gr.S than H (20 vs 5%, $P = 0.002$). Long-term results (intestinal continuity, hernia, small bowel obstruction) were similar between groups.
Conclusion: LSTC with sigmoidostomy facilitate second step of laparoscopic IPAA and reduces conversion rate, but exposes to more stoma related complications than Hartman's procedure.

P092

Laparoscopic subtotal colectomy with double-end ileo-sigmoidostomy in right iliac fossa facilitate second step of ileorectal or ileal pouch-anal anastomosis: a bicentric study in 213 consecutive patients with inflammatory bowel disease

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Aim: To report our experience of laparoscopic subtotal colectomy (STC) with double-end ileo-sigmoidostomy (DEIS) in the right iliac fossa for inflammatory bowel disease (IBD).
Method: All consecutive patients undergoing laparoscopic STC and DEIS in the right iliac fossa for IBD in 2 expert centres in Europe were included.
Results: 213 patients (124 males, 39 ± 15 years) underwent laparoscopic STC and DEIS. Conversion into laparotomy was required in 9 (4%) and reoperation in 13 patients (6%) for stoma-related complications ($n = 6$), peritonitis ($n = 3$), hernia ($n = 3$), and small bowel obstruction ($n = 1$). One patient died (0.4%). Mean length of stay was 10 ± 6 days. Second stage was performed in 199 patients (94%), after 4.7 ± 6 months, including ileorectal anastomosis (IRA, $n = 50$), ileal pouch-anal anastomosis (IPAA, $n = 139$) and abdominoperineal excision with end ileostomy (APE)($n = 10$). IRA was performed by elective open incision on the right iliac fossa in 68% of cases. IPAA and APE were successfully performed by laparoscopy in 96% and 80% of cases.
Conclusion: Laparoscopic STC and double-end ileosigmoidostomy in right iliac fossa is safe and facilitate the second stage for intestinal continuity restoration by an elective incision in 68% of IRA and by laparoscopy in 96% of IPAA.

P093

Presentations and aetiologies of acute colitis: a prospective cohort study

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Aim: Our aims were to determine the aetiologies of acute colitis and to identify predicting factors for patients requiring endoscopy.

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Method: All patients with CT-confirmed symptomatic colitis were included. Stools were analysed using FilmArray Gastrointestinal PCR (Biomérieux) and faecal calprotectin was measured. Patients with negative PCR underwent colonoscopy.
Results: Seventy-seven patients were included from 11.2016 to 11.2017. FilmArray was positive in 45 patients (58.4%). Twenty-four of them (53.3%) were tested positive for Campylobacter spp, 13 (28.9%) for E. coli pathovars, 9 (20%) for Clostridium difficile, 4 (8.9%) for Salmonella spp, 3 (6.7%) for Shigella spp, 1 (2.2%) for Plesiomonas shigelloides and 3 (6.7%) for viruses. Thirty-six patients had negative routine PCR assay and underwent colonoscopy within 5.4 ± 2.3 days. Colonoscopy revealed inflammatory chronic bowel disease (ICBD) in 3 patients and ischemic colitis in 6. Colonoscopy was normal or showed eosinophilic infiltration in 27 patients (35%). No adenocarcinoma was found. Calprotectin >10'000 mg/g was identified as a strong predictor of ICBD (OR 67, 95%CI: 4–1082).
Conclusion: Aetiologies of colitis were infectious in 60% of patients, ischaemic in 8%, ICBD in 4% and undetermined in 35%. A calprotectin value >10'000 mg/g allows targeting patients requiring endoscopy.

P094

Delta albumin is a better prognostic marker for complications following laparoscopic intestinal resection for Crohn's disease than albumin alone

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Aim: Little is known about the perioperative dynamic of albumin and its effect on surgical outcome in Crohn's disease. Thus, we aimed to assess postoperative changes of albumin levels and their predictive role for complications after laparoscopic surgery.
Method: We identified 182 patients who underwent laparoscopic intestinal resection for symptomatic Crohn's disease between 2000 and 2014. Pre- and postoperative serum albumin levels were recorded retrospectively and proportional postoperative reduction (delta (Δ) albumin) was calculated. Univariate and multivariate analysis describing an eventful postoperative course were conducted.
Results: Complications were found in 22.5% ($n = 41$), 6% ($n = 11$) developed major complications defined as Clavien Dindo III-V and 16.5% ($n = 30$) had minor complications (Clavien Dindo I-II). Delta albumin was found to be significantly higher in patients with complications after surgery ($P = 0.03$). Notably, neither preoperative ($P = 0.28$) nor postoperative albumin levels ($P = 0.41$) correlated with an eventful course. Based on a cut-off of 24.27%, Δ albumin remained an independent factor for complications ($P = 0.04$, OR 2.232) next to conversion rate ($P < 0.001$, OR 5.577) and the presence of an inflammatory mass ($P = 0.003$, OR 0.280).
Conclusion: Δ albumin is a better prognostic marker for an eventful postoperative course after laparoscopic surgery for Crohn's disease in comparison to albumin alone.

P095

Use and success of *in vitro* fertilization in women following restorative proctocolectomy and ileal pouch-anal anastomosis. A nationwide 14-year cohort study

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Aim: The frequency and success of (fertilization in females with restorative proctocolectomy (RPC) for ulcerative colitis (UC) is scarcely studied and therefore analysed in the present study.
Method: All Danish females with UC ($n = 12.816$) and RPC ($n = 426$) between 1997–2010 were identified. Data from the *in vitro* fertilization registry and medical birth registry was cross linked and age adjusted hazard ratio (HR) of *in vitro* fertilization treatment and age adjusted odds ratio (OR) for obtaining a live birth was calculated.
Results: Treatment with *in vitro* fertilization is significantly more frequent in females with UC and RPC compared with females with UC without RPC, aHR 3.2 95% CI [2.5;4.1]. The odds for having a live birth after treatment with *in vitro* fertilization is lower in females with UC and RPC, compared with females with UC without RPC, aOR 0.65 95% CI [0.5;0.9].
Conclusion: *In vitro* fertilization treatment is substantially more frequent in females with restorative proctocolectomy for ulcerative colitis and the odds that a treatment results in a live birth is lower compared with females with ulcerative colitis without restorative proctocolectomy.

P096

Fertility in patients with failure of restorative proctocolectomy for ulcerative colitis

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Aim: The impact of failure of restorative proctocolectomy (RPC) for ulcerative colitis (UC) on birth rates is unknown and is therefore investigated in the present study.
Method: All Danish patients with UC ($n = 28834$; 13549 males), RPC ($n = 1455$; 737 males) and failure ($n = 199$; 93 males) between 1980–2010 were identified. Records for parenting a child, surgery and failure were cross-linked in the nationwide health registries and birth rates calculated.
Results: In *females*, failures have lower birth rate (15.9 children/1000 years, 95% CI [10.5;23.9]), compared with no failure (30.4 children/1000 years, 95% CI [26.3;35.1]) and with UC (46.2 children/1000 years, 95% CI [45.1;47.4]). In *males*, failures have a birth rate (39.3 children/1000 years, 95% CI [28.6;54.1]), similar to UC (40.8 children/1000 years, 95% CI [39.6;41.9]), but lower than no failures (49.0 children/1000 years, 95% CI [43.9;54.8])
Conclusion: Failure of RPC adds a further negative impact on birth rates in females, while it abolishes the positive impact of RPC seen in males.

P097

Routine biopsy for microscopic colitis: worth the cost?

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Aim: to determine the cost of routine colonic biopsy for patients referred with loose stools in the absence of visible inflammation during colonoscopy.
Method: Retrospective study over a 1 year period of all patients referred for colonoscopy for loose stools or diarrhoea. Colonoscopy findings by JAG accredited endoscopists and histopathology results were extracted. We included acute, chronic, lymphocytic and collagenous colitis as microscopic colitis in the absence of visible inflammation. Biopsies were costed at £120 per set of biopsies.
Results: 350 patients with no visible colitis underwent routine biopsy, in whom 30 revealed microscopic inflammation (8.6%). The mean number of biopsies taken during colonoscopy was 2.42. Patient diagnosed with microscopic colitis had 2.32 biopsies taken 6 patients with microscopic colitis were treated with steroids, 4 had resolution of their symptoms.
Conclusion: Routine colonic biopsies in patients with diarrhoea and macroscopically normal colons is expensive. £42 000 was spent to successfully treat 4 patients. Further research is whether routine biopsies are necessary, or whether patients with certain symptoms can be selected for biopsy to reduce costs.

P098

Postoperative complications in IBD patients: what are we worried about? A national survey

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Aim: to evaluate surgeons' opinions on risk factors for postoperative complications in IBD patients.
Method: Descriptive study of a closed survey carried out through Twitter and e-mail to the members of the Spanish Association of Surgeons (AEC) and the Spanish Association of Coloproctology (AECP) from January to March 2018.
Results: 142 surgeons responded to the survey, 62% consultants. For 84% of responders, IBD patients have more complications than other surgical patients; anastomotic leakage and intraabdominal sepsis were considered the most dreaded complications. Preoperative steroids, immunosuppressors and anti-TNF were considered as risk factors (96, 80 and 79% respectively). 71.6% consider nutritional optimization as well as anemia and thromboembolic disease prophylaxis extremely important in these patients. Surgeons would decide not to perform an anastomosis or protect it with a stoma in emergency surgery (87.2%), malnutrition (67.7%), and steroid use (53.3%). 92% believe that the preoperative discussion and optimization of the patient by a multidisciplinary team decreases postoperative complications.
Conclusion: Potentially modifiable risk factors of postoperative complications have been identified in IBD patients. The majority of respondents believe that preoperative optimization and multidisciplinary team management has a positive influence on surgical results.

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P099
The therapies controlling postoperative surgical recurrence in Crohn's disease

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Aim: Postoperative recurrence suffers most patients with Crohn's disease. We aimed to clarify which therapy was efficient to control postoperative surgical recurrence in Crohn's disease in the era of novel therapies, such as anti-tumor necrosis factor alpha (TNFα) agents and endoscopic balloon dilatation.
Method: Seventy operations in 46 Crohn's disease patients were included. Survival curves were drawn, and univariate analyses and multivariate analysis were done. A P value of <0.05 was considered as significant.
Results: Smokers were more likely to develop recurrence significantly ($P < 0.05$). The patients who underwent anti-TNFα therapy had statistically better prognosis than those without ($P < 0.05$). Balloon dilatation seemed to be useful, because the prognosis of the patients who received dilatation technique had better prognosis ($P < 0.02$). Immunomodulators were effective to prevent surgical recurrence with statistical significance ($P < 0.05$). Patients who maintained elemental diet (more than 900 kcal/day) had statistically better prognosis than those without or with lower quantity ($P = 0.001$). By multivariate analysis, the only significant factor was the nutritional therapy ($P < 0.02$), followed by endoscopic balloon dilation therapy ($P = 0.057$).
Conclusion: Univariate analyses showed smoking, anti-TNFα therapy, immunomodulators, endoscopic balloon dilatation therapy, and elemental diet therapy were effective. Multivariate analysis revealed only elemental diet therapy was significantly associated with surgical recurrence.

P100
Does cessation of smoking reduce surgical recurrence after primary ileocolic resections for Crohn's disease in long-term

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Aim: This study aimed to evaluate the impact of smoking cessation on long-term surgical recurrence after primary ileocolic resection (ICR) for Crohn's disease (CD).
Method: All patients who underwent primary ICR for CD between 2000–2012 in two tertiary units were identified from a prospective database, applying strict inclusion criteria. The primary endpoint was surgical recurrence.
Results: In total, 283 patients were selected. Full smoking data was available for 242 (85.5%). One hundred sixty-nine patients (69.8%) were non-smokers (group 1), 42 (17.4%)active smokers at time of ICR and continued smoking up to last follow-up (FU) (group 2) and 31 (12.8%) quit smoking after ICR (group 3). Median FU was 111.8 months (IQR 84.0–147.6) and median time of smoking exposure after ICR for group 3 was 3 years (IQR 0–3). Kaplan-Meier survival analysis showed a significant higher surgical recurrence rate for group 2 compared to group 3 (16/42 vs 3/31, $P = 0.016$). Additionally, at FU significantly more patients in group 2 without surgical recurrence were on therapy for CD compared to group 3 (15/26 vs 4/28, $P < 0.0008$).
Conclusion: Smoking cessation after primary ICR for CD significantly reduces the risk of surgical recurrence in long-term.

P101
Using patient's preference in randomized controlled trials

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Aim: Randomized controlled trials (RCT) are the gold standard of assessing efficacy in clinical medicine. However, randomly allocating patients to interventions that do not accord with their preferences may decrease recruitment (external validity) and influence outcomes (internal validity). The aim of this study was to determine whether preferences affect external and internal validity in trials.
Method: A systematic review with meta-analyses was performed. Two independent reviewers identified all RCTs with a preference-arm published between 2005 and 2018. Trials that reported on allocation of patients to random or preference cohorts using the same inclusion criteria and protocol were included.
Results: In total 117 of 3734 identified articles met screening criteria and 35 were eligible. Acceptance of randomization was <50% in 23 of 35 studies. Higher education, female, older age, race, and prior experience with one treatment-arm were characteristics of patients declining randomization. Differences in primary outcome between randomized and preference groups were small and not significant, $P = 0.5$.
Conclusion: Treatment preference led to a substantial proportion of patient refusing randomization, while it did not affect the primary outcome. Therefore, patients preference trials could increase external validity without compromising the internal validity compared to randomization controlled trials.

P102
Ileostomy reversal following surgery for Crohns disease is unaffected by smoking, open surgery or peri-anal disease – a tertiary centre experience

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Aim: This study looks at the factors associated with a prolonged time to ileostomy reversal following ileocaecal resection in Crohn's disease.
Method: A retrospective case-controlled study at a tertiary referral centre was performed between April 2005 and February 2017 of consecutive patients undergoing an ileocolic resection. Patient demographics and operative details were collected for single stage *vs* two-stage cases procedures.
Results: We identified 25 patients (M:F 18:7) who had a two-stage procedure for ileo-caecal CD. Their mean age at surgery was (30.7, SD-10.4) years. Twenty-five age and sex matched controls were identified from patients who had a one-stage procedure with no statistically significant differences between the cohorts. The median time to reversal was 214 (IQR – 135–296.5) days with 14 (56%) patients taking longer than 180 days for reversal. Univariate or multivariate analysis did not identify any significant correlation with smoking, receiving steroids or biologics perioperatively, perianal disease, prior bowel resections, setting (elective vs emergency), access (laparoscopic vs open), additional bowel resections or post-operative complications and a delay in reversal.
Conclusion: Of the factors examined, which included smoking and the role of laparoscopic surgery, there were no pre-, intra- or post-operative factors correlating with a delay in ileostomy reversal.

P103
Determining the predictors of 30-day readmission following ileocecal surgery in patients with Crohn's disease

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Aim: To identify pre-, intra- and post-operative factors on the 30-day readmission in patients who underwent ileo-colonic surgery for Crohns disease (CD).
Method: A retrospective review of consecutive patients who underwent ileo-colic resection between April 2005- February 2017 for CD was performed.
Results: A total of 335 patients (M: F 172:163) underwent surgery. Their mean age at surgery was 37.8 (SD-14.5) years. Seventeen (5%) patients were re-admitted within 30-days of the index procedure at a median of 15.5 (IQR–8.3–23.5) days. A logistic regression was performed to identify statistically significant factors associated with readmission. The regression model was statistically significant ($P < 0.0001$). Factors associated with a readmission within 30 days were: the presence of any infection (OR 5; $P = 0.0001$), superficial surgical site infection (OR 2.2, $P = 0.01$)) and being discharged within 1-week of having surgery (OR 2.3), $P = 0.007$). The age, sex, smoking, diabetes, receiving biologics, mode of surgery (emergency vs elective), access (open vs laparoscopic), type of anastomosis, additional bowel resections, faecal diversion or intra-abdominal disease pattern did not have a statistically significant association with 30-day readmission.
Conclusion: Post-operative infection, intra-abdominal abscess and being discharged early increased the 30-day readmission after ileo-caecal resection for CD.

P104
Predicting the length of stay after surgery for Crohn's disease

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Aim: To identify the factors associated with the length of stay after ileo-colic resection for Crohn's disease (CD).
Method: A retrospective study was performed on consecutive patients who underwent surgery at a tertiary center for CD between April 2005 and February 2017. Records were analyzed for the primary length of stay and pre-, intra- and post-operative factors.
Results: A total of 335 patients (M: F 172:163) underwent surgery. Their mean age at surgery was 37.8 (SD-14.5) years with a median length of stay of 7 days (IQR 5–10). A multivariate regression analysis found the factors associated with a prolonged hospital stays (>7 days) were: ASA grade (Odds Ratio 4.4; $P = 0.006$); surgical site infection (OR 3.6; $P = 0.0001$); diversion (OR −2.4; $P = 0.004$); non-surgical infections (OR 2.0; $P = 0.017$); smoking (OR 1.4; $P = 0.01$); perioperative steroid use (OR −.3; $P = 0.013$); open surgery (OR 1.4; $P = 0.001$); simultaneous stricturoplasty (OR −1.5; $P = 0.043$) and colonic resection (OR −1.2; $P = 0.049$).

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Conclusion: Several factors associated with a hospital stay of more than 1 week have been identified. These will guide planning the post-operative care of CD patients.

P106
Prospective evaluation of accuracy in the diagnosis of benign anorectal conditions by clinicians and medical students

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Aim: Benign anorectal conditions are commonly encountered by clinicians of diverse specialties. We therefore carried out a prospective study to determine the level of clinicians' knowledge of these conditions.
Method: We selected six common benign anorectal conditions (prolapsed internal haemorrhoid, perianal haematoma, anorectal abscess, anal fistula, anal fissure and full thickness rectal prolapse). Consultants, specialist registrars, core trainees and medical students were asked to provide the diagnosis after being shown the relevant image.
Results: 104 clinicians and 40 medical students participated. Overall diagnostic accuracy for clinicians was 35.1% and for students was 15% ($P < 0.001$). Of the clinicians, surgeons had the highest overall diagnostic accuracy of 65.1%. The diagnostic accuracy across all other specialties was less than 50%. Rectal prolapse was diagnosed most frequently while haemorrhoidal conditions were diagnosed least frequently. Only 6% of participants identified all six conditions correctly whilst 19% diagnosed all conditions incorrectly. We identified no correlation between grade of clinician and diagnostic accuracy (P = NS)
Conclusion: The overall knowledge of benign anorectal conditions needs improvement across all specialties, but especially amongst medical students. We recommend the introduction of training modules and regular updates for clinicians involved in the diagnosis of these common conditions.

P107
Tactical PPI for TACTIC – an ileostomy closure trial

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Aim: Temporary ileostomy at anterior resection for rectal cancer has significant impact on quality of life and increases risk of dehydration and acute kidney injury. Readmission rates are high and adjuvant chemotherapy is often disrupted. An ileostomy impairs renal function long-term. After ileostomy closure, patients often experience low anterior resection syndrome. Our aim was to assess patient views on interventions to improve outcomes after closure of ileostomy in preparation of stratified multi-arm multi-stage RCT.
Method: Focused patient and public involvement (PPI) to elicit views on ileostomy closure following anterior resection for rectal cancer. Invitations made through charitable and patient support group Facebook© pages and Twitter accounts.
Results: Patient consensus demonstrated equipoise and acceptability of intervention on early *vs* standard ileostomy closure, and delayed closure with bowel pre-treatment. Interventions proposed for bowel pre-treatment via efferent limb stimulation were deemed acceptable with good patient information. Patients determined primary outcomes and advised on recruitment strategies.
Conclusion: Patients are partners in TACTIC throughout conception and design and are integral to trial funding and delivery. Five patients from PPI meeting are now co-applicants and integral members of the TACTIC research group.
Acknowledgements: Bowel Disease Research Foundation.

P108
The role of endoscopic interventions and electroincision in benign anastomotic strictures following colorectal surgery

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Aim: The anastomotic strictures are one of the most common complications of colorectal surgery. Various endoscopic techniques have been defined for the treatment of these patients. Balloon dilatation is the most well-known and the simplest to apply for treatment. We aimed to present our series of endoscopic interventions and electro-incision management for anastomotic strictures.
Method: The files of 59 patients, who underwent colorectal surgery in our department and were diagnosed during the follow-up with anastomotic stricture, were analyzed. The outcomes of endoscopic interventions such as balloon dilatation and electro-incision were compared and reported.
Results: The mean age of the 59 patients included in the study was 59.5 ± 16.26 years. The primary operative indications were colorectal cancer in 46 patients, inflammatory bowel disease in seven patients, diverticulum in five patients and penetrating trauma in one patient. Single or multiple balloon dilatations were successful in 48 patients. Electro-incision was performed in 11 patients because of the failure in balloon dilatation. None of the patients needed a secondary surgery.
Conclusion: Balloon dilatation can be performed safely as the primary treatment option, because of its easy access and non-invasive application. Electro-incision is also a safe and effective endoscopic technique that can be preferred especially when the balloon dilatation fails.

P109
Outcomes of loop ileostomy closure by different methods

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P110
A colorectal perspective on management of Hidradenitis Suppurutiva

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Aim: The management of Hidradenitis Suppurativa remains challenging as there is no consensus on what surgical technique is preferred, nor what if any adjuvant treatment should be recommended. The aim of our study was to evaluate the efficacy of a (sometimes extensive) lay open/excision technique in perianal and perineal hidradenitis suppurativa.
Method: A retrospective study was performed of patients undergoing surgery for perianal/perineal hidradenitis suppurativa carried out between 2005 and 2013 at St Mark's Hospital by one surgeon. Patients were identified from operative logbooks and their clinical notes were reviewed.
Results: Twenty-six patients underwent lay open/excision of hidradenitis suppurativa in the perianal/perineal area. Fifteen patients were male and the median age was 43 years (range 22–60). Patients underwent a total of 45 procedures. Two thirds were current or former smokers. Over 40% were diagnosed and receiving treatment for Crohn's disease. The recurrence rate for Hurley stage I and II was 29%. The median follow up was 11 months (range of 2–101). The overall complication rate was 12% and none of the patients required a diverting stoma.
Conclusion: Lay open/ excision of hidradenitis suppurativa has an acceptable recurrence rate. Combined treatment should be explored.

P111
Preliminary results of randomized trial of study of perfusion of colorectal anastomosis using fluorescence angiography

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Aim: to assess the efficacy of fluorescence angiography in reduction of anastomotic leakage in colorectal surgery
Method: 240 patients planned for stapled colorectal anastomosis will be included into trial (NCT03390517) and randomized 1:1 to compare the rate of anastomotic leakage after fluorescence angiography and without. The primary endpoint is the anastomotic leakage rate.
Results: Since November 2017, 65 patients [31 male, mean age (SD) 62.9 (7.7)] had colorectal resection with stapled anastomosis. Of them 35 patients were randomized for fluorescence angiography. Among surgeries 69% was low anterior resection, 42% – laparoscopic operations, 83% patients had preventive stoma. The changes of operation plan were happened in 20% of patients in fluorescence angiography group. The anastomotic leakage rate was 11.4% and 20%, correspondingly ($P = 0.49$).
Conclusion: The using of fluorescence angiography in the formation of colorectal anastomosis seems to have advantages in decrease of anastomotic leakage. Further recruiting of patients into trial is necessary.

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P112
Aggressive angiomyxoma of the perineum and lower pelvis: case series and literature review

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Aim: Aggressive angiomyxoma (AA) is a mesenchymal tumour that usually affects middle-age women. The aim of this poster is to study our case series along with a literature review of the clinical and biological behaviour of these tumours.
Method: Patients diagnosed with AA from 2000 to 2017 were identified and studied. A thorough literature research about AA was made.
Results: 6 patients diagnosed with AA were identified, 4 males. The median age was 57 years. A nonpainful palpable mass was the common clinical presentation. All tumours were larger than 5 cm. Location was the pelvis ($n = 4$), ischioanal fossa ($n = 1$) and inguinal canal. All cases were surgically removed; 2 cases required pelvic exenteration due local invasiveness. Excision was considered marginal in one case. During follow-up 2 patients developed local recurrence, at 5 and 7 months respectively. One required operative treatment while the other was managed with hormonal therapy.
Conclusion: AA's are locally aggressive tumours with a propensity for local recurrence. Surgery is the gold-standard treatment, however recent recommendations support marginal surgeries with low morbidity. This is due to similar survival rates and the potential administration of adjuvant hormonal therapy.

P113
Could hyponatremia be an indicator of colorectal anastomotic leak?

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Aim: Anastomotic leak is a serious postoperative complication in colorectal surgery. It can lead to devastating morbidity and mortality. Clinicians usually depend on a combination of clinical, biochemical and radiological findings to diagnose this problem. We aimed to look if hyponatremia could be an indicator for anastomotic leak.
Method: We reviewed literature using PubMed, EMBASE and MIDLINE. Keywords: hyponatremia, anastomotic leak, intraabdominal sepsis, peritonitis. Our search reviewed 92 results. 86 articles were excluded as they were unrelated. 4 retrospective clinical studies were included. Two another descriptive studies were included as well. We tried to link the pathophysiology of hyponatremia as marker to anastomotic leak.
Results: 4 retrospective studies looked at 263 patients with either anastomotic leak, peritonitis, colonic perforation or intraabdominal sepsis, whereas controls were ($n = 1312$). Anastomotic leak is a significant stress to human body. As a result, cytokines including IL-6 are secreted. This will switch on the immune-neuroendocrine interface leading to non-osmotic secretion of vasopressin. ADH eventually leads to water retention resulting in hyponatremia. Hyponatremia was defined as Na levels <136.
Conclusion: Hyponatremia seems to be a significant and clinically relevant marker of anastomotic leakage.

P114
Can we predict and prevent surgically complicated diverticulitis?

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Aim: We sought to characterize the clinical course of patients undergoing elective surgery for diverticulitis in the setting of operative complexity (stricture, fistula, and abscess present at surgery).
Method: Our health system collaborative data on 1502 patients (1/2010–12/2016) who underwent elective surgery for diverticulitis were evaluated. We used univariate and multivariable analysis to compare complex (C) *vs* simple (S) disease to identify predictors for complexity.
Results: 559/1502 (37%) patients had C-disease. C-patients were older, with a worse functional status, more COPD, diabetes, hypertension, higher CCI (2.71 *vs* 1.58, $P < 0.001$), more smoking, drinking, and more malnutrition. Interestingly, C-patients did not have more episodes of diverticulitis ($P = 0.67$). At surgery, C-patients had longer operations, higher need for diverting stomas and additional resections of adjacent structures. Their recovery was worse with longer hospital stays (7 *vs* 4.8 days, $P < 0.001$), more deaths (1.4% *vs* 0.1%, $P < 0.001$), more postop abscess formation (14, 2.5% vs 5, 0.5%, $P = <0.001$), and ileus (62, 11.1% *vs* 60, 6.4%, $P = <0.001$).
Conclusion: Patients with the complex disease do not seem to have had more episodes of diverticulitis prior to surgery. Instead, C-disease may be a reflection of a C-patient: which would argue that C-patients should have earlier interventions, perhaps even after one simple attack.

P115
One year survival following emergency colectomy

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Aim: This study aimed to use National Emergency Laparotomy Audit (NELA) data from our centre to determine 30, 90 day and 1 year mortality following emergency colectomy.
Method: A retrospective analysis of the NELA data (January 2014- December 2016) from Nottingham University Hospital. Observations were censored at death or the 31/12/2017. Life table analysis was used to report 30, 90 day and 1-year survival stratified by age and sex.
Results: 404 patients with a median age of 64 years (IQR 49–75.5) were included. The median pre-operative P-POSSUM mortality score was 9.7% (IQR 4.1–24.7%). Thirty day survival was 91.1% (95% CI 87.9–93.5%) with a 90 day survival of 87.4% (95% CI 83.7–90.2%) and a 1-year survival of 81.9% (95% CI 77.7–85.3%). There was no difference in survival between sexes (Log-rank $P = 0.61$). Survival decreased significantly with increasing age (Log-rank $P < 0.0001$). Those over 80 years had a 30 day survival of 85.5% (95% CI 73.0–92.5%), a 90 day survival of 76.4% (95% CI62.8–85.5%) and a 1-year survival of 66.7% (52.4–77.5%).
Conclusion: One-year survival for elderly patients following emergency colectomy is low. Pre-operative discussion of risk should not just rely on short term predicted mortality outcomes but also take into consideration longer term survival.

P116
Is a discharge at day 3 after colectomy or 5 after rectal resection safe? A Prospective cohort of 145 patients included in an Enhanced recovery program

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Aim: The aim of this study was to report our results of a 3 and 5-day hospitalization program after colorectal resection and enhanced recovery (ERAS).
Method: An ERAS program was prospectively proposed to all patients who required a colorectal resection (January 2014–April 2017) with a 3 or 5-day discharge objective.
Results: 145 patients (53 females) with a meanage of 62 ± 12 yearswere included. Surgery was proposed mainly for colorectal cancer ($n = 100$, 69%). A laparoscopic approach was used for 141 (97.2%) patients. Sixty-seven (46.2%) patients had recovered bowel movement at day 1. Urinary drainage and perfusion were removed at day 1 for 102 (70.3%) and 38 (26.2%) patients. Thirty-two patients experienced complications (22.1%) including seven severe complications (4.8%). Median hospital stay was 5 (2–33) days. 70 patients (48.3%) were discharged at day 3 or 5, within only 4 were readmitted, for postoperative ileus. Discharge was delayed for complication ($n = 32$, 42.7%), discharge CRP>120 ($n = 11$, 14.6%) or refusal without medical reason ($n = 32$, 42.7%). Therefore, this program was successful for 66 patients (45.5%).
Conclusion: ERAS allows early discharge of the patients without increasing morbidity. Primary reason of failure is patient's anxiety. CRP at day 3 is a useful test to predict further complication.

P117
Safe adoption of robotic colorectal surgery using structured training: early Irish experience

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Aim: To describes our initial experience with safe adoption of colorectal robotic surgery using structured training.
Method: Analysis of prospectively maintained database for 55 consecutive cases performed by 4 colorectal surgeons, at the beginning of their robotic experience, undergoing training as per the European Academy of Robotic Colorectal Surgery (EARCS) programme.
Results: Fifty-five patients underwent robotic surgery between January 2017 and January 2018 (M:F, 34:21). Median age 60 years (35–87). 33 patients had colorectal cancers (11 received neoadjuvant chemoradiotherapy). 21.8% of patients had

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BMI>30. Procedures performed were low anterior resection (n = 19), sigmoid colectomy (n = 9), right colectomy (n = 22), ventral mesh rectopexy (n = 3), APR (n = 1) and reversal of Hartmann's procedure (n = 1). Median blood loss 40 ml (0 – 400). Mean operative time was 233 min (SD: 79.07) for right colectomy and 368 min (SD: 104.65) for anterior resection. Median hospital stay was 6 days (IQR: 5–7). No 30-day mortality, intraoperative complications, conversion nor anastomotic leakage. Median LN harvest was 15 in non-neoadjuvant cases (range:7 –23) and 8 in neoadjuvant cases (range:2–14).
Conclusion: Our early results demonstrate that colorectal robotic surgery is feasible and can be adopted safely through structured training without compromising clinical or oncological outcomes

P118
Colonoscopy quality assurance in Irish hospitals: is participating in quality improvement programs beneficial?
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Aim: To report the colonoscopy quality indicators in our institute and to compare our outcomes to the national Irish (CONJOINT) and the international (JAG) guidelines before and after enrolling into these two quality improvement programs.
Method: Analysis of prospectively maintained database of all colonoscopies performed in our institute between April 2016 and April 2017 (before enrollment period) and April 2017 and April 2018 (after enrollment period)
Results: A total of 4966 patients had colonoscopy in our unit between April 2016 and April 2018 performed by six surgeons and four gastroenterologists. 49.1% were males, and 50.9% were females. Median age was 57 years (range 15 – 93). The number of scopes performed by each endoscopist, caecal intubation rate, comfort level, polyp detection and retrieval rates and the number of adverse events were in line with the recommendations in both periods. Conversely, sedation dose, rectal retroversion rate, and adequate bowel preparation rate did not meet the standard in the first period. However, they improved significantly and met the guidelines in the subsequent period.
Conclusion: Our results showed that participation in the national and international quality improvement programs improve quality of colonoscopy service. We encourage all endoscopy units to participate in these programs.

P119
A rare cause of lower gastrointestinal bleeding: a case report of midgut malrotation in an adult patient
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Background: Midgut malrotation in adults is a rare condition with an estimated incidence of 0.2% in the population. It could present acutely as abdominal pain from volvulus or with chronic intermittent abdominal pain, nausea, vomiting and dyspepsia. It is well-established that an abnormal relative position of the superior mesenteric vein and artery can be present in those patients, however, gastrointestinal bleeding due to gut malrotation is extremely rare. To our knowledge, this is the first case to be reported with lower GI bleed due to midgut malrotation in this age group.
Case presentation: We present a case of a 30-year-old female who presented to our service with rectal bleeding. Colonoscopy haemorrhoids and ascending colon vascular engorgement. Subsequent CT confirmed the intestinal malrotation and it revealed a narrowing at the confluence of the superior mesenteric vein and mesenteric venous congestion which led to her symptoms. Elective laparoscopic Ladd's procedure was performed successfully. Patient's symptoms settled completely postoperatively and a follow-up CT scan showed resolution of the venous congestion.
Conclusion: Despite its rarity midgut malrotation could cause lower GI bleeding in adults. Familiarity with this condition and its management would be beneficial when dealing with lower GI bleeding of obscured aetiology.

P120
Wound infection in elective colorectal resection by using a double-ring wound-edge protection device
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Aim: From the 70s to the present time the rates of surgical wound infection in colorectal surgery have not changed. The aim of this study is to determine if the use of a double-ring wound-edge protection devices are effective in reducing the incidence of operative wound infection in elective colorectal surgery.
Method: Prospective observational study of 135 consecutive patients undergoing elective colorectal resection. A laparotomy auto-retractor (double-ring wound-edge protection device) was used in all cases. 57 resections were laparoscopic (42%). In 84 patients (62%), no mechanical preparation of the colon was performed. The wounds were checked daily in the hospital and 30 days postoperatively. The main variable of the study has been the infection of the operative wound, both superficial and deep.
Results: The median age was 68 years (range 41–90). Median body mass index was 24.5 (range18–36.8). There were 100 colectomies (74%) and 35 rectal resections (26%). 85 patients (63%) were classified ASAI-II and 50 (37%) ASA III-IV. The median postoperative stay was 7 days (range 3–34), only one patient developed surgical wound infection (0.7%).
Conclusion: Our study confirms that double-ring barrier protectors are effective in decreasing the rate of surgical wound infections in elective colorectal resection.

P121
Morbidity and mortality: learning from 'free lessons' through a novel A-Z approach
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Aim: Lucian Leape first rejected the 'perfectibility model' of surgery moving away from blame culture and towards analyzing the psychology of error. This project aimed to enhance the educational and departmental value of the weekly morbidity and mortality meeting (M&M).
Method: An initial questionnaire of junior doctors resulted in educational value and departmental interventions of M&M being rated as < 5/10. Implementation of record keeping of all morbidity and mortality cases, identification of learning outcomes, and quantifying causes of mortality in a novel A–Z approach was achieved through a pro forma.
Results: Following implementation of the pro forma, educational and departmental outcomes were rated >8/10. 17 cases have been completed using the pro forma and a range of learning outcomes and departmental actions have been identified. Through A-Z quantification 'N. Hospital acquired infection' impacted 6 cases, compared to factors such as 'R. Death due to trauma' and 'Y. Unexpected death' impacting 1 case each, demonstrating a Pareto principle.
Conclusion: This simple adjunct to M&M had a significant educational impact and has begun to quantify deviations in care to focus departmental efforts. All M&M should follow these principles and could utilize this pro forma.

P122
A new technique of completely diverted tube ileostomy for protection of colorectal anastomosis
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Aim: The study was designed to evaluate a new completely diverted tube ileostomy by temporary occlusion of distal ileal limb to defunction the anastomosis.
Method: Patients who had indication for defunctioning ileostomy with elective surgery were included. After resection and anastomosis tube ileostomy was created by using spiral endotracheal tube to prevent kinking. In order to provide a complete fecal diversion, a penrose drain was used for occlusion the distal ileal limb. The primary measured outcomes were the rate of complete diversion in the presence of penrose drain. Evaluating fistula closure after tube removal.
Results: From June 2016 to April 2018, thirty-nine patients had a completely diverted tube ileostomy. There was no stool passage per rectum for 2 weeks while the penrose drain was not removed. Passage happened after penrose drain removal in %80 of the patients (n:31) and happened after penrose and subsequently tube removal in %20 (n:8) of the patients. Tube was removed on day 23 (17–34) and the subsequent stoma closure time was 6 (2–30) days.
Conclusion: The completely diverted tube ileostomy by using easy removable penrose drain to defunction the colorectal anastomosis is a safe and effective and avoids a formal stoma.

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P123
Treatment of mild uncomplicated acute diverticulitis without antibiotics: a systematic review and meta-analysis

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Aim: Most current guidelines recommend the use of antibiotics in mild uncomplicated acute diverticulitis (AD) despite limited evidence. This study aims to compare the safety, effectiveness and outcomes in treating mild uncomplicated AD without antibiotics to treatment with antibiotics.
Method: PubMed, Embase, Clinicaltrials.gov and the Cochrane Library, were searched with the keywords "antibiotics" and "diverticulitis". A meta-analysis was performed on all studies in English, on treating mild uncomplicated AD without antibiotics with >20 individuals.
Results: Search yielded 1164 studies. Nine studies were included, comprising of 1663 treated without antibiotics and 842 treated with antibiotics. The no antibiotics group had a significantly a shorter hospital stay (mean difference = −0.68, $P = 0.04$). There was no significant difference in the percentage of patients requiring further treatment/ intervention to settle during the initial episode (RR1.48, $P = 0.28$), rate of re-admission/ deferred admission (RR 1.17, $P = 0.26$), need for surgical/radiological intervention (RR = 0.61, $P = 0.34$), recurrence (RR = 0.83, $P = 0.21$) and complications (RR = 0.7–1.18, $P = 0.67$–0.91).
Conclusion: Treating uncomplicated AD without antibiotics is associated with significantly shorter hospital stay. There is no significant difference in the percentage of patients requiring further treatment/intervention to settle in the initial episode, rate of re-admission/deferred admission, need for surgical/radiological intervention, recurrence and complications.

P124
Medical nutrition therapy and perioperative complications: a prospective non-interventional study incorporating mobile technologies

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Aim: We sought to investigate how prophylactic use of perioperative nutrition influenced the number and type of medical complications as malnutritioned surgical patients are more prone to developing perioperative complications.
Method: We developed a custom multiplatform mobile application for conducting this study, where investigators were able to add anonymized patient and clinical data (including Subjective Global (nutrition) Assessment scale), and algorithmically perform inclusion criteria verification (Nutritional risk screening). Investigators were automatically reminded to perform follow-up assessments 3, 7, 14 and 90 days post surgery.
Results: 151 females and 193 males were screened to be included in this study. Patients who were initially categorized as severely undernutritioned had a significantly higher BMI if they received MNT ($P = 0.007$). In 27% of observations investigators saw some kind of adverse events. Interestingly generalized viral or bacterial infections were more frequent (9%) in patients who did not receive MNT (3.9%, $P = 0.008$). Surgical wound infections perioperatively were less often seen in patients receiving MNT ($P = 0.014$). There were no differences regarding anastomosis leakage ($P = 0.321$).
Conclusion: Prophylactic use of MNT might be beneficial for patients undergoing gastrointestinal surgery. Mobile technologies are becoming important tools in conducting clinical trials.

P125
Medigent.leak application – first 300 colorectal patients in advanced smartphone app for calculation the risk of leak, data collection and registry of complications

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Aim: Under the patronage of the Polish Club of Coloproctology, an author's application has been created, which acts as a registry of gastrointestinal resection operations, allows assessment of the risk of leaks and generates recommendations for reducing the risk.
Method: We developed a custom multiplatform mobile application for conducting this study, where surgeons were able to add anonymized patient. The data form patients were collected preoperatively (calculation of the risk), directly after surgery (description of details of the procedure). Surgeons were automatically reminded to perform follow-up assessments 7 and 30 days post surgery (screening for complications as death, leak and SSI)
Results: Nearly 300 patients with colorectal procedures were reported in application till end of April 2018. Death of patients was reported 8 times, leak in 22 patients, protective stoma in 30 patients, SSI in 36 patients. The most commonly used method of leak prevention was sealing by collagen matrix covered with fibrinogen and thrombin
Conclusion: Applications seems be effective and easy to use tool to collect the cohort data about colorectal surgery. Calculation of the risk of leak before the surgery can be helpful for surgeon in intraoperative strategy, as preventive stoma creation or sealing the anastomosis.

P126
NPWT – method for treatment of complicated stoma

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Aim: The aim of the study was create optimal NPWT wound dressing for treatment of complicated stoma with the non-healing abdominal wound.
Method: We created optimal NPWT model for stoma protection and healing, with skin protection and improving of abdominal wound healing. We analyzed time of healing, quality of life of patients (QoL), final effect of the stoma function and abdominal scare
Results: 45 patients with SSI and wound healing complication after stoma creation were included in the study. In 20 advanced NPWT wound dressing was created. The mean time of wound healing occurred 4, 2 weeks in non-NPWT patients and 2, 5 weeks in NPWT patients. QoL was higher in NPWT patients, as well as final stoma function and abdominal scare
Conclusion: NPWT is very effective tool for complicated abdominal wounds after colorectal surgery with stoma creation. NPWT should be introduced by qualified staff directly after complications occurrence.

P127
Routine histopathological examination of appendectomy specimens: a systematic review

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Aim: With increasing emphasis on cost containment, the value of routine histopathological examination of appendectomy specimens has been questioned. The aim of this systematic review was to determine whether routine histopathological examination of appendices is justified.
Method: Medline, EMBASE, Web of Science and the Cochrane Library were searched for articles published between 2008 and 2017 that reported on the incidence of histopathologically proven aberrant pathology in appendectomy specimens.
Results: In twenty studies including 52.363 patients, the weighted mean incidences of a benign neoplasm, neuro-endocrine tumour and malignant neoplasm were 0.27%, 0.38% and 0.09%, respectively. Other pathology was found in 0–9%. The sensitivity of intraoperative findings to detect aberrant findings was reported in six articles and ranged from 0–100%. Consequences of aberrant pathology were described in thirteen studies. Most patients with parasite infection, granulomatosis and malignant neoplasms underwent additional treatment, in contrast to patients with a benign neoplasm or neuro-endocrine tumour.
Conclusion: From the present available evidence, it cannot be concluded that it is safe to omit routine histopathological examination after appendectomy. Prospective studies on the safety of an approach in which appendices are selectively sent to the pathologist based on the intraoperative findings are urgently required to provide definitive answers.

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P128
Effect of closed incision negative pressure wound therapy on incidence rate of surgical site infection after stoma reversal: a preliminary report

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Aim: Stoma reversal (SR) procedure is associated with a relatively high risk of perioperative complications with surgical site infection (SSI) as the most common. Recently closed incision negative pressure wound therapy (ciNPWT) was applied widely to prevent surgical site infection (SSI). The goal of the present study was to investigate the efficiency of ciNPWT on the incidence rate of SSI after SR.
Method: Thirty patients were randomly assigned to receive either ciNPWT group ($n = 15$) or standard dressing (SD) group ($n = 15$). CiNPWT was applied every 3 days whereas SD was changed every day. Clinical evaluation for SSI, CRP level and pain assessment were analyzed.
Results: The incidence rate of SSI was reported in 13% (2/15) in the ciNPWT group and in 26% (4/15) in the SD group. All patients in SD group who develop SSI presented both local and generalized signs of infection. Moreover, wound dehiscence and hematoma rates were higher in SD group when compared to ciNPWT group.
Conclusion: ciNPWT seems to have the potential to reduce SSI after SR. Due to clean-contaminated classification of the wound, ciNPWT may be appropriate for SR patients. Further investigation is needed to establish firmly the benefit in this group of patients.

P129
Non-cancer colorectal multidisciplinary meeting improves patient care and contributes to a more effective colorectal cancer MDT

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Aim: Multidisciplinary team meetings (MDTs) have become the hallmark of quality assurance in cancer service. We aimed to assess whether a non-cancer MDT can also play role in improving patients' care.
Method: Prospective audit of benign colorectal MDTs.
Results: In 3 months period, total of 92 cases were discussed at weekly benign colorectal MDT (median 8 cases, 42 min per meeting, range 5–13 cases, 21–72 min). 15 patients were discussed more than once due to stepwise review of diagnostic work-up. Core members consisted of colorectal surgeon, gastroenterologist, radiologist, and admin worker who were present in all of the MDTs with median 13 attendees per MDT (range 10–18). Forty-nine percent of the cases discussed were suspected cancer cases, 32% were complex polyps, and 14% were general surgery cases. Seventy-three percent of discussions were combination of review of radiological images/endoscopic findings and exchanging opinions about management. Suspected cancer cases were referred to cancer MDT only after completion of work-up or preview of post-operative histology results, filtering out 61% of cases that were not ready for discussion.
Conclusion: Benign MDT is a useful forum to efficiently streamline patients to appropriate management. It reduced caseload burden of cancer MDT by more than 60%.

P130
Worth the wait: a closed-loop audit confirming the need for preoperative imaging in appendicitis

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Aim: To measure the impact of increased imaging on the length of stay (LOS), complications and negative appendicectomy rate (NAR) at a European teaching hospital.
Method: An audit of adults patients undergoing appendicectomy (January-June 2016) was undertaken (Group 1). Based on results, a departmental guideline was introduced to image all patients with *near normal* inflammatory markers. Thereafter, patients who underwent surgery for appendicitis (December 2017-April 2018) were identified from electronic hospital records (Group 2). Data recorded included demographics, investigations, LOS, histology and complications (Clavien-Dindo).
Results: 38.5% of Group 1 had imaging (CT or ultrasound) compared to 64.7% of Group 2. The NAR in Group 1 was 19.8% and decreased to 11.3% in Group 2. Complication rates were comparable between the groups. In Group I, Clavien-Dindo I-II = 14.7%; Clavien-Dindo III-IV = 1.64%. There was a 19.2% complication rate in patients with a negative appendicectomy. In Group II, Clavien-Dindo I-II = 13.2%; Clavien-Dindo III-IV = 1.47%, with no complications in the patients with a negative appendicectomy. Median LOS was 2 days (range 1–14) in Group 1 ($n = 122$) and 3 days (range 1–9) in Group 2 ($n = 68$).
Conclusion: Increased imaging use in suspected appendicitis leads to a reduction in NAR.

P131
Mechanical bowel preparation (MBP) decreases postoperative anastomotic leak rate to the same extent after both right and left colectomies

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Aim: Present study analyzes whether MBP is decreasing postoperative morbidity to the same extent after right and left colectomies.
Method: Patients undergoing elective colonic resections were included. Resections including rectum, total colectomies and Crohn's disease patients were excluded. From 2008 to 2014, all patients received preoperative MBP only 2014 and 2015, all patients underwent surgery without MBP. Thereafter, all patients received MBP and preoperative oral antibiosis. An intention-to-treat analysis was performed.
Results: 830 patients underwent right or left colectomies. Anastomotic leak rate was reduced by MBP from 12.6% to 5.2% (Odds ratio 0.38, $P = 0.003$) after right colectomy and from 10% to 3.3% (OR 0.31, $P = 0.023$) after left colectomy. The peak level of postoperative serum C-reactive protein was reduced by MBP from 170 mg/l to 131 mg/l ($P<0.001$) after right colectomy and from 120 mg/l to 95 mg/l ($P = 0.014$) after left colectomy. The addition of oral antibiosis to MBP further reduced C-reactive protein level to 92 mg/l after right and to 73 mg/l after left colectomy. Mortality and LOS did not differ between patients having MBP or not.
Conclusion: MBP reduced postoperative anastomotic leak rate to the same extent after right and after left colectomies.

P132
Systematic review of psychological effects of emergency laparotomy

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Aim: To systematically review the literature to assess the incidence and risk factors for post-traumatic stress disorder (PTSD) or anxiety and depression in patients undergoing emergency laparotomy.
Method: Databases were searched to identify any quantitative study that measured the association of post-traumatic stress or mental health outcomes following emergency laparotomy using validated assessment tools.
Results: In total 10 755 articles were retrieved, 181 were included in the full text review and 38 articles were included in the final review. Only 2 studies investigated the psychological outcomes following peritonitis or emergency laparotomy as the primary research aim. Twenty studies assessed patients' quality of life following ICU stay, emergency general surgery patients were a sub-group and a measure of mental health was a component. There is evidence that up to 25% of patients undergoing emergency laparotomy have symptoms of post-traumatic stress. By comparison, the prevalence of PTSD in the general population is 2.7% for women and 1.2% for men. Higher ASA, increased length of stay on intensive care, post-operative complications and younger age are risk factors.
Conclusion: Assessing patients' psychological needs may help direct interventions to improve quality of life, health status and satisfaction with care in the aftermath of emergency laparotomy.

P133
Cytomegalovirus and human herpesvirus 6 in the development of acute appendicitis in children

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Aim: Acute appendicitis has been associated with viral infections, but mostly in immunocompromised patients. We studied the association of cytomegalovirus (CMV) and human herpesvirus 6 (HHV-6) with acute appendicitis in immunocompetent children.
Method: In this prospective study we included 79 children (5–18 years old) suspected of appendicitis. Acute appendicitis was diagnosed in 25 patients. The remaining 54 patients were controls.

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Results: CMV IgG antibodies were present in 20% of patients with appendicitis and 29% of control patients ($P = 0.28$). CMV DNA was not detected in blood or appendix of any patient. All patients with appendicitis and 98% of control patients had HHV-6 IgG antibodies. In 21 out of 25 patients with appendicitis we detected HHV-6 in their appendices compared to two out of four control patients ($P = 0.29$). HHV-6 DNA was detected in all appendices of patients with perforated appendicitis compared to 79% of patients with non-perforated appendicitis ($P = 0.54$).
Conclusion: In our study population, no association between CMV and acute appendicitis was found. Nevertheless, due to low CMV seroprevalence a possible relation cannot be ruled out. No association between HHV-6 and acute appendicitis was found, since HHV-6 DNA was detected in patients with and without appendicitis.

P134
Intracorporeal laparoscopic anastomoses in segmental colonic resections – a single center retrospective study

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Aim: To investigate the complications rate and postoperative recovery after intracorporeal laparoscopic anastomoses in patients who had segmental colonic resection.
Method: A retrospective chart review of patients who have had an intracorporeal laparoscopic anastomosis during a segmental colonic resection between July 2015 and November 2017 were investigated. The project was approved by the Danish Health and Medicines Authority (3-3013-2284/1) and The Danish Data Protection Agency (#2507).
Results: Of the 113 operations, 44 were right-sided hemicolectomies, 38 extended right-sided hemicolectomies, 19 left hemicolectomies and 12 ileocolic resections. Clavien-Dindo level 3–4 complications were seen in 10.6% (12/113). Amongst these, 5 (4.4%) patients had anastomotic leakage, but only 1 (0.9%) of these required anastomosis broken down. The median time from surgery to mobilization, bowel-function and discharge was respectively 17 hours, 2.43 days and 3.6 days.
Conclusion: Performing intracorporeal laparoscopic anastomoses seems safe, according to the low complication-rate and short admission-time after segmental colonic resection.

P135
Comparative study of perioperative complications in patients with and without placement of colonic stent

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Aim: Emergency surgical treatment of patients with obstructive colorectal neoplasms is associated with high morbi-mortality and high percentage of colostomies. Stent placement to decompress the obstruction previous elective surgery is a recommended option. To compare the rate of perioperative complications between patients with colonic stent placement, previous to elective surgery and patients without it.
Method: This is a retrospective study. 50 patients are divided into two comparable groups. In group A we include patients with emergency stent placement for obstructive colorectal neoplasia as bridge to oncological surgery. In group B, comparable patients without stent are included. We will study the differences in the approach employed, intra and post-operative complications and stoma creation.
Results: The laparoscopic approach was used in 88% of cases in group A and 92% in group B, requiring conversion in 4% in both groups. In both groups, 4% of the cases required a stoma. 12% of cases in group A had postoperative complications requiring surgical reoperation, compared to 8% in group B.
Conclusion: The use of colonic stents as bridge to elective surgery in patients with obstructive neoplasms is a valid option without greater risk of complications.

P136
Ghost versus lateral ileostomy. Indication and morbidity comparison

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Aim: The objective of this study is to review and compare indication and morbidity of ghost ileostomy and traditional lateral ileostomy.
Method: Indications of lateral and ghost ileostomy, and morbidity of these last ones are compared, Of a total amount of 172 ileostomies, 155 were lateral and 17, ghost (9.8%), making 83.3% and 70% laparoscopic approach respectively. A terminal ileal loop was attached by a vessel-loop. CRP levels were seriated, and abdominal CT done when leak was suspected.
Results: Indications of both techniques are presented in the table. Eight patients in the ghost ileostomy series (47%) presented an anastomotic leak and had to be reoperated, two of them under loco-regional, and six under general anaesthesia. One of the patients needed to be reoperated because an intestinal obstruction due to the vessel-loop. On the rest of them, ghost ileostomy was removed between 6th–10th postoperative day.
Conclusion: Ghost ileostomy is a feasible and reproducible technique that can avoid, the creation of a temporary stoma. We can reduce the indications of ileostomies but postoperative follow up must be very meticulous in order to detect anastomotic leak and to take advantage of the ghost ileostomy creation under local anaesthesia.

P137
3D printed devices use in transanal endoscopic approach. A case series

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Aim: Endoscopic transanal approach allows making surgical procedures. Available instrumental occasionally present certain limitations that can be solved with new devices creation, using graphic design software and 3D printers. To show our centre experience using 3D printed devices to develop transanal endoscopic procedures without using pneumorectum.
Method: Using Solid-Works impression software, a 3D printer and ABS polymer, several devices were made and proved, initially on mix simulators and cadavers. After obtaining Ethic Clinical Regional Investigation Committee authorization, we started using them on patients. We present a 5 cases series, that underwent 6 transanal endoscopic resections using a 3D printed endorectal retractor. Type and location of the lesion, anaesthesia modality, quality of surgical specimen obtained, complications and postoperative stay were analyzed.
Results: Three cases presented villous adenoma, other three adenocarcinoma. They were located at an average ¡ of 5.3 cm from pectine line. In three patients spinal anesthesia was used. In all of them full thickness wall specimen was obtained, with margin affectation in one case. Two patients suffered rectorrhagia during immediate postoperative period,
Conclusion: Designing and making functional devices with 3D printers for using in endoscopic transanal procedures, without needing pneumorectum or general anaesthesia, is feasible.

P138
Implementation of an enhanced recovery program (ERAS) after colorectal surgery. problems and possible solutions. If eras is beneficial, why is not the standard of care?

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Aim: Create, implement and maintain an ERAS program using the Knowledge to Action (KTA) Cycle model.
Method: A multidisciplinary team, standard of care guideline and a tailored strategy was developed, based on KTA Cycle to implement ERAS Program in our center. Identification of strengths as well as possible barriers that could affect the start-up of the program were analyzed. Subsequently, strategies were created for the maintenance of the program through periodic meetings with external audits. A prospective cohort study was carried out to evaluate de results.
Results: 150 patients were analyzed to assess the starting point prior to the implementation program. The key points in the program were identified (patient information, communication, and motivation of team members and the need for ongoing training. After the start-up of the implementation, the adherence was 88% in the perioperative period, 73% in the intraoperative period and 51% in the postoperative period.
Conclusion: The application and implementation of the ERAS program in the context of a multidisciplinary team is a complex process, which requires significant dedication and education by both the patient and professionals involved. The implementation of a strategy based on the KTA Cycle is useful for its implementation and maintenance.

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P139

Eras program and minimally invasive surgery (MIS). Evidence of a good friendship

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Aim: The evaluation of potential benefits of ERAS program in combination with laparoscopic and robotic surgery.
Method: A prospective observational cohort study was conducted, including 300 consecutive patients undergoing scheduled colon and rectal surgery between 2013 and 2016.150 patients were analyzed prospectively in the ERAS group using a historic cohort as a control group. A multivariate analysis was performed, adjusted for age, sex, Charlson, and type of surgery. To calculate the sample size, hospital stay and postoperative complications were used as a primary outcome.
Results: Groups we comparable in terms of main characteristics. Mean age were 67 years. Postoperative complications were decreased from 46% in the Traditional Care group to 28% in the ERAS ($P < 0.05$) Both general and surgical complications were reduced, as well as hospital stay (HS). The type of surgery was evidenced as an independent predictor of postoperative complications and mean hs. Compared to open surgery, postoperative complications improve a 50% with robotic approach and 40% with laparoscopy. Median hs was reduced by 3 days after robotic and laparoscopic surgery
Conclusion: The association of ERAS and MIS reveals a decrease in global postoperative complications, as well as mean HS, compared with standard care associated with open surgery. The combination of both factors reveals better results than independently.

P140

Quality of care survey within the ERAS program after colorectal surgery and home hospitalization care (HHC)

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Aim: Evaluate the opinions and degree of satisfaction of the patients included in an ERAS program after colorectal surgery.
Method: A prospective observational study between May 2016- December 2017. A telephone survey was carried out using a questionnaire developed by a multidisciplinary team, to patients who followed the ERAS program after colorectal surgery and home hospitalization care. The survey includes 5 parts which collect information from outpatient clinic to hospital discharge. The questionnaire includes 22 closed-ended questions to evaluate the degree of satisfaction with a Likert scale of 5 categories (a lot/enough/normal/little/nothing).
Results: 100 surveys were analyzed. No patient would have preferred to be admitted to the hospital before being discharged with HD. During their stay in HD 83% did not present any pain. The waiting time until the first visit of the HD team did not seem excessive to any of the patients.100% of the patients surveyed were very satisfied with the level of competence as well as team coordination.
Conclusion: The role of the survey within these programs can be used as an improvement tool by the multidisciplinary teams, within the early discharge programs as part of the empowerment of the patient during the process.

P141

Is reoperation for Hartmann's reversal after failure of previous colorectal or coloanal anastomosis reasonable ? An analysis of 43 consecutive procedures

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Aim: To assess the feasibility and results of Hartmann's reversal procedure (HR) after failure of previous colorectal or coloanal anastomosis.
Method: From 1998 to 2017, 43 HR were performed after failed stapled colorectal ($n = 39$, 91%) or manual coloanal ($n = 4$, 9%) anastomosis performed for cancer ($n = 21$, 49%), diverticulitis ($n = 18$, 42%), or other reason ($n = 4$, 9%).
Results: HR was not feasible in 2/43 (5%) patients. HR was performed in 41/43 (95%) with new colorectal ($n = 23$), coloanal ($n = 16$, including delayed colonic pull-through anastomosis in 10 patients), or ileal pouch-anal ($n = 2$) anastomosis. Severe postoperative morbidity (Dindo 3–5) was observed in 19% (8/41) including 1 death (2%). Anastomotic leakage occurred in 11/41 (26%) patients. After a mean follow-up of 33 months (1–105), bowel continuity was restored in 32/43 cases (74%). By multivariate analysis, age ≥ 75 (Odds-Ratio: 0.122 [0.016–0.900]; $P = 0.039$) and remnant rectal stump's length < 7 cm (OR: 0.146 (0.026–0.822)]; $P = 0.029$) were identified as independent risk factors for HR failure.
Conclusion: HR following failed previous pelvic anastomosis is feasible and allowed 74% of the patients to be free of stoma at the end of follow up. Age ≥ 75 years and rectal stump < 7 cm are independent risk factors for HR failure.

P142

Comparative study of the closure technique of loop ileostomy in our center in a series of 157 patients in for 4 consecutive years

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Aim: Compare two kinds of ileostomy closure techniques in consecutive patients operated at our center.
Method: A retrospective comparative study was carried out between two groups of patients in terms of the loop ileostomy closure technique (mechanical versus, end-to-end hand-sew anastomosis), operated between 2014 and 2017, within an ERAS protocol
Results: 157 patients were analyzed between January 2014 and December 2017. 51 of them underwent mechanical anastomosis and 106 underwent an end-to-end hand-sew anastomosis. The groups were statistically comparable. Surgical time was higher in the mechanical anastomosis group (71.6 vs 58.02, $P = 0.002$), a higher percentage of intraoperative complications was detected. Patients in the end-to-end group had bowel transit before mechanical anastomosis group (3.98 d vs 2.83 d, $P = 0.035$), the mean stay was greater in the LL group (6.3 vs 5.12, $P = 0.009$)the leakage rate (9.8% vs 5.6%), surgical wound infection (19.6% vs 7.54%)and postoperative ileus (27.45% vs 1.8%)were higher in the LL anastomosis group (the latter being statistically significant).
Conclusion: Less surgical manipulation associated to the hand-sew anastomosis might lead to an improvement of the postoperative results in terms of complication rate and restoration of the earliest bowel function.

P143

Diagnostic profitability of colonoscopy to rule out colon cancer after an episode of acute diverticulitis

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Aim: Analyze the rate of hidden colon neoplasms after the diagnosis of acute diverticulitis (AD). Analyzing demographic and clinical characteristics that allowed the identification of risk groups.
Method: Retrospective analysis of patients diagnosed with AD between 2012–2017. Variables analyzed included demographic and clinical data. Statistical analysis was performed using Chi-square for qualitative variables and Student's T-test for quantitative variables. We define as complicated diverticulitis Hinchey II or higher, pneumoperitoneum, 30-day re-admission or refractory to treatment.
Results: A total of 200 patients, 101 men, with a mean age of 60.47 years (22–97) are included. Diagnosis is diverticulitis Hinchey Ia 69%, Ib 11.5% IIa 11% (22), IIb 4.5% (9), 7 patients (3.5%) Hinchey III and 1 IV (0.5%). There were 147 colonoscopies (73.5%) diagnosing 6 neoplasms (3%). Complicated diverticulitis were more likely to be hiding a neoplasia, finding 5/6 neoplasms in the complicated group ($P < 0.05$). Those patients with suspected neoplasia at CT-scan (yes / no) 20/126 confirmed the diagnosis by colonoscopy in 5/20 cases ($P < 0.05$).
Conclusion: Despite the low rate of occult neoplasms after previous AD, colonoscopy is still necessary as it is impossible to identify and stratify risk groups based on clinical characteristics or analytical data during the index episode.

P144

What is the outcome of a postoperative drainage for low colorectal or colo-anal anastomosis leakages? A prospective cohort of 43 patients

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Aim: evaluate the efficiency of drainage and the risk of definitive stoma (DS).
Method: Patients operated with creation of a low anastomosis and diverting stoma between 2014–2017 were prospectively included. Patients who needed a radiologic transgluteal drainage (RTD) or a surgical transanal drainage (STD) for leakage were analyzed.
Results: 305 low anastomoses were created: 272 (88%) anterior resection and 33 (12%) redo-surgery. Among the 70 anastomosis leakages (22.9%), 43 (61.4%) had a drainage (RTD = 24 (56%), STD = 19, (44%)). Median between surgery and

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drainage was 15.5 days [11–32]. 15 patients (35%) needed a second drainage. The mean hospital stay was 27.2 ± 12 days. At the end of follow-up (20 ± 10 months), 11 patients (26%) had a DS. Rate was significantly lower in the rectal cancer group (16%) than after redo-surgery (100%), $P < 0.001$.After anterior resection ($n = 38$), there was a tendency for DS for male (22% *vs* 7%, $P = 0.2$), side-to-end anastomosis (25% *vs* 7%, $P = 0.16$) or duration of drainage >10 days (27% *vs* 6%, $P = 0.07$). Neoadjuvant treatment, timing of drainage had no influence on the rate of DS.
Conclusion: After drainage of low anastomosis leakage, the rate of DS is 26%. Redosurgery, male and long duration of drainage increase this risk.

P145
Development and delivery of a standardized investigator training package for a multicentre interventional trial across low, middle and high income settings

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Aim: The FALCON trial is a pragmatic multicentre factorial randomized controlled trial testing measures to reduce surgical site infection in low, middle, and high income countries. This paper describes the development and delivery of a standardized investigator training package across these settings.
Method: Stakeholders were identified and engaged to build the package through a nominal group consensus process. Essential components to the training package were pre-defined.
Results: The essential pre-defined components identified were (1) low time burden, (2) ability to be delivered through an online learning environment, (3) in-built train the trainers for delivery to local networks. Four key components were developed and standardized for inclusion in a half-day package. The first 50 participants were trained using two online modules and two face to face modules at an international meeting. The training package is deliverable and trackable online through a Moodle platform.
Conclusion: This four stage training package for delivery of a major, multicentre randomized trial is accessible and deliverable to frontline collaborators in global surgery settings.

P146
Laparoscopic colorectal surgery and Enhanced Recovery After Surgery (ERAS) in the elderly

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Aim: ERAS reduces post-operative morbidity and length of stay after colorectal surgery. Nevertheless, it is debated whether elderly patients could safely benefit from fast-track protocols.
Method: Data from 263 patients undergoing laparoscopic colorectal resection were analyzed to assess adherence to ERAS items and surgical outcomes. Results were compared between three age groups to assess safety and efficacy of our ERAS protocol.
Results: 184 patients were enrolled in the ERAS protocol from March 2014–2017. Study population was divided in three groups (≤65, 66–74 and ≥75 y.o.). No mortality was observed. Length of stay was similar in the three groups. Need for redo surgery and readmission rate were low. Although 30 day morbidity rate was higher in ≥75 y.o group (40%), no differences were found in major complications rate, post-operative ileus and anastomotic leak. Adherence to postoperative ERAS items was good in the three groups although elderly patients showed a delayed resumption of walking and oral fluid intake.
Conclusion: ERAS protocol can be successfully and safely applied in the elderly without need for a tailored protocol. Fast track in patients ≥ 65 y.o. can reduce morbidity and length of stay although elderly patients may require longer to achieve discharge goals.

P147
3D modelling of pelvic anatomy for colorectal cancer staging and dynamic function simulation

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Aim: Imaging modalities aid in diagnosis, function assessment, gauging response to treatment and assisting in surgery. Findings on MRI confer major implications for diagnosis and management including surgical planning, prediction of adverse surgical outcomes, selecting patients for neoadjuvant therapy and eligibility for surgery. However, accurate interpretation of 2D MRI requires specialist training.
Method: Building high fidelity 3D models of male and female pelvic anatomy, and pelvic compartments from MRI scans, for surgical planning, pre-operative staging, simulation of dynamic function of pelvic floor structures, patient interaction and medical education
Results: We have established rigorous, reproducible segmentation criteria for carefully delineating and building the 3D models, using our methodology to generate 3D models of control (5 male / 5 female) pelvic MRIs.
Conclusion: 3D models offer a true-size, detailed representation making pre-operative planning more direct and accurate. 3D models can be used as an additional tool in the surgical planning for organ preservation where fibrosis or disease post chemoradiotherapy can't be adequately estimated with current MRI models. They may also improve surgical efficacy and safety through intra-operative augmented reality and can support the simulation of pelvic organs and their function, with the potential for clinical, educational and engagement applications in the future.

P148
An audit of the use of mechanical bowel preparation in combination with oral antibiotics for elective colorectal resection

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Aim: To evaluate current practice regarding use of mechanical bowel preparation in combination with oral antibiotics for elective colorectal resection and audit against National Institute of Clinical Excellence (NICE), UK and Up To Date guidelines.
Method: We developed an online survey to evaluate current practice regarding bowel preparation and co-administration of oral antibiotics prior to elective colorectal resections in Europe. NICE guidelines recommend not using mechanical bowel preparation nor oral antibiotics. Up To Date recommend use of bowel preparation combined with oral antibiotics. We audited this practice against NICE guidelines and Up To Date recommendations.
Results: We obtained 78 responses from 57 hospitals in 23 countries. Respondents included colorectal consultants and senior colorectal trainees. The 24.5% of the cohort reported using neither, 17.3% reported using mechanical bowel preparation with oral antibiotics, 48.2% used mechanical bowel preparation alone and 10% of respondents replied "other". The 29% compliance across the UK with NICE guidelines. 17.3% compliance across Europe with Up To Date recommendations. In the UK, 77% reported their practice was based upon "personal experience/opinion" compared to 11% in Europe who more commonly based practice on guidelines/evidence.
Conclusion: No consensus has been reached and practice remains varied- across the UK and Europe.

P149
Individualised prediction of prehabilitation window before colorectal cancer resection using artificial neural networks

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Aim: Cancer pathway targets mandate prompt treatment although practicalities often mean time to surgery varies. Prehabilitation is gaining interest but must fit within these targets. If individualized surgical waits were known, tailored prehabilitation is possible but currently there is no predictive system.
Method: A dedicated, prospectively populated elective laparoscopic surgery for colorectal cancer with curative intent database was utilized. Primary endpoint was the prediction of the individualized waiting time for surgery. A multi-layered perceptron artificial neural network (ANN) model was trained and tested alongside uni and multivariate analyses.
Results: 668 consecutive patients were included. 8.5% underwent neoadjuvant chemoradiotherapy. Mean time from diagnosis to surgery was 53 days (95% CI 48.3–57.8). ANN correctly identified those having surgery in <8 (97.7% and 98.8%) and <12 weeks (97.1% and 98.8%) of the training and testing cohorts respectively. Area under the curve was 0.793 and 0.865. After neoadjuvant treatment, ASA score was the most important modifiable risk factor for prolonged waits (normalized importance 64%, OR 4.9 95%CI 1.5–16). Uni and multivariate analyses were concordant with ANN findings.
Conclusion: Artificial neural networks using demographic and diagnosis data successfully predicts individual time to surgery. This could assist the personalization of pre-operative care including prehabilitation interventions.

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P150
Peculiarities of recovery surgeries in patients with colon injuries across the war conflict in Ukraine

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Aim: According to experience of conducting antiterrorist operation in eastern Ukraine, damage of the pelvis is 2.7%, the abdominal cavity – 7%. More than 1/3 of abdominal injuries are damaging abdominal organs, including colon, with high mortality level (from 13 to 75%). The stoma creation is a lifesaving procedure when the colon is damaged. To determine peculiarities of recovery surgeries in patients with colon injuries.
Method: This prospective study included 33 patients with recovery surgeries from 2014 to 2018: 16 with loop stoma, 17 – end stoma. Patients' average age: 34 years, males only.
Results: Estimated time before stoma recovery was at least 6 months and more, which depended on concomitant disorders: colitis diversion (26 patients), bowel fistula (3 patients) and stenosis (1 patient), fecal incontinence (21 patients). The mandatory examinations before surgeries were: rectoromanoscopy/colonoscopy, irrigoscopy, sphincterometry. CT or MRI scan, fistolography – if necessary. Among early complications after surgeries we found wound inflammation (4 patients) and wound hemorrhages (2 patients). For prevention anastomosis leak (2 patients with end stoma) we reduced manifestations stoma-related disorders and necessarily used abdominal cavity's drainage.
Conclusion: Stoma recovery plays key role in medical and social rehabilitation of injured patients and needs individual approach in each case.

P151
Non-operatively treated appendicitis; the need for interval appendectomy and risk of neoplasms

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Aim: To determine the rate of and indications for interval appendectomies (IA) following non-operatively (NO) treated acute appendicitis (AA) and to identify the incidence of appendicular neoplasms.
Method: Single-center retrospective cohort study (January 2008 and June 2017). Primary outcome was the IA rate in initially NO treated AA. Secondary outcomes were outcome of additional imaging, surgical indications and incidence of neoplasms in IA.
Results: 1839 adult patients were diagnosed with AA and 9% (170/1839) were treated NO. In 37.6% (64/170) an IA was performed and most frequent indication was recurrent appendicitis in 45% (29/64). 11% (7/64) had a neoplasm, significantly higher than 1.5% (25/1669) in immediately operated patients ($P < 0.001$). Five patients had additional radiological imaging during follow-up and in four an appendix suspicious for neoplasm was seen. During follow-up, there was no suspicion for appendicular neoplasm or other colon malignancy in merely NO treated patients.
Conclusion: We demonstrated an IA rate of 37.6% following initially NO treated AA. The incidence of neoplasms is higher in IA, compared to the incidence in acute appendectomies. Additional radiological imaging following NO treatment is mandatory in patients who lack persistent pain or recurrent appendicitis, because of a high chance of the presence of neoplasm.

P152
Discrepancies between intraoperative and histological evaluation of the appendix in acute appendicitis

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Aim: To identify discrepancies between the surgeon's intraoperative evaluation (IE) and the pathologist's histological evaluation (HE) of the appendix in acute appendicitis (AA), and to evaluate the effect on surgical outcome and postoperative complications.
Method: In the snapshot research study (2014), appendicitis was scored uncomplicated (UA) or complicated (CA) during IE. Primary outcome was the percentage of concordance between IE and HE. The short-term postoperative course was analyzed.
Results: 1850 patients were included and in 65.7% (1215/1850) the IE was UA. These patients had a postoperative course with significantly less complications and a lower re-admission and re-intervention rate than intraoperative CA ($P < 0.001$). In 93.5% (1136/1215) of intraoperative UA and in 46.6% (296/635) of intraoperative CA, the pathologist agreed on diagnosis. In 23.9% (81/339) of the patients with intraoperative CA and histological UA a postoperative complication was observed, significantly higher than in 8.9% (7/79) of the patients with intraoperative UA and histological CA ($P = 0.003$).
Conclusion: There is a moderate agreement between surgeon and pathologist in diagnosing CA. IE of the appendix is more accurate in predicting outcome in patients with CA than HE. Routine HE is not helpful in predicting a complicated postoperative course and should be preserved for excluding malignancies.

P153
Comparison between biologic mesh and current management of the open abdomen in non-trauma emergency patients

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Aim: To investigate whether direct closure with a non-crosslinked biologic mesh is a potential new strategy in managing the open abdomen (OA) in non-trauma patients undergoing emergency laparotomy.
Method: Prospective comparative cohort study. In one cohort, BIOMESH ($n = 20$), the abdominal cavity was closed with a non-crosslinked biological mesh; in a parallel cohort, CONTROL ($n = 20$), the OA was managed by covering it with an inlay polyglactin mesh or using Bather™ negative pressure therapy. The primary endpoint was the occurrence of a major complication within 90 days.
Results: In the BIOMESH-cohort, 35% had at least one major complication, compared to 75% in the CONTROL-cohort ($P = 0.011$). The median number of ICU and mechanical ventilation days was lower in the BIOMESH-cohort (1 *vs* 10 ($P = 0.002$) and 0 *vs* 4 ($P = 0.003$), respectively). The number of abdominal re-operations was lower in the BIOMESH-cohort (total number 5 *vs* 44). At 90 days, 65% of the abdominal cavities in the BIOMESH-cohort were closed, compared to 45% in the CONTROL-cohort ($P = 0.204$).
Conclusion: If primary fascial closure cannot be achieved, abdominal closure using a non-crosslinked biomesh results in fewer major complications, shorter ICU-admission and fewer reoperations compared to OA management with absorbable synthetic mesh or abdominal negative pressure therapy.

P154
Continuous versus intermittent vital signs monitoring in patients admitted to surgical wards: a cluster-randomised, controlled trial

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Aim: The aim of this study was to evaluate whether continuous remote vital signs monitoring is a practical, acceptable and effective way of monitoring surgical patients outside the critical care setting.
Method: A prospective, cluster-randomised, parallel-group, controlled study was performed. Patients admitted to two surgical wards at a tertiary hospital received either continuous and intermittent vital signs monitoring, or intermittent monitoring alone. The primary endpoint was time to administration of antibiotics in sepsis. Secondary endpoints included length of hospital stay, 30-day readmission rate and patient acceptability.
Results: 350 patients were recruited between January and June 2017. 140 patients received continuous remote monitoring; 210 received intermittent monitoring alone. On average, patients receiving continuous monitoring were administered antibiotics faster after evidence of sepsis, had a shorter length of stay and were less likely to require readmission. Wide confidence intervals suggest these differences are not statistically significant. Patients found the monitoring device to be acceptable in terms of comfort and perception of safety.
Conclusion: Remote continuous vital signs monitoring on surgical wards is practical and acceptable to patients. Large, well-controlled studies in high-risk populations are required to determine if the observed trends translate into a significant benefit for continuous over intermittent monitoring.

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P156
Variation in landmarks for the rectum: an MRI study

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P157
A novel view on the variant anatomy of the inferior mesenteric artery

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Aim: To determine an optimal description of inferior mesenteric artery (IMA) variant anatomy for usage in performing extended lymph node dissection in left colon and rectal cancer surgery
Method: Data from 150 colorectal cancer patients were included in this study; and abdominal CT-scans were analyzed before operation.
Result: Some 5 types of vascular division are proposed for use it in clinical practice. This is especially important when the safe lymph node dissection along the IMA is necessary

I type – several colonic branches derivate from the IMA by independent trunks (64%).

IIa – colon branches depart proximally from the one point of the IMA in one point like a "goose paw"; other branches bifurcate lower the IMA (4%).

IIb – several branches deviate from the IMA, another departs lower in one point like a "goose paw" (1%).

III- all colon branches derivate from the IMA in one point like a "goose paw" (12%).

IV – one colon branch departs from the IMA by a single trunk; then it divides into colonic branches (19%).
Conclusion: CT with 3D-reconstruction of vessels allows the surgeon to perform an extended LND for colorectal cancer with a minimal risk of complications.

P158
Routine follow up endoscopy in CT proven acute sigmoid diverticulitis: is endoscopic assessment necessary in the era of high resolution imaging?

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Aim: Routine follow up endoscopic inspection following acute sigmoid diverticulitis (AD) is recommended by most international guidelines. The low yield from routine endoscopic assessment in patients following AD brings a degree of uncertainty over its diagnostic value. Based at a tertiary colorectal centre, we aimed to investigate the diagnostic value of follow up endoscopy in patients with CT proven AD.
Method: All patients admitted as an emergency with CT proven AD treated without surgical intervention from (January 2015-January 2017) were included. The results of imaging and subsequent endoscopy were reviewed and analysed.
Results: 254 patients were identified (53.9% female, mean age of 62.4). Follow up endoscopy was arranged for 209 (82.3%) patients of whom 183 (87.6%) attended for endoscopy. 138 patients (75.4%) underwent colonoscopy whilst the other 45 (24.6%) underwent a flexible sigmoidoscopy. Two patients (1.1%) had colorectal cancer detected. Colonic polyps were found in 25.6% of patients ($n = 47$). Amongst the patients undergoing colonoscopy 37 patients (26.8%) had colonic polyps of which 9 (6.5%) had polyps proximal to the splenic flexure
Conclusion: Routine follow up endoscopy is merited, with flexible sigmoidoscopy likely to be sufficient, given that most patients will also enter the Bowel Cancer Screening Programme.

P159
Avoiding ileocolic vessel injury in the second stage of a three-stage ileal pouch anal anastomosis: an observational study

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P160
Overlap repair of isolated internal anal sphincter injury: success and failure

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P161
Concomitant colorectal cancer with aortic and bilateral iliac aneurysms – a rare surgical dilemma

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Aim: In this study we present a patient who at 80 years of age had concomitant aortic and iliac aneurysms in addition to colorectal cancer. We present the measures taken to optimise patient safety whilst ensuring both pathologies were treated effectively.
Method: An 80-year-old male was found to have incidental bilateral iliac aneurysms on a CT abdomen pelvis, measuring 4.5 and 3.5 cm in the left and right iliac vessels, respectively. After a vascular multidisciplinary team (MDT) meeting a decision was made first to resect the upper rectal tumour prior to endovascular repair (EVAR).
Results: A laparoscopic Hartmann's procedure for an upper rectal tumour was performed successfully. Postoperatively the patient made a good recovery and is due for coil pre-emoblisation of the left iliac aneurysm followed by a main stenting operation.
Conclusion: The presence of the dual pathologies poses significant surgical challenges. A strong case can be presented to treat the aneurysms first for risk of potential aneurysmal rupture that could be catastrophic for the patient. On the contrary, this has to be weighed against the delay of CRC removal and thereby the delay of adjuvant therapy, which may ultimately facilitate disease progression.

P162
Sublay overlapping split mesh (SOSM) incisional hernia repair

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Aim: The optimal technique for repair of a large incisional hernia is open repair with sublay mesh placement and fascial closure. Mesh placement is awkward due to limited space available, risking injuries, inadequate fixation, mesh laxity and does not optimally assist final fascial closure. Dividing the mesh and securing laterally with transfascial sutures prior to overlapping in the midline and suturing with the fascial closure eliminates these issues. This method distributes tension through the mesh during final fascial closure to assist closing larger defects.
Method: We present illustrated step-wise technical aspects of SOSM and report outcomes of large incisional hernia repairs using SOSM from a prospectively maintained database.
Results: 21 patients had SOSM repair from 2014–2018. Mean age was 59.3. Average hernia diameter was 13.6 cm (6–30 cm). 14.3% had planned bowel resection/closure. Fascial closure was achieved in 20 patients. 47.6% of the patients had lateral release. Median length of hospital stay is 6 days. Median follow up is 27 months with no incidences of hernia recurrence. 42.9% developed post op complications ($n = 8$ Grade I Clavien Dindo, $n = 1$ Grade IIIb Clavien Dindo).
Conclusion: SOSM incisional hernia repair shows a low incidence of complications and long-term recurrence.

P163
A comparison of the anastomotic leak rate following end-side hand sewn (ESHS) versus stapled functional end anastomosis (SFE) with laparoscopic right hemicolectomy

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Aim: Historically, right hemicolectomy has been associated with low morbidity and mortality. Laparoscopic right hemicolectomy has a reported morbidity with equivalent anastomotic leak rates and disease-free survival to open surgery. In this investigation we compare outcomes of two different anastomotic techniques following laparoscopic right colon cancer surgery
Method: Anastomotic leak was analysed retrospectively as the primary end point from a prospectively collated database of a single consultant colorectal surgeon's practice over a 10-year period. Analysis was done using SPSS V24 Chi-square test. All patients undergoing laparoscopic right hemicolectomy for colorectal neoplasia

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were included. Patients who had emergency surgery or surgery for non-neoplastic or inflammatory bowel disease were excluded
Results: 112 patients underwent right or extended right hemicolectomy for cancer. 75 (67%) had SFE anastomosis and 37 (33%) had ESHS anastomosis. Mean age was 69.2 years. Laparoscopic right hemicolectomy was performed in 96 patients (86%). An anastomotic leak occurred in 4/75 (5%) in the SFE group and 0/33 in the ESHS group; the.Chi-square test showed no significant difference for anastomotic leak between the groups ($P = 0.153$)
Conclusion: In this investigation we have found a 5% absolute difference in the leak rate between SFE and ESHS anastomosis in laparoscopic right hemicolectomy; although this did not reach significance this may be worth further consideration

P164
A prospective cohort study examining the usefulness of the SEPSIS-3 guidelines in patients undergoing major abdominal surgery

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Aim: To examine the validity of the SEPSIS-3 guidelines in predicting outcome in patients undergoing major abdominal surgery in comparison to SEPSIS-1 guidelines.
Method: This study was nested within the BIONIC study. Patients undergoing major abdominal surgery were enrolled. These encompassed colorectal, upper GI and HPB surgery. Clinical data were collected prospectively (operative details, SOFA score, observation charts etc.). The research team carried out venous blood sampling at set intervals. The EHR, PACS and notes were reviewed for evidence of infection. Statistical analysis was carried out using a regression analysis model.
Results: 80 patients developed SIRS, 42 SEPSIS-1, 106 SEPSIS-3. The median length of stay (LOS) was 10 days. There is a significant difference ($P < 0.05$) in median LOS in patients who developed SEPSIS-1 compared to SEPSIS-3 (16 vs. 11 days). There is a significant difference ($P < 0.05$) in median LOS between patients who developed none of SIRS/SEPSIS-1/SEPSIS-3 and those who developed any of SIRS/SEPSIS-1/SEPSIS-3 (6 vs 12/11/16 days).
Conclusion: Patients from our study who developed SEPSIS-1 spent longer in hospital than patients who developed SEPSIS-3. More discussion is required regarding the usefulness of SEPSIS-3 in surgical patients.

P165
A tailored prehabilitation-ERAS programme improves postoperative outcomes in elderly patients with colorectal cancer

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Aim: Evidence of the benefit of ERAS and prehabilitation in elderly patients is scarce. The aim of this study was to compare postoperative results in patients >70 with colorectal cancer before and after implementation of a personalized ERAS-Prehabilitation programme.
Method: A retrospective cohort study including 2 groups of patients >70 years with colorectal cancer: 2014–2015 (before ERAS) and 2016–2017 (ERAS). Demographic variables, comorbidity, surgery and complications were studied.
Results: 150 patients >70 were treated during the study period (75 before ERAS and 75 ERAS), mean age 77 (65.3% male). Groups were comparable with regards to ASA, Karnofsky, Barthel, medication, type of surgery, tumour stage and location. The ERAS group had a significantly shorter hospital stay (mean 6 days vs 9 days ($P < 0.001$)), with no increase in readmissions. Postoperative ileus (13.3% ERAS vs 29.3% before ERAS, $P = 0.017$), delirium (2.7% vs 20%, $P = 0.002$), wound infection (8% vs 21.3%, $P = 0.02$) and other complications (pneumonia, urinary tract infection, venous thrombosis: 1.3% ERAS vs 22.75 before ERAS, $P < 0.0001$) were significantly lower in the ERAS group.
Conclusion: a tailored prehabilitation-ERAS programme for elderly patients with colorectal cancer can reduce hospital stay and postoperative complications.

P166
Surgical management of deep pelvic endometriosis with involvement of the rectum

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Aim: To describe our experience in the surgical management of deep endometriosis with rectal involvement.
Method: Retrospective study, with review of clinical records of patients treated for deep pelvic endometriosis between 2015 and 2017 jointly by the Gynecology and Coloproctology teams. Patients who had endometriosis in the rectum were recruited, evaluating the type of surgery performed, the presence of post-surgical complications and delayed biopsy.
Results: We identified 20 patients with rectal endometriosis. The median age was 37 years. All surgeries performed were laparoscopic. Of these, 8 were rectal shaving, 7 were discoid resection of the rectal wall and 5 were sigmoidectomies. The only postoperative complication in our series was rectal bleeding, which occurred in 4 of the 20 patients (20%). Bleeding was seen more frequently in discoid resection (3 of the 4 cases). Of the patients who bled, 3 were managed conservatively successfully and one required endoscope clip management. All the biopsies analyzed confirmed the presence of endometriosis foci in the rectal wall.
Conclusion: The management of deep pelvic endometriosis with rectal involvement should be multidisciplinary. Laparoscopic resection techniques are safe with low morbidity.

P167
Robot-assisted sigmoidectomy for diverticular disease

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Aim: Laparoscopic sigmoidectomy for diverticular disease is a challenging procedure affected by high intraoperative complications and conversion rates. The robotic platform could overcome some limitations of conventional laparoscopy. The current study aims to evaluate intraoperative and short-term postoperative results of a consecutive series of patients submitted to robotic sigmoidectomy for diverticular disease.
Method: From December 2015 to December 2017, 37 patients underwent elective robotic sigmoidectomy for diverticular disease. Recurrent diverticulitis classified as Hinchey I and II were indication for surgery in 12 patients (35%) and 15 patients (40%) respectively. In 6 (16%) patients, resection was undertaken for a diverticular stricture, whereas a colo-vesical and colo-vaginal fistula were indication for surgery in 4 patients.
Results: Mean operative time was 241 ± 48 min. No intraoperative complications were registered. The conversion rate was 2.7%. Mean postoperative stay was 6 ± 5 days. The overall 30-day complication rate was 18.9%. Five patients had minor complications (13.5%, Clavien Dindo Grade I-II); anastomotic leak was recorded in 2 patients (5.4%, Clavien-Dindo III).
Conclusion: In our experience, robotic resection for diverticular disease has proved to be feasible and safe, with no intraoperative complications and low conversion rates.

P168
Will the surgeon become independent of the gastroenterologist? Intraoperative evaluation of the colorectal lumen – an innovative and cost-effective method

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Aim: To present an innovative technique for the intraoperative assessment of sigmoid and rectal lumen.
Method: Observational study (2015–2017) of patients undergoing colorectal surgery. In cases where intraoperative intraluminal evaluation was necessary, the following technique was applied: the introduction of a 12 mm laparoscopic trocar through the anal canal without recourse to any other trans-anal port; creation of 12 mm Hg pneumo-rectum; Introduction of laparoscope for visualization of the intestinal lumen. Statistics: Descriptive and frequency analysis.
Results: 352 major colo-rectal surgeries were performed (40.1% left colon and rectum). 8 patients had non-palpable and non-tattooed lesions. The use of this technique allowed us to locate these lesions in 100% of the cases. At the same time, this procedure made it possible to confirm the resection margins in cases of doubt ($n = 3$), to perform a patency test of the colorectal anastomosis ($n = 26$) and to identify the site of colonic perforation ($n = 1$).
Conclusion: This method allows the observation of the colorectal lumen with devices available in any operating theatre and familiar to any surgeon, without the need for a Gastroenterologist during the procedure. According to the authors' knowledge this is the first work to describe this technique.

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P169

A feasibility study of the enhanced recovery program in an Asian population with colorectal cancer

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Aim: To determine the feasibility of the enhanced recovery program within an Asian healthcare setting.
Method: A preliminary pilot study of the enhanced recovery program (ERP) was implemented for 12 months, followed by a 2-year study period. Data were collected prospectively and analysed annually for comparison with previous years. Primary end points were the length of stay and 60-day readmission rates. Secondary end points were the incidence of anastomotic leakage, return to theatre and 90-day postoperative mortality.
Results: The pilot evaluation of ERP enrolled 231 patients for study in 2015. Subsequent enrollment over the 2-year study period included 259 patients in 2016 and 241 in 2017. The median length of stay was 5.5 days in 2015, 5 days in 2016 and 6 days in 2017. The readmission rates were 4.2% in 2015, 2.7% in 2016 and 8% in 2017. Anastomotic leakage rates were 3% in 2015, 2% in 2016 and 4% in 2017. Return to theatre affected 0% in 2015, 4% in 2016 and 3% in 2017. The postoperative mortality was 0.7% in 2015, 0.5% in 2016 and 0.4% in 2017.
Conclusion: The end points of the study indicate that enhanced recovery can be delivered successfully within an Asian context.

P170

Early postoperative endoscopy of colorectal anastomosis for anastomotic pathology: a prospective multicenter study

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Aim: To assess the role of flexible endoscopy in the diagnosis of anastomotic leakage (AL) of the rectum in patients with colorectal anastomosis during the early postoperative period without regard to patient symptomatology.
Method: This study included 124 patients who had undergone rectal resection for rectal cancer with stapled anastomosis.

Endoscopy was performed between the 7th and 10th postoperative day and 1 month postoperatively. For defect morphology assessment, a classification system was created based on four levels of severity.
Results: Postoperative endoscopy revealed 28 (22.6%) patients with acute leakage. Initial endoscopy confirmed AL in 18 patients. Six patients (31.6%) were asymptomatic and 13 (68.4%) were symptomatic. The second endoscopy revealed another 9 (32.1%) leaks (4 [44.5%] asymptomatic and 5 [55.5%] symptomatic). Sixteen (57.1%) patients had grade A leakages, 7 (25.0%) had grade B leakages, and 5 (17.9%) had grade C leakages. Fifteen (55.5%) defects were smaller than $\frac{1}{3}^{rd}$ the circumference, 7 (25.9%) affected ⅓-½ of the circumference, and 5 (18.5%) affected more than ½ of the circumference.
Conclusion: Incorporation of early endoscopy in postoperative management allows rapid diagnosis of AL and allows faster intervention, even in leaks that are clinically silent.

P171

Prioritising research into areas of unmet clinical need relevant to patients undergoing surgery in low and middle-income countries: a modified Delphi process

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Aim: The aim of this study was to establish a process to prioritise research into areas of unmet need relevant to patients undergoing surgery in low and middle-income countries (LMICs).
Method: A modified Delphi process was developed consisting of four iterative rounds which engaged LMIC surgeons and expert methodologists in prioritising research topics relevant to surgery in LMICs. The process included electronic anonymous voting, teleconference discussions, and a 2-day consensus conference.
Results: A total of 210 stakeholders representing 62 countries participated throughout the process. An initial 32 potential topics were identified in the first round and were iteratively refined until a consensus was reached regarding the top 3 priority topics: (1) access to surgery from the community, (2) outcomes of cancer surgery, and (3) perioperative care. Specific research plans to address each of the three topics were developed at the consensus conference.
Conclusion: This process has identified three priority areas for future research within global surgery. Uniquely, this exercise was led by frontline LMIC clinicians, methodologists, patients and other stakeholders from a diverse range of settings.

P172

Outpatient management of acute diverticulitis

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Aim: There is a trend towards outpatient management of patients with diverticulitis. Following the development of a Surgical Ambulatory Care service we implemented a protocol to provide outpatient antibiotic therapy to reduce or avoid admissions in this patient group. Patients without evidence of sepsis or significant comorbidities with good social support were eligible.
Method: A retrospective review of patients presenting acutely with CT proven diverticulitis for 2 months pre and post protocol was performed. Demographics, antibiotic duration, length of stay (LOS), failure of medical therapy and readmissions were recorded.
Results: 13 patients presented pre protocol with 100% admission rate, mean LOS 7 days with total 90 bed days. Two underwent a Hartmann's procedure. Two were readmitted over a 6 month period, with one patient requiring resection.10 patients presented post protocol with a 60% admission rate, mean LOS 3 days and a total of 18 bed days. The 25% of patients were ambulated at admission, with an average of 1 outpatient appointment visit per case. Two readmissions over a 15 day period; of which 1 patient underwent an anterior resection.
Conclusion: Following implementation of the pathway, a total of 72 surgical bed days were saved (excluding readmissions). More data are required to ensure the safety of the pathway.

P173

Ambulatory management of uncomplicated diverticulitis: a systematic review

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Aim: Uncomplicated diverticulitis (UD) is traditionally treated in hospital with antibiotics. However, there is evidence that ambulatory treatment with or without antibiotics is a safe option for selected patients. The Aim of the present review was to assess the evidence on the treatment of UD in an outpatient setting.
Method: A search was performed of MEDLINE, EMBASE, Ovid and Cochrane databases on all studies reporting on ambulatory treatment with or without antibiotics of UD from 1950 until January 2017. The main outcomes were failure of treatment, emergency surgery, readmission to hospital, recurrence and elective surgery. Two authors performed quality assessment and data extraction, independently.
Results: Twenty studies were eligible for analysis, including 2629 patients treated at an outpatient basis. In 10 of those studies including 721 patients, there was an inpatient arm for comparison. The studies were heterogenous as regards to inclusion criteria, outcomes, treatment regimens and length of follow-up. Pooled analysis did not show significant difference in failure of treatment, readmission to hospital, emergency surgery rate, recurrence during follow-up and elective surgery rate between those having ambulatory treatment and those treated in-hospital.
Conclusion: Outpatient management of patients with documented UD seems to be a safe option for selected patients.

P174

C-reactive protein monitoring reduces length of stay of patients undergoing laparoscopic sphincter-saving surgery for rectal cancer. A case-controlled prospective study in 282 patients

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Aim: To assess the impact of C-reactive protein (CRP) monitoring after laparoscopic sphincter-saving surgery for rectal cancer (LRCS).
Method: 97 patients undergoing LRCS between 2016 and 2018 underwent prospectively CRP monitoring on postoperative day (POD) 5 and (if necessary) 7. Patients were discharged the day after the first CRP level <100 mg/L. These patients were matched (according to age, gender, body mass index, neoadjuvant irradiation, and tumor location) to 185 controls, patients who underwent LRCS without postoperative CRP monitoring between 2010 and 2016.
Results: Postoperative 30-day overall morbidity (CRP: 35/97, 36%; controls: 68/184, 37%, $P = 0.885$) and severe morbidity (Dindo 3–4; CRP: 11/97, 11%; controls: 18/184, 10%, $P = 0.840$) rates were similar between groups. Mean length of hospital stay was significantly shorter in CRP group (CRP: 8.3 ± 4.8 day versus controls: 10.2 ± 5.1, $P < 0.001$). Discharge occurred on POD 6 in 55% (53/97) of CRP patients versus 8% (15/182) of controls ($P < 0.001$). Although the unplanned rehospitalisation rate was significantly higher in CRP group (CRP: 13/97, 13% versus controls: 8/184, 4%, $P = 0.006$), this was mainly due to late rehospitalization after POD10 (10/13, 77%).
Conclusion: Postoperative CRP monitoring allows a reduction in hospital stay without increasing morbidity in patients undergoing laparoscopic sphincter-saving surgery for rectal cancer.

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P175
Management of sigmoid volvulus in elderly patients: 10-year systematic review

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Aim: The aim of this study was to review existing literature to evaluate the outcomes of non-surgical and surgical intervention in the management of sigmoid volvulus in elderly patients.
Method: A systematic literature search was undertaken using PubMed, Embase and Medline. The search items included 'Sigmoid volvulus', 'Colectomy', 'Hartmann's', 'Percutaneous Endoscopic Colostomy' and 'Sigmoidoscopy'.
Results: Fifteen retrospective observational studies and 10 case series met the inclusion criteria. A total of 6048 patients with a mean age of 75 had either non-operative management (endoscopic decompression, percutaneous endoscopic colostomy (PEC) and endoscopic sigmoidopexy) or operative management (Hartmann's procedure and sigmoid colectomy with primary anastomosis). The average recurrence rate following decompression alone was 55% (26–87.5%), however success rates were reported at 96%. PEC had a mean morbidity rate of 36.7%, mortality 28.9% and recurrence 15%. Surgical intervention was curative. Elective intervention had better outcomes in comparison to emergency, morbidity 21.8% vs 27.8% and mortality 8.1% vs 14.3% respectively.
Conclusion: If there are no clinical indications for emergency surgery, endoscopic decompression should be attempted first. Following endoscopic decompression we recommend an early elective intervention.

P176
Force-based assessment of tissue manipulation skills in TaTME training

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Aim: We aimed to establish a box trainer model for objective force-based assessment of tissue manipulation skills in TaTME training.
Method: A box trainer equipped with state-of-the-art force-based measurement systems (ForceSense, Medishield B.V., Delft) was used to measure the performance of novices and experts during a simulated TaTME procedure. An additional portal sensor was used to measure the size and direction of the force/torque acting on the portal device and the force acting on the purse string suture. The novices were measured during the pre- and post-task of the TATME training event. The experts supervising the training course were measured at the end of the event.
Results: Ten out of fourteen force parameters for tissue manipulation assessment showed lower outcomes after training ($P < 0.05$). Five of them showed discriminating power between novices and experts ($P < 0.01$).
Discussion: A box trainer capable of measuring force profiles at the portal site and suture location was developed. Parameters used to describe effects in the recorded force metrics showed discriminating power between surgeons with different levels of experience. Objective assessment of technical skills in TaTME training was obtained.

P177
An evaluation of the prevalence and factors associated with the development of a "complex" surgical abdomen in a cohort of patients presenting to a national intestinal failure centre for home parenteral nutrition

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Aim: Patients with chronic intestinal failure (IF) are likely to need 'complex' abdominal surgery. We aimed to determine the prevalence of incisional hernia (IH) and enterocutaneous fistula/s (ECF) and identify factors associated with their development.
Method: Our prospectively maintained database of patients on home parenteral nutrition was evaluated, from 2011–2016. A retrospective case note review was undertaken. Risk factors were identified using regression analysis.
Results: A Database search identified 447 patients, 349 (78.1%) had surgery prior to developing IF. Eighty-one (23.2%) had an IH and 123 (35.2%) had an ECF at the time of referral. Of these, 51 (14.6%) had both IH and ECF. IH was associated with high BMI ($P = 0.05$), IF aetiology of surgical complications ($P = 0.01$), previous emergency surgery ($P = 0.04$), increasing number of operations ($P = 0.02$) and surgical site infection (SSI) ($P = 0.01$). ECF was associated with IF aetiology of surgical complications ($P < =0.001$), multiple operations within 6 months ($P = 0.01$), previous laparostomy ($P = 0.03$), SSI ($P = 0.001$), intra-abdominal collection ($P = <0.001$) and anastomotic leak ($P = 0.02$).
Conclusion: In patients with IF the prevalence of IH is double that expected following laparotomy. Key factors appear to be associated with the need for complex abdominal surgery and reduction of these risks could minimise the development of IH and ECF.

P178
Is CT imaging useful in the evaluation of the abdominal wall prior to contaminated complex abdominal wall reconstruction?

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Aim: Limited evidence suggests CT imaging can predict outcome in contaminated abdominal wall reconstruction (CAWR). This study aims to validate CT derived measurements and evaluate their predictive value in assessing patients prior to CAWR.
Method: Consecutive patients undergoing CAWR, with valid CT images, between 2010 and 2015 at two National Intestinal Failure Centres were identified retrospectively. A range of measurements were evaluated using inter-class correlation coefficient (ICC). Factors were evaluated using regression analysis.
Results: 105 patients were identified with a scan that met the inclusion criteria. The mean age was 60.39 (SD13.35); 61 (58%) were male. Twenty-seven (26%) hernia recurrences occurred over a median follow-up of 24 months (IQR9-40).

Multi-variate analysis revealed higher defect percentage to be associated with use of bridging mesh (OR 1.24; 95%CI 1.06–1.45; $P = 0.007$). Hernia recurrence was associated with reduced lateral abdominal wall muscle thickness (OR 0.84; 95%CI 0.74–0.96; $P = 0.01$) and higher defect percentage (OR 1.16; 95%CI 1.00–1.35; $P = 0.05$). Further analysis revealed a defect percentage of greater than 11 was associated with both outcomes.
Conclusion: Factors associated with poorer short- and long-term outcomes include: larger defect percentage and poorer quality lateral abdominal muscle. A defect percentage of greater than 11 is most likely to predict poor outcome.

P179
Can Interferon-γ (IFNγ) improve immune dysfunction in surgical or trauma patients? A systematic literature review

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Aim: To assess the potential efficacy of IFNγ in reducing infection-related morbidity and mortality and facilitate recovery in surgical or trauma patients.
Method: All studies reporting on the use of IFNγ in patients who underwent surgery or experienced trauma were identified by systematically searching all major databases (i.e. Pubmed, Medline). Search terms included "interferon", "surgery trauma" and "infection".
Results: Nine clinical studies with 1134 patients who either had surgery or experienced severe trauma were analyzed. Studies were of varying methodological quality and were heterogeneous in terms of patient selection and primary outcome. The largest study with 416 severely injured patients reported similar overall infection morbidity between interferon and placebo (43% vs 40%) but infection-related mortality was significantly lower (3% versus 18%, $P = 0.008$). Other studies did not replicate these findings and no association was established between infectious complications and any improvement in the immune deficit.
Conclusion: IFNγ may have the potential to reduce infectious morbidity and mortality in surgical or trauma patients. There is a need, however, for well-designed randomized controlled trials in selective patients, particularly those who are "immune-paralysed" in order to establish whether it has any therapeutic value as an immune response modulator.

P180
Surgical management of immune-mediated colitis: a case series

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Aim: Immune-mediated colitis is an emerging problem with the use of immune checkpoint inhibitors for treatment of metastatic melanoma. The role for surgery in medically refractory patients is unclear. We present a case series of patients who underwent surgical intervention for immune-mediated colitis.
Method: The electronic records were reviewed for four patients at our centre who underwent surgery for immune-mediated colitis from January 2017 to April 2018.
Results: Three patients underwent surgery for medically refractory colitis; one required surgery for complicated colitis with perforation. Two cases were performed

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laparoscopically. The median time from commencement of immunotherapy to development of colitis was 67 days. The median timing of surgery from commencement of corticosteroids and infliximab was 34 and 22 days respectively. Three patients were discharged with clinical resolution of immune-related gastrointestinal symptoms. One patient developed medically refractory progressive retrograde immune-related enteritis post colectomy – a novel condition not previously encountered at our institution.

Conclusion: There is a paucity of literature to guide the role for surgery in medically refractory immune-mediated colitis. Our case series demonstrates that a successful resolution of colitis is possible with surgical intervention. However, more evidence is required to identify those that would benefit from surgery and the optimal timing of such intervention

P181

Incidence of and survival following diverticular abscess: A population-based cohort study from England

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Aim: We aimed to provide population-based estimates of the incidence of diverticular abscess and assess variation by age, calendar time, treatment and sex.

Method: A historical cohort study using linked primary and secondary care data from 2000–2013 from England. We calculated incidence rates, and modelled variation using Poisson regression along with estimating 1-year survival with life tables.

Results: We identified 622 cases with an incidence of 1.9 per 100 000 person years (pyrs) (interquartile range (IQR) 1.7–2.0 per 100 000 pyrs). Over the time period of the study there was a 1.5 fold increase in the incidence of diverticular abscess (adjusted IRR 1.5, 95% CI 1.0–2.5). This increase was seen in conjunction with an increased use of diagnostic imaging with 92.2% having a CT in 2013 compared to 60% in 2007 ($P = 0.003$). One-year survival was 80.1% (95% CI, 76.7–83.1%) and was lowest in those undergoing surgery 68.7%% (95% CI 60.3–75.7%).

Conclusion: There has been a 1.5 fold increase in the incidence of diverticular abscess from 2000 to 2013. The condition is associated with a poor 90-day survival especially following surgery. This increase in incidence may in part be due to improved identification due to an increased use of imaging.

P182

PERioperative Fluid management in Elective ColecTomy (PERFECT) – a national snapshot audit

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Aim: This study sought to audit perioperative fluid management in elective colectomy in Ireland and to analyse the impact of such on operative outcomes.

Method: A national surgical trainee collaborative was undertaken. Individual site data were prospectively collected over a selected 3-week period within a pre-defined 2-month block. Collected variables included: demographics, type of operation/anaesthethic, volume/type of fluid administration pre-, intra- and post-operatively, 30D morbidity and mortality. Primary outcome was fluid balance 24 hrs post-op with further analysis to examine impact on 30D morbidity.

Results: Ninety-four patents were enrolled from seventeen hospitals. Their mean age was 64 years. 48.9%(N = 46) were managed by ERAS and 50%(N = 47) received bowel preparation. Most procedures were laparoscopic [69% ($N = 65$)], a 10% conversion rate was observed. Median fluid balance at 24 hrs was +715 mls (IQR165–1486 mls). On multivariate analysis, high BMI ($P = 0.02$), indication for surgery ($P = 0.02$) and critical care admission ($P = 0.008$) were significantly predictive of 30D morbidity. While overall fluid balance was not significant, a critical cut-off of >+665 mls fluid balance at 24 hr post-op was associated with increased risk of 30D morbidity.

Conclusion: Overall, perioperative fluid management was within an acceptable range with minimal impact on 30D morbidity in current practice.

P183

Early diagnosis of pelvic abscess after Hartmann's operation for rectal cancer with CRP postoperative day 2, 3 and 5?

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Aim: Leakage in the anorectal stump after Hartmann's operation for rectal cancer (HA) often leads to pelvic abscess. The purpose was to assess CRP on postoperative day 2, 3 and 5 (POD-2, 3 & 5) in patients who underwent HA and developed pelvic abscess (abscess+) or (abscess-).

Method: All consecutive patients who underwent HA at one colorectal unit during 2007–2017 were assessed with regard to demography, perioperative variables and postoperative CRP on POD- 2,3, 5.

Results: Median age was 78, 35% were female, tumor height 10 cm, BMI 25, and 58% had received preoperative radiation. Altogether 66 patients were included, abscess- ($n = 59$) and abscess+ ($n = 7$). Median height of stapler line was 5 cm (3–11) and median day for diagnosis of the pelvic abscess was POD 8 (3–16). Treatment for abscess+ was laparotomy ($n = 5$) and radiologic drainage ($n = 2$). CRP for abscess- on POD-2, 3&5 was 112, 121 and 62, and for abscess+ 198, 253 and 89 (not significant).

Conclusion: CRP values on POD-2, 3&5 were numerically but not significantly increased in abscess+ but the interpretation is difficult due to the range of day of diagnosis of the pelvic abscess and the limited number of patients.

P184

Indications and outcomes of interventional radiology in relation to aetiology of per rectal bleeding

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Aim: To determine patient characteristics and outcomes of endovascular intervention for severe lower gastro intestinal bleeding (LGIB)

Method: A retrospective cohort study was conducted of 1034 patients presenting with gastrointestinal bleeding, 524 of which had LGIB. 110 patients with LGIB received Computed Tomography Mesenteric Angiogram (CTMA), 66 were found to have active bleeds and 33 required embolisation.

Results: Of the 33 patients who required embolisation, 20 had right-sided lower gastrointestinal bleeding (65.4% embolised vs 24.2% non-embolised, $P = 0.001$). Patients requiring embolisation were not significantly less hemodynamically unstable than the non-embolisation group. No statistically significant differences in rebleed rates and mortality were found in the embolization group. Overall mortality rate for patients receiving CT angiography was 3.6%.

Conclusion: We selected a population at higher-risk for significant per rectal bleeding to determine risk stratification characteristics and outcomes. Laterality of bleed was an important risk factor, but gross determinants of hemodynamic stability were not found to be significantly different between the cohort of patients who received active intervention to thwart bleeding and those that did not. Patient outcomes measured using rate of rebleeding and mortality were not found to be significantly different between the intervention and non-intervention groups.

P185

Obturator hernias: open approaches *vs* laparoscopic methods

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Aim: This literature review compares laparoscopy and open surgery for the management of obturator hernia (OH) in terms of intraoperative benefits (primary outcomes) and postoperative efficacy (secondary outcomes).

Method: A literature search was performed using PubMed, MEDLINE, Ovid, Web of Science and Cochrane databases between January 2000 and April 2018. Based on our inclusion and exclusion criteria, 14 English-language articles were extracted from the 375 obtained via our search. 5 of these directly compared OH cases treated by laparoscopic and open approaches.

Results: Primary outcomes: Operating times were more variable for laparoscopy (range = 60 – 104 min) than open approaches (range = 55 – 93.2 min). Intra-operative diagnosis of OH without preoperative CT was more common in open (mean = 27.3%) than laparoscopic repair (mean = 0%). Moreover, laparoscopy had lower average resection rates (20.1%) compared to the open approach (51.9%).

Secondary outcomes: The range of postoperative hospital stays was greater with open approaches (9–30 days) than laparoscopic approaches (5–13.3 days). Average mortality rates were lower with laparoscopy (0%) than open surgery (12.0%).

Conclusion: Laparoscopy may be an alternative to open operations in select OH patients. However, larger multi-centre studies are needed to fully evaluate its advantages.

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P186
The effect of colorectal surgery fellowship on colorectal cancer patients treated with laparoscopic surgery, the experience of a general surgeon

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Aim: To evaluate the effects of colorectal fellowship on laparoscopic colorectal cancer surgery outcomes.
Method: Laparoscopic colorectal cancer surgery cases performed, before and after the training period were evaluated. Demographics, type of surgery, starting date of oral nutrition, complications, lymph node numbers and length of stay were recorded.
Results: A total of 142 patients were enrolled in the study. There was no difference in the demographics of the patients ($P > 0.05$). There were more low anterior resections in the second period (60% vs 39% $P = 0.012$). Oral regimens were started significantly lower in the second period (2, 11 ± 0.72 vs 3, 25 ± 0.79 $P < 0.001$). When the complicated patients were excluded, mean hospitalization day was 7.8 ± 2.12 days in the first and 6.71 ± 2.24 in the second period ($P = 0.019$). There was no difference between the mean numbers of lymph nodes ($P > 0.05$). In the first period more complications were observed (36% vs 23%, $P = 0.03$). Mortality was 1.4% and there was no difference between the periods ($P = 0.079$).
Conclusion: Colorectal surgery training programs reduce complications and increase early oral nutrition and discharge rates, which are the main advantages of laparoscopic surgery.

P187
Endoscopic clip application is reliable and successful treatment in colonic perforations

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Aim: Colorectal perforations may occur after endoscopic mucosal resection, endoscopic submucosal dissection, polypectomy, penetrating injuries and gunshot wounds. Minimally invasive endoscopic treatments, with the advances and experience in endoscopic technology, have become a good alternative to surgery nowadays in many cases.
Method: Data of 21 patients with colonic perforation from 2014 to 2017 who were treated with endoscopic clip method were retrospectively screened. Perforations smaller than 1 cm were treated with endoscopic clip, larger than 1 cm treated with OTS clip.
Results: Clipping technique was successful in 19 of 21 patients (90.4%), whereas it failed in 2 patients and surgical treatment was applied. There was iatrogenic perforation in 12 patients, penetrating injury perforation in 6 patients and gunshot injury in 3 patients. The mean duration of hospitalization was 5.4 days in clip group and 6.5 days in surgery group. 14 cases were treated with endoscopic clip and 7 cases with OTS clip.
Conclusion: Gastrointestinal perforations due to trauma and iatrogenic injuries have severe complications and these perforations can be treated with a minimally invasive endoscopic clipping method. Endoscopic clipping is a reliable method and can be successfully applied in selected cases in centers with experienced endoscopy team and adequate equipment.

P188
Risk factors of stoma complications; multivariate analysis of 350 consecutive patients

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Aim: The study aimed to identify incidence of early stoma complications and to assess risk factors of them.
Method: A retrospective study of 350 patients operated on with a formation of colostomy, ileostomy or loop-ileostomy between 2014 and 2016 was carried out. Stoma complications were categorized into skin problems, separation, necrosis, infection, stenosis, and prolapse. An early complication defined as occurring within 4 weeks of stoma formation. On these occasions the height and stoma output weight were recorded.
Results: 169 (48.3%) stomas were constructed for rectal cancer, 111 (31.7%) stomas for management of ileus, and 70 (20.0%) stomas for perforation or leakage.

217 (62%) patients had one or more complications. The most common complication was skin problems which occurred in 173 (49.4%). Significant risk factors included ileostomy ($P < 0.01$) and high-output stoma ($P = 0.04$). Separation occurred in 52 (14.9%), significant risk factor included surgical sight site infection of wound. Necrosis occurred in 28 (8.0%), significant risk factors included BMI > 25, colostomy and postoperative complications (Clavien-Dindo classification grade > II). Infection occurred in 2 (0.6%), stenosis occurred in 11 (3.1%) and prolapse occurred in 12 (3.4%).
Conclusion: Patients with these risk factors need to make intensive outpatient follow-up.

P189
Index C-reactive protein predicts increased severity in acute sigmoid diverticulitis

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Aim: Conservative management is successful in unperforated (Hinchey Ia) acute diverticulitis (AD), also in local perforation or small abscesses (Hinchey Ib). A higher degree of radiological severity (Hinchey>Ib), i.e. a larger abscess (>3–4 cm) or peritonitis, commonly requires invasive therapy. We aim to evaluate the usefulness of CRP in distinguishing AD with a higher degree of severity (Hinchey>Ib) from cases that can be treated non-invasively (Hinchey Ia/Ib).
Method: Data from consecutive patients were collected prospectively. Parameters obtained at presentation were analyzed. Exclusion criteria comprised concomitant conditions that affect CRP baseline levels.
Results: From 99 patients, 88 had mild disease (Hinchey Ia/Ib), whereas 11 had severe (Hinchey>Ib) [median index CRP 80 mg/l vs 236 mg/l ($P < 0.001$)]. White blood cells, neutrophils/lymphocytes, serum-creatinine, serum-glucose, generalized peritonitis/abdominal tenderness, urinary symptoms, and index CRP were related to severe disease. Index CRP was the only independent predictor with an optimal cut-off value of 173 mg/l (sensitivity 90.9%, specificity 90.9%, $P < 0.001$). All patients who underwent radiological drainage or surgery had an index CRP>173 mg/l and Hinchey>Ib.
Conclusion: Index CRP levels>173 mg/l predict major acute complications in AD. These patients commonly require urgent percutaneous drainage or surgical management.

P190
Comparison of different surgical techniques for closure of diverting loop ileostomy: A clinical trial

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Aim: The aim of this study is to evaluate and compare outcomes of three different surgical techniques used for the closure of protective loop ileostomy after a curative rectal cancer resection.
Method: In this clinical trial a total of 93 patients with history of rectal cancer, low anterior resection and diverting loop ileostomy were included. The patients were randomly assigned into three groups for their ileostomy closure including (A) anterior repair of the ileal defect, (B) resection and hand-sewn anastomosis, (C) resection and stapled anastomosis.
Results: Intraoperative complications including bleeding or small bowel damage were similar between all groups (P > 0.05). Evaluating postoperative period, Group A developed a faster first gas and stool passage compared to the other two groups (P<0.05). Regular PO diet was also tolerated in the Group A significantly faster (A = 2.5, B = 3.5, C = 3 days, P<0.05). Group A also revealed a shorter hospital stay (A = 4.3, B = 6.5, C = 6.1 days, P<0.05). However, the group A had a meaningful longer operating time (P<0.05).
Conclusion: The anterior repair technique for the closure of loop ileostomy is a safe technique with better postoperative bowel function and PO tolerance, and less hospital stay.

P191
Successful use of ultrasound percutaneous ablation for extraperitoneal desmoid, in 6 patients: A single centre experience

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Aim: Desmoid disease is an important cause of morbidity and mortality in patients with familial adenomatous polyposis (FAP). There are limited effective treatment options including chemotherapy, radiotherapy and surgery. Surgery is associated with a high morbidity and has a high rate recurrence even in fully resected disease. We present a case series of 6 patients who have successfully been treated with ultrasound (USS) assisted radiofrequency or microwave ablation.

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Method: 6 patients with FAP and desmoid genotype had 21 separate USS assisted ablations of desmoid lesions; abdominal wall, paraspinal, chest wall, axilla and pleura. Pre procedure imaging was either magnetic resonance (MRI) or computed tomography (CT) scan. The number of treatments ranged from 1–16 treatments with follow-up from 4–108 months following the index procedure.
Results: Procedures were well tolerated with minor complications including; superficial cellulitis managed with oral antibiotics, pain requiring opiates and skin necrosis. The 1 case of skin necrosis resolved with no intervention. In 2 cases central tumour necrosis required USS guided aspiration and oral antibiotics. Repeated treatments resulted in resolution or control of disease.
Conclusion: With limited treatment options for desmoid disease in FAP, USS percutaneous ablation for extraperitoneal desmoid is a promising and safe treatment modality.

P192

Psoas muscle index as a prognostic factor in patients with emergency surgery for colorectal perforation

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Aim: This study aimed to evaluate the significance of psoas muscle index (PMI) as a sarcopenic marker with regard to the mortality or morbidity after emergency surgery for colorectal perforation.
Method: Total 69 patients underwent emergency surgery for colorectal perforation who is available preoperative abdominopelvic computed tomography were retrospectively reviewed. PMI was defined by the cross-sectional area of both psoas muscle at the level of L3 and divided by body height (cm^2/m^2). Level of PMI was grouped into low PMI and high PMI by median of each sex.
Results: Causes of perforation were colorectal cancer (11.6%), diverticulitis (23.2%), ischemia (24.6%), stercoral (11.6%), and others. Mean level of PMI were 4.40 ± 1.53 cm^2/m^2 in male patients and 3.23 ± 1.17 cm^2/m^2 in female patients. There were 36 patients of high PMI and 33 patients of low PMI.Preoperative albumin was significantly associated with PMI status. Major morbidity was occurred in 27 patients and mortality in 12 patients. The multivariate analyses revealed that sarcopenia (low PMI) was independently associated with development of major morbidity ($P = 0.001$) and mortality ($P = 0.018$).
Conclusion: The present findings suggest that low PMI as a sarcopenic marker has an important role in prediction of postoperative outcomes.

P193

Experience of 73 patients of Fecal Diverting Device (FDD) for the substitution of defunctioning stoma

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Aim: To evaluate the early result of FDD application.
Method: Retrograde analysis of prospectively collected data of FDD trials. Subjects were left sided colorectal patients who need anastomotic protection. Inclusion criteria were benign and malignant disease, emergency and elective patients. Exclusion criteria included ASA>3, age<18, immobilization, pregnant, senile dementia patients.

FDD was installed intraoperatively and maintained for 3 weeks and removed without anesthesia in OPD base. For the evaluation of anastomotic leakage (AL) abdominal computed tomogram scan (CT) at 1 week and contrast study at 3 weeks were performed postoperatively. If AL was found at 3 weeks postoperatively, FDD maintenance was prolonged 1–3 weeks additionally.
Results: Initially 74 patient was enrolled however, 1 patient excluded from analysis because of early cessation of the study caused by a factor relation less FDD procedure. Total 73 patients (M:F/ 41:33) were evaluated. Median age was 69 (37–86). There was no mortality and serious morbidity require re-operation. Stoma conversion was performed in 2 patients. AL was noted in 17 cases (23%) at 1st week CT and 9 cases (12%) at 3rd week contrast study. FDD maintenance was prolonged in these patients for 12 (median, range;6–22) days.
Conclusion: FDD achieved the role of temporary stoma successfully.

P194

The multiple variations of inferior mesenteric artery branches in a Russian cohort

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Aim: to assess anatomic variations of inferior mesenteric artery (IMA) branching using CT in patients with left-colon and rectal cancers to plan para aortic lymph node dissection.
Method: preoperative CT scans with vascular reconstruction and intraoperative data on IMA branching variants were assessed in 140 patients (16–91 years) with left colon and rectal cancer operated in 2013–2018. Zebrowski classification (8 variants of IMA branching) was applied.
Results: The 8 variants described in Zebrowski classification were found in 125 (89.3%) cases. The most frequent were: common sigmoid artery (SA) trunk dividing into 2 SA (30.7%) and 2 SA originating from superior rectal artery and left colic artery (17.9%). 7 additional variants of IMA branching not described in the classification were found mostly including rosette type of several vessels single origin.
Conclusion: The existing classification lacks of several variations IMA branching. In the Russian patient cohort 7 additional variations were found. When performing para aortic lymph node dissection with IMA skeletonisation knowing the type of IMA branching preoperatively can help avoid inadvertent vessel injury and allow safe selective IMA ligation.

P195

Anatomical variations in the branching pattern of middle rectal artery – radiological evaluation by 3D-CT angiography

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Aim: Middle rectal artery (MRA) is a very important anatomical structure in rectal cancer surgery. It is associated with lateral lymphatic flow and the lateral lymph node metastasis. But its frequency nor the variations of the running root are not well known.
Method: MRA was defined as every artery running into mesorectum from lateral side below peritoneal reflection. We use the arterial phase of preoperative MDCT scan in 10 cases of lower rectal cancer. The origin of MRA were evaluated, and the penetrating point into mesorectum was divided into 3 patterns; Type A (anterior) Type B (lateral) and Type C (posterior).
Results: MRA was found in 8 cases among 10 cases, and in 12 sides among 20 cases. Among these 12 MRAs, 4 arteries were originated from the main trunk of the internal iliac artery, and other 8 arteries were from the prostatic artery or the vaginal artery. 7 arteries were Type A, 4 arteries were Type B, and 1 artery was Type C.
Conclusion: MRA was found in 80% of cases. Its most major origin was the prostatic artery or the vaginal artery. Most major penetrating site was anterior part (Type A) rather than lateral part (Type B) .

P196

A review of wearable technology in abdominal surgical patients

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Aim: Wearable devices is an emerging field of technology that can accurately collect data from patients via an unobtrusive and non-invasive approach. Wearable devices can be adopted into clinical use in abdominal surgery. This is the first review, to date, to summarise the use of wearable technology in abdominal surgical patients.
Method: A comprehensive literature search was performed on Pubmed and Medline electronic databases. Studies published between 2007 and 2018 were assessed.
Results: Nine studies were included and categorised based on the type of wearable device investigated: 1) Ear-worn sensor (3/9); 2) Acoustic gastrointestinal biosensor (2/9); 3) Other (4/9). The majority of studies assessed the use of wearable devices for recovery. All studies demonstrated positive findings, reporting successful implementation into clinical practice, high sensitivity and specificity in data measurements and high compliance compared to standard care. The most common limitations highlighted is low battery life and overall design flaws of the device.
Conclusion: There is limited evidence of wearable devices in abdominal surgery. Studies demonstrate wearable devices as effective tools in patient monitoring. However, all articles are observational, 'proof-of-concept' studies testing device prototypes. Technological limitations in existing wearable technology must first be addressed for wide-scale adoption into clinical practice.

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P197
Fasciotens – a new device to facilitate closure of the open abdomen

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Aim: In the open abdomen, fascial retraction often impedes a direct closure. A newly developed device was tested in a porcine animal model.
Method: 12 pigs under general anaesthesia were divided in two groups. Both groups received a median laparotomy of 30 cm. Group one was treated with the aid of the new device. Group two received a laparotomy without further surgical procedures. Drag forces for closing the abdominal fascia were measured immediately after laparotomy as well as after 24 and 48 hours. Measurements were performed in the laparotomy's center as well as 7.5 cm cranially and caudally. Vital parameters and ventilation pressure were recorded. Post mortem all fascial tissues and weight bearing tissues were histologically examined.
Results: Over the entire follow-up all pigs demonstrated increasing abdominal circumferences, mainly due to generalized edema. In both groups, drag forces for closing the abdomen increased. Group one demonstrated a significantly lesser increase in drag forces over the entire follow-up. The device didn't influence vital parameters and ventilation pressure.
Conclusion: The new device improves the treatment of the open abdomen. It offers an innovative treatment option to counteract fascial retraction. It facilitates closing a laparotomy after a longer period without any alloplastic materials or abdominal wall reconstructions.

P198
Booster medication to achieve capsule excretion in colon capsule endoscopy, a randomized controlled trial on three regimens

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Aim: To compare three booster regimens in colon capsule endoscopy in achieving capsule excretion within recording time, quality of bowel cleansing and completion rate (both adequate cleansing and capsule excretion).
Method: Patients scheduled for surveillance colonoscopy aged 18–70 years were eligible. Bowel preparation was two liter split dose polyethylene-glycol solution. Patients were randomized to three booster regimens of either polyethylene-glycol (Group A), sulfate-based saline solution (Group B) or polyethylene-glycol with iodine oral contrast (Group C).
Results: 180 participants were randomized into three groups. Capsule excretion was 70% (95% CI: 58–80) in group A, 73% (95% CI: 61–83) in group B and in 68% (95% CI: 56–79) in group C, no significant differences. Bowel cleansing grade was significantly better in group B, compared to group A ($P = 0.03$), no significant differences between group C and A ($P = 0.40$). Complete examination rate was 65% (95% CI: 53–77), 72% (95% CI: 61–83) and 62% (95% CI: 50–74) in group A, B and C respectively, no significant difference.
Conclusion: Sulfate-based solution gave a significantly better bowel cleansing compared to polyethylene-glycol. The overall excretion and completion rate was lower than expected. Achieving a high completion rate using patient tolerable and low risk compounds is still a challenge.

P199
Negative predictive value of temperature and inflammatory markers for acute appendicitis

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Aim: To determine if the negative predicative value (NPV) of a combination of White cell count, C-reactive-protein and Temperature is low or close to nil in the evaluation of patients with acute appendicitis.
Method: This is a retrospective cohort study which looked of patients who underwent either an open or laparoscopic appendicectomy over a 5 year period. Initial temperature, white cell count (WCC), and C-reactive protein (CRP) on presentation to ED were collected and analysed. Post-operation histopathology of the removed appendix was also reviewed and recorded.
Results: A total of 1680 patients met the inclusion criteria. 1252 (74.5%) had histologically positive appendicitis while 428 (25.5%) did not. A variety of cut-offs combining temperature, WCC, Neutrophils and CRP yielded an NPV ranging from 72.5–73.7%. Males with normal markers had an NPV of 66.7% while females had an NPV of 76.9%.
Conclusion: Temperature, WCC and CRP were all significantly elevated in histologically proven appendicitis, reinforcing the current literature. This study demonstrated that when temperature, WCC and CRP were all in normal values up to 26.3% of patients still had histologically proven appendicitis. Hence in patients who present to ED who have normal temperature and inflammatory markers, cannot have appendicitis excluded.

P200
ERAS in high risk patients-identification of risk and postoperative monitoring

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Aim: To decrease mortality in elective colorectal surgery and to identify and monitor high risk patients within the ERAS concept.
Method: 29 patients operated with open or laparoscopic technique 2016–2017 in Capio Sankt Gorans Hospital were identified as high risk ERAS patients using surgical risk calculator tool (NESQIP) and surgical apgar score. This specific group of patients underwent an intense postoperative monitoring program regarding parameters like laboratory samples, fluid and weight control, blood pressure and heart frequency compared to regular ERAS control group.
Results: 30 days mortality was lowered from 7.1 to 3.4% comparing high risk ERAS patients to regular ERAS patients although detected complications increased from 19 to 38%. The median LOS (length of stay) increased from 6.5 to 9 days. The patients in the high risk group were older than the control group (80.5 vs 83 years, median).
Conclusion: A significant decreased mortality was seen in the high risk ERAS patients compared to ERAS control group. Registered complications increased and underestimated risk of complications was observed.

This implies that there is a clear benefit regarding improved mortality and risk identification by intense postoperative monitoring in high risk ERAS patients in colorectal surgery. Larger groups of patients are needed.

P201
Aortoiliac calcification as a possible risk factor for anastomotic leakage after rectal cancer surgery

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Aim: We hypothesized that aortoiliac calcification may be a surrogate of decreased visceral perfusion causing anastomotic leakage (AL). This study aimed to evaluate the predictive role of aortoiliac calcification for AL after rectal cancer surgery.
Method: We enrolled 637 patients with primary rectal cancer who underwent restorative resection between January 2013 and December 2015. An aortoiliac calcification score was calculated as the sum of calcification scores at infrarenal aorta (0: no, 1: ≤3 cm, 2: >3 cm) and common iliac arteries (0: no, 1: unilateral, 2: bilateral). Clinicopathologic characteristics were analyzed to identify risk factors for AL.
Results: Among the included patients, 58.9% ($n = 375$) had aortoiliac calcification score ≥3, and 6.8% ($n = 43$) experienced AL, with 33 (5.2%) of them were grade C. Patients with aortoiliac calcification score ≥3 had a tendency of higher incidence of AL (8.3% *vs* 4.6%, $P = 0.068$) and grade C AL (6.7% vs 3.1%, $P = 0.043$). Multivariate logistic regression analysis revealed that aortoiliac calcification score ≥3 might be a possible risk factor for grade C AL (odds ratio = 2.362, 95% confidence interval 0.998–5.594, $P = 0.051$), though statistically not significant.
Conclusion: Aortoiliac calcification may be used as a possible risk factor for grade C AL after rectal cancer surgery.

P202
Endo-hook *versus* endo-shears cautery during laparoscopic surgery for right colon cancer: a case-control study for technical benefits

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Aim: The perfection of oncologic resection may depend on the surgical device used for sharp dissection. There are no reports comparing outcomes according to dissection monopolar cautery during laparoscopic surgery. This study aimed to compare surgical outcomes between endo-hook *versus* endo-shears cautery for right colon cancer.
Method: Between Mar 2009 and Mar 2017, 358 consecutive patients with right colon cancer who underwent curative laparoscopic surgery with endo-hook ($n = 164$) and endo-shears ($n = 194$) cautery were analyzed retrospectively from a prospective database.
Results: No differences were found in age, sex, body mass index, American Society of Anesthesiologists' score, previous operative history, and clinical stage between both groups. The estimated blood loss was similar between endo-hook and endo-shears cautery (91 *vs* 92 mL, $P = 0.893$). The number of harvested lymph nodes was

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more with endo-hook than with endo-shears cautery (54 *vs* 48, $P = 0.008$). Hospital stays were shorter with endo-hook cautery (6.80 *vs* 7.81 days, $P = 0.013$). Postoperative morbidity was less with endo-hook than with endo-shears cautery (9.8% *vs*18%, $P = 0.025$), although chylous ascites were more frequent with endo-hook cautery (21.3% *vs* 7.7%, P<0.001).
Conclusion: Endo-hook is more beneficial in lymph node dissection than endo-shears cautery during laparoscopic surgery, with lower morbidity and shorter hospital stay.

P204
Comparison of recovery courses between open and laparoscopic surgery in patients with peritonitis due to perforated colonic diverticulitis

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Aim: There is still controversy about application of laparoscopic surgery to the peritonitis patients with diverticulitis perforation. We aimed to investigate the factors affecting postoperative mortality in patients with perforated diverticulitis, and to compare the recovery course between open surgery and laparoscopic surgery.
Method: We analyzed the medical records of patients with peritonitis due to perforated diverticulitis in six university hospitals.
Results: Total 166 patient were identified. In the univariate analysis the factors statistically significantly associated with postoperative mortality were age ≥ 60-year, BMI ≥ 23, ASA ≥ 3, hypertension, serum BUN ≥ 23 mg/dL, creatinine ≥ 1.2 mg/dL, albumin 〈 3.0 g/dL, modified Hinchey score ≥ grade III, stoma formation, and laparoscopic surgery. In multivariate analysis, serum albumin 〈 3.0 g/dL was the only contributor to the mortality rate. After case-control matching, we compared postoperative hospital course and prognosis between the open and laparoscopic surgery group. There was no significant difference in recovery course and hospital stay length, complication rate, reoperation rate, re-admission rate, and mortality.
Conclusion: Low preoperative serum albumin level affects postoperative mortality. Laparoscopic surgery in peritonitis patients with diverticulitis perforation can expect to have comparable hospital course and prognosis with the conventional open surgery.

P205
Surgical management of sigmoid volvulus: a multicenter observational study

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Aim: This study compared the outcomes between emergency and elective surgery for sigmoid volvulus.
Method: Five tertiary centers participated in this retrospective study from October 2003 through April 2014.
Results: Among 71 patients, sigmoidectomy was the most common ($n = 43$), followed by Hartmann's procedure ($n = 23$), subtotal colectomy ($n = 5$). Emergency surgery was performed in 33 cases (46.5%) when volvulus could not be reduced with sigmoidoscopy or for bowel infarction. Among them, open surgery was preferred ($n = 32$, 97.0%), and stoma formation rate was high (84.8%). The remaining 38 cases were elective, with 22 laparoscopic (57.9%) and 16 open procedures (42.1%). Median laparoscopic operative time was 190 min and open surgery time was 134 min ($P < 0.001$). Median postoperative hospitalization was 11 days for laparoscopy and 13 days for open surgery. Of 19 postoperative complications, 7 were pulmonary complications, 6 ileus, 3 wound complications, 2 anastomosis site leakages, and 1 case of sepsis. All complications were resolved with conservative management. Emergency surgical cases had 13 complications (38.2%). There were no recurrences during follow-up (median: 31.5 months).
Conclusion: Compare to elective surgery, emergency surgery has higher rate of postoperative complications, open surgery and stoma formation. Elective laparoscopic surgery after sigmoidoscopic decompression may be an optimal option.

P206
Use of imaging in suspected appendicitis cases to reduce negative appendicectomy rates (NAR) – an audit

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Aim: Negative appendicectomy rate (NAR) is the proportion of patients with suspected appendicitis who have a histologically normal appendix. Historically, NAR of 15–20% is considered to be acceptable. An audit was conducted to assess the NAR at a teaching hospital and compared against national standards. The objective was to ascertain methods of reducing NAR.
Method: A retrospective review was done of all adult patients undergoing appendicectomy from January to June 2016. Data including use of ultrasound scan and computed tomography, and histology reports of appendix specimen were analysed. NAR was calculated. An imaging pathway for assessment of suspected appendicitis patients was implemented in June 2017. The audit process was repeated for appendicectomy cases from July to December 2017. NAR was re-calculated.
Results: 132 patients underwent appendicectomy between January and August 2016. NAR was 36% (males: 23%, females: 47%). 49% of patients did not have any imaging. Following implementation of the imaging pathway, 185 patients underwent appendicectomy between July and December 2017. The NAR improved from 36% to 19% (males: 19%, females: 19%). 11% of patients did not have any imaging. There were no missed cases of appendicitis.
Conclusion: Use of an imaging pathway reduces NAR in suspected appendicitis patients.

P207
Realistic medicine in diverticular disease: can we rationalise CT colonography?

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Aim: To identify if CT colonography (CTC) altered management of patients with known diverticular disease (DD) To determine outcomes within 3 years of colonic investigation
Method: Patients ($n = 151$) in a 6-month period were identified and retrospectively followed up over 3 years. A 36 patients' subgroup with previous tests demonstrating DD was analysed.

Indications for colonography and comorbidities were obtained via referral details and clinic assessment.
Results: Female:Male ratio in DD cohort was 3.5:1. Mean age was 75.4 years (range 70–81). The 22.2% underwent CTC due to perceived frailty and 61.1% due to failed colonoscopy within the preceding 12 months. Indications for testing included: altered bowel habit (61.1%), iron deficiency anaemia (27.8%), weight loss (19.4%) and PR bleeding (16.7%).69.4% with pre-existing DD had ≥1 comorbidity. Only 2 patients underwent colonic resection (5.6%). Twenty-one patients (58.3%) had extra-colonic abnormalities identified at colonography with subsequent referrals made in 56.5% of these patients. During 3 years post CTC, 297 further radiological investigations were undertaken including 2 repeat CTC in these 36 DD patients. 3 patients died within the study period (8.3%).
Conclusion: Co-morbid patients with diverticular disease are at risk of unnecessary over-investigation. In the age of realistic medicine, appropriate investigation must be emphasised.

P208
Antibiotic prescribing and antibiotic resistance patterns in acute appendicitis

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Aim: This project evaluates the choice of antibiotic prophylaxis for appendicectomies with regards to local pathogen resistance patterns and re-admission rates.
Method: We retrospectively reviewed all patients who consecutively underwent appendicectomy for histopathologically proven appendicitis in 2017, in a district general hospital. We collected the following data: length of stay, laparoscopic or open procedure, histopathology, microbial samples obtained during surgery, pathogens including antibiotic susceptibility testing results, choice of antibiotic prophylaxis, complications, antibiotic treatment and duration, re-admission and re-intervention, e.g. radiological drainage, further surgery and secondary pathogens.
Results: We are comparing this data with 3 years of previously collected data (2012, 2015, 2016); a total of 426 patients. A wide range of pathogens were found, including AmpC and ESBL producers. Pathogens found in samples from the index operation were not always found in samples obtained during re-intervention.
Conclusion: Current guidelines do not encourage obtaining microbiological samples. Determining local resistance patterns through sampling however, can support the choice of an appropriate antibiotic prophylaxis and treatment.

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P209
Lateral internal sphincterotomy versus V-Y advancement flap in treatment of anal fissure in females (A prospective study)

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Aim: This study aims to use preoperative anorectal manometry as an indicator to apply different surgical techniques (lateral internal sphincterotomy {LIS} and V-Y advancement flap) in treatment of chronic anal fissure in females.
Method: Twenty-four female patients with chronic anal fissure were divided into two groups; patients with increased resting anal pressure underwent LIS (group 1, no = 16) and patients with normal or decreased anal pressure underwent V-Y advancement flap (group 2, no = 8). In 1 year follow up; healing, pain, recurrence and anal sphincter state were assessed.
Results: Postoperatively, significant decrease in anal pressure was noted in Group 1, while no significant decrease in anal pressure was noted in Group 2. Postoperative bleeding occurred in 6% of patients of group 1 and none of patients of group 2. Minor transient fecal incontinence developed in one patient of group 1 and none of patients of group 2 suffered from postoperative FI. Incidence of recurrence of anal fissure at 12 months of follow-up was 0% in both groups.
Conclusion: Tailoring surgical treatment of chronic anal fissure according to preoperative anal sphincter and anal pressure state will give the best possible outcome.

P210
Robotic colorectal surgery with utilisation of a next generation single port system: A cadaveric feasibility study

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Aim: Single-port laparoscopic colonic surgery has been proven to be comparable to conventional laparoscopic multi-port approach, both in terms of oncological safety and morbidity. Laparoscopic single-port technique remains to be challenging with a steep learning curve. Improved robotic technology using a purpose-built single-port robotic surgery (SPRS) may offer a promising alternative.
Method: Single-port robotic system (da Vinci model SP 1098; Intuitive Surgical, Sunnyvale, CA, USA) was used to perform single-port minimally invasive left hemicolectomy, anterior resection and total mesorectal excision on five cadavers. Surgeons were trained on the robotic system with skill-based tasks and porcine model prior to testing. Operative details and Surgeons' experiences were recorded.
Results: All cases were completed without the need for conversion. The mean total operative time was 170.2 mins (mean docking time 5.6 mins; mean console time 155 mins). There were no intraoperative complications. Surgeons reported excellent set-up, utilization of the SPRS with minimal fatigue.
Conclusion: Single-site right colonic surgery is feasible using the latest generation robotic system. SPS robotic system may offer an exciting new option for future colorectal surgery. Clinical evaluation on patients with colonic pathology is required to confirm this potential.

P211
Intracorporeal anvil introduction during robotic rectal resection "vijan pop technique": technique and initial results

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Aim: Most of the minimally invasive colorectal procedures are associated to a laparotomy incision when the anvil should be introduced inside the colon before a mechanical anastomosis during a robotic rectal resection (RR).
Method: From April 2016 to March 2018, 40 patients underwent to robotic RR, with a new surgical technique for the anvil introduction "Vijan Pop", which consist in a intracorporeal insertion thus preserving the abdominal wall before the anastomosis.
Results: Among 40 patients (22 Male, 16 Female), 28 presented a BMI higher than 30. The overall time required for introducing anvil and performing the anastomosis was 22 min (18–36). In only two cases we experimented a disposition of the anvil inside the colon lumen. No patients required a laparotomy to complete this surgical step. No one of patients experimented an anastomotic post-operative complication. In all cases the specimen extraction was completed trough a Pfannenstiel incision. The median wound incision length was 3 cm, and no wound infection was observed in the postoperative course.
Conclusion: The Vijan Pop technique seems to be safe and feasible approach offering interesting results mainly in obese patients or when a cosmetic incision is requested.

P212
Robotic-assisted versus laparoscopic left hemicolectomy: a comparative study

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Aim: The robotic surgery seems to overcome the traditional limitations of laparoscopic surgery. Its potential benefits in colorectal surgery are not yet clearly demonstrated.
Method: We performed a retrospective case-match analysis of our maintained database involving 50 patients who underwent to robotic ($n = 25$) or laparoscopic ($n = 25$) left hemicolectomy since March 2014 to April 2016.
Results: Despite the higher operative time (272 vs 220 min), the robotic approach was associated to less blood loss (180 vs 385 ml) and conversion to open (2/25 vs 6/25). The overall morbidity rate (5/25 vs 6/25) and the length of hospital stay (5.5 vs 5.7 days) were similar in both cohort. Only 2 patients out of 25 robotically-treated experimented complications anastomotic-related versus 4/25 in the laparoscopic group. In both group we reached a good oncologic adequacy in terms of lymph node harvested (22.5 vs 21) and overall survival rate (92% vs 89%).
Conclusion: The robotic left hemicolectomy is safe and feasible, it offers short-terms outcomes comparable to laparoscopic approach.

P213
Medium care observation after colorectal surgery in high-risk patients

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Aim: The aim of this study is to investigate the effect of postoperative Medium Care (MC) surveillance after colorectal surgery on severe complications in high-risk patients.
Method: This study was designed as a historically controlled interventional study. Patients who underwent colorectal resection between 2015–2018 were included and compared to 704 patients from a historical database (2009–2014). The Groningen Frailty Index (GFI) questionnaire was scored preoperatively. Frailty was defined as GFI>4. Observation on the MC was 24 hours.
Results: In total, 601 patients underwent colorectal resections. In 491 patients GFI was scored; 79 had GFI>4, of which 67 were monitored on the MC. After introduction of MC surveillance, the major complication (Clavien-Dindo>3b) and mortality rate decreased significantly compared to the historical database (18.3% *vs* 12.5%, $P = 0.005$ and 5.7% *vs* 1.3%, $P < 0.001$, respectively). Median length of hospital stay decreased from 8 (IQR 5–14) to 5 days (IQR 3–8) ($P < 0.001$) and the number of emergency ICU admissions from 9.5% to 5.8% ($P < 0.001$). Multivariable analysis showed that colorectal surgery after 2015 was a strong independent predictor for less major complications (OR:0.59, 95% CI 0.39–0.86).
Conclusion: A significant decrease in major complications and mortality was observed after introducing post-operative MC surveillance in high-risk patients.

P214
Laparoscopic local excision; a good alternative for colonic resection in endoscopically unresectable benign colon polyps?

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Aim: Due to the national-bowel-cancer-screening-program an increase is seen in patients referred for surgery for benign endoscopic unresectable colon polyps. The aim of this study is to compare morbidity of less invasive laparoscopic local excision to oncological resections.
Method: From a prospective maintained database patients were identified who underwent surgery without biopsy-proven cancer between 2009 and 2017. Patients with macroscopic features of carcinoma during endoscopy were excluded. Clinical and pathological outcomes were compared between patients who underwent oncological resection versus laparoscopic local excision.
Results: Hundred and twenty-nine patients were identified; 99 patients underwent an oncological resection. Forty-three patients were operated before the start of the screening program and 56 patients after, the malignancy rate dropped form 14.1% versus 5.0% ($P = .006$). The overall mortality rate was 4.0% and major complication rate 17.0%. From thirty patients who underwent laparoscopic local excision, 22 were laparoscopic wedge resections and 8 laparoscopic caecum sleeve resection (19 through hybrid procedure). The malignancy and mortality rate was 0% and major complications occurred in 4.0%.
Conclusion: Overall malignancy rate after surgery is low (3.5%). Complication rates are lower after laparoscopic local excision and therefore preferable in this patient group.

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P215
The value of rectal contrast before CT-abdomen for detecting anastomotic leakage after colorectal surgery

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Aim: Early detection of anastomotic leakage after colorectal surgery, followed by fast re-intervention, is crucial. Currently, the preferred diagnostic instrument for detection of anastomotic leakage is computed tomography (CT). Rectal contrast could improve the predictive value, however there is still no evidence. The aim of this study was to investigate the value of rectal contrast in detecting anastomotic leakage.
Method: From a prospectively maintained database patients were reviewed who underwent colorectal surgery with primary anastomoses between 2009 and 2017. Patients in whom a postoperative abdominal CT was performed were included. Clinical and radiological outcomes were compared of patients with and without rectal contrast.
Results: In total, 1183 patient files were reviewed, of which 227 patients underwent CT-abdomen with suspicion of an anastomotic leak. Of these patients 176 (77.5%) received rectal contrast. The sensitivity and specificity in this group was 75% and 95% respectively. Positive predictive value (PPV) was 0.81 and negative predictive value (NPV) 0.93. In the group without rectal contrast ($n = 51$) sensitivity was 47% and specificity 86%, PPV 0.58 and NPV 0.78.
Conclusion: This study shows an increase in predictive value of CT-abdomen for anastomotic leakage after giving rectal contrast.

P216
Analysis of 50 fluorescence-guided colorectal anastomoses: does fluorescence have a real impact on intraoperative decisions and clinical consequences?

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Aim: To analyze the clinical impact of fluorescence-guided surgery (FGS) on colorectal anastomoses and, study the diagnostic accuracy; correlating with quantitative data, the findings visualized by fluorescence.
Method: Experimental study that included 50 patients in whom colo-colic or colorectal anastomosis, was performed. Intraoperative variables related to anastomotic leakage and the use of FGS with indocyanine green (ICG) were analyzed, as well as postoperative complications. We have also studied the correlation between intraoperative findings, obtained using a visual nominal scale front, and the percentage value of ICG analyzed postoperatively through captured images during the surgical procedure.
Results: FGS changed the strategy in 5 (10%) cases during the anastomotic formation. There were no major complications related to ICG infusion. There was no case of anastomotic leak in the cases where the intraoperative strategy was modified. The concordance study showed satisfactory results ($\kappa = 0.69$, $\kappa = 0.63$ and $\kappa = 0.42$) between intraoperative ICG qualitative assessment and postoperative ICG quantitative assessment.
Conclusion: FGS is a safe tool with impact on the performance of colorectal anastomoses (10%) and its postoperative course. Its use could help to prevent anastomotic dehiscence.

P217
Surgical treatment of colonoscopic perforations

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Aim: Perforation is a rare but severe complication during colonoscopic procedures (0.016–3%). Optimal management of colonoscopic perforation remains controversial. We present our center's experience on the management of colonoscopic perforations.
Method: Patients with colonoscopic perforations during 2017 were selected from a Colonoscopy and an Emergency Surgery databases. Demographics, treatment, type of surgery and outcomes were collected.
Results: Perforation rate was 0.0014% (13 cases out of 9000 colonoscopies). In three patients without contrast leak on the CT scan, conservative treatment was successful. Ten patients underwent surgery, either due to clinical instability or contrast leak. Median time before surgery was 6 hour (2–21 hour). Eight cases were performed by laparoscopy (80%). Four patients were treated by suturing (40%), 5 resections (50%), two with anastomosis and 2 Hartmann, and 1 with the placement of a drain (10%). One patient treated by suturing required subsequent resection. Complications were 1 wound infection, 1 ileus and 1 rectal bleeding. Median length of stay was 7 days (5–15).
Conclusion: Early diagnosis is essential for an appropriate treatment of colonoscopic perforations. Clinical status and imaging are helpful to decide conservative vs surgical treatment. Simple suturing or resection are acceptable surgical options, and may be safely performed laparoscopically.

P218
Conservative treatment for acute appendicitis – beware of appendicular cancers – a DGH experience over 7 years

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Aim: An audit of the incidence of appendicular cancers in a DGH setting to identify appendicitis cases treated conservatively which were actually appendicular cancers
Method: A retrospective study of 17 patients who were diagnosed with appendicular cancers over 7 years (2011–2017) from a single NHS trust. Patients with appendiceal cancers were identified from the MDT database and NBOCAP databases. The patients who were initially treated conservatively with antibiotics were identified.
Results: 17 patients were diagnosed with appendicular cancers in this period (2011–2017). 4 female patients had been initially treated conservatively with antibiotics after initial CT scan and their outcomes were analysed. One patient died due to late stage at diagnosis. Three were operated on and survived. All were CT scanned and had colonoscopy within 3 months of index attack.
Conclusion: In our experience, 4 of the 17 patients (23.5%) above 60 years of age were treated with antibiotics and later presented with advanced disease from an appendicular cancer. Currently conservative management of appendicitis is being promoted, and elective appendicectomy are not performed. A persistent appendix on the follow up scan after a conservatively managed episode of appendicitis should warrant an elective appendicectomy.

P219
Neutrophil-Monocyte ratio (NMR), a reliable predictor for diagnosing acute appendicitis

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Aim: To determine whether NMR can be used as an adjunct in diagnosing acute appendicitis.
Method: A retrospective study of 873 patients who underwent appendicectomy over 2 years (2014–2015) from a single NHS trust. The patients were divided into 2 groups: acute appendicitis and normal appendicectomy. The WBC count, CRP, neutrophil and lymphocyte counts on admission and histology of the above patients were analysed by RStudio ver1.0.136 software package
Results: 628 patients had histology proven appendicitis, 245 patients had normal appendices on histology. On analysis, NMR of 13.285 was associated with acute appendicitis in the age < 55 years ($P < 0.0001$). The positive predictive value of the test was 81.03%. The NMR in acute appendicitis is raised and statistically significant with a high positive predictive value.
Conclusion: In our study a NMR of >13.29 on admission correlates to the diagnosis of acute appendicitis. This is not reported in the literature for acute appendicitis. Our study found a high incidence of negative appendicectomies up to the age of 55 years in women and the use of NMR along with other blood markers has shown statistically significant correlation in diagnosing acute appendicitis.

P220
USS, a better radiological test in diagnosis of acute appendicitis in males

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Aim: To determine reliability of USS in patients <18 years for diagnosing appendicitis.
Method: A retrospective study of 873 patients who underwent appendicectomy over 2 years (2014–2015) from a single NHS trust. Patients were divided into 2 groups based on histology as normal and acute appendicitis. USS scans were reports were analysed and graded as positive and negative for features of appendicitis and analysed by RStudio ver1.0.136 software.
Results: On analysis using AUC (area under the curve), 58 patients underwent an USS in total. In the age<18, it had a sensitivity of 70%, specificity of 57%, PPV of 74% and NPV of 52%. Between males and females, USS had better sensitivity (76% vs 65%) and PPV (87% vs 65%).
Conclusion: USS is a good test to rule out appendicitis in males <18 years than females as depicted by our studies. When combined with blood markers on admission, USS becomes a good tool of eliminating appendicitis. Future studies with more numbers are needed.

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P221

An unusual case of intestinal occlusion – Phytobezoar in Meckel Diverticulum – Case presentation

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Small bowel obstruction is a common pathology dealt on an emergency daily basis by general surgeons worldwide. SBO's has a wide variety of causes; postoperative adhesions being the most common −75%-, neoplasm, hernias, crohn's, volvulus, foreign body, gallstone ileus, diverticulitis. Meckel's diverticulum is a congenital malformation of the intestinal tract and occurs in 2% of the population. Meckel diverticulum is most of the time an incidental finding either at laparoscopy or laparotomy being asymptomatic in most cases. One of its complication is bowel obstruction. Phytobezoar is a concentration of poorly digested fruits and vegetable that is found in the alimentary tract. Small bowels phytobezoars are most of the time causing mechanincal obstruction of the bowel. Phytobezoar in Meckel Diverticulum leading to small bowel obstruction is a rare case. Only a handful of cases has been reported in literature.

P222

A 10 year review of emergency general surgery at a central London teaching hospital

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Aim: Emergency general surgery is a modern surgical specialty and recent changes to junior doctors working patterns may have an impact upon this service. Our aim was to understand the admission patterns and delineate whether day of admission and deprivation may be linked to patient outcome.
Method: Data was gathered retrospectively from a prospectively maintained database of all surgical admissions from April 2006-November 2016. Statistical analysis was performed using X^2, Pearson's correlation and t-tests.
Results: There were 21598 general surgical admissions. 52.0% of patients were female and the mean age was 47.8 years. The 2015 was the busiest year with 2300 admissions, whilst Monday (16.0%) and October (9.3%) were the busiest days and months respectively. The mean deprivation decile was 4.87. Significantly fewer patients were discharged on weekends as opposed to weekdays ($P < 0.001$), whilst there was a significant difference between in-hospital mortality and day of admission ($P < 0.05$). 1.5% of patients suffered an in-hospital death, with 92.6% alive at the time of follow up. There was no significant correlation between deprivation and mortality.
Conclusion: Interestingly we have found that both discharge and mortality rates are impacted upon by day of admission. This could have an impact upon planning future staffing and service provision.

P223

Is symptom-based tailoring of colonic investigation safe?

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Aim: Symptom profiling has been proposed to reduce the number of whole colon investigation (WCI) based on data from cancer screening studies, due to low yield of proximal cancer (0.5%) in patients without broadly defined iron deficiency anaemia or abdominal mass. We aimed to investigate if this approach could be applied safely.
Method: Review of prospectively maintained cancer database and additional retrospective medical note review.
Results: Forty-four patients underwent elective right hemicolectomy between 2014 and 2017 (18 male, median age 75 (range 32–91)). Thirteen patients (30%) presented without iron deficiency anaemia or abdominal mass. Of these 13 patients, 5 patients had one or more gastrointestinal symptoms and 4 patients presented with rectal bleeding and left colonic polyps or positive faecal occult blood tests, which warranted WCI. Three patients had no gastrointestinal symptoms but anaemia which did not fulfil the criteria, and one patient had rectal bleeding alone with no left colonic pathology. These 4 patients' proximal cancer (9%) could have been missed if flexible sigmoidoscopy alone was performed.
Conclusion: The proposed symptom profiling and flexible sigmoidoscopy only approach could have missed between 9–30% of patients with proximal cancer. This approach may not be safe for universal roll out.

P224

Follow-up endoscopy after acute diverticulitis: is it necessary?

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Aim: To determine whether patients admitted with acute diverticulitis at our institution are investigated in line with current ACPGBI guidelines and the carcinoma/adenoma detection rate at follow-up.
Method: Retrospective review of 255 admissions with acute diverticulitis April 2015–March 2017 to Wexham Park Hospital. Evidence of luminal examination (colonoscopy, flexible sigmoidoscopy or CT colonography) performed between 12 months prior and 6 months post admission collected.
Results: 77 had complicated diverticulitis (abscess, fistula or perforation on CT), 119 uncomplicated diverticulitis and 58 were treated without CT. Excluding deaths (4) and surgery within 30 days (26), 36 (68%) in the complicated, 78 (67%) in the uncomplicated and 37 (64%) in the no CT group underwent luminal investigation within the time frame.In the complicated group, 2 colorectal cancers and 1 polyp were found at follow-up. No cancers were found in the other groups, but 3 patients had polyps. No complications were reported. This represents significant findings in 9.7% complicated, 2.7% uncomplicated and 3.6% no CT patients.
Conclusion: Overall only 151 (67%) eligible patients had appropriate investigation. This may reflect varying consultant practice or administrative issues.Small numbers preclude statistical analysis, but this study suggests follow-up endoscopy, especially after complicated diverticulitis, remains important.

P225

Do radiologically inserted intraperitoneal drains delay or prevent surgery in acute complicated diverticulitis?

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Aim: Radiologically inserted intraperitoneal (IR) drains are increasingly used in the treatment of acute complicated diverticulitis. This study assesses their role in preventing the need for surgery.
Method: Retrospective review of 77 admissions with acute complicated diverticulitis between April 2015 and March 2017 to Wexham Park Hospital.
Result: Initial management was conservative (antibiotics) for 51 (66%) patients, IR drain for 9 (12%) and surgery for 17 (22%). The mean age was lower in the conservative group (58) compared to the IR drain (65) and surgery (68) groups, as was the median length of stay (7 days conservative vs 13 IR drain and 22 surgery). Readmissions were 7 (14%) conservative, 3 (33%) IR drain and 0 in the surgery group. 6 (12%) conservative and 5 (56%) IR drain patients went on to require resectional surgery and 1 (2%) conservative group went on to have an IR drain.
Conclusion: This is a small retrospective study, however the high rates of readmission and conversion to surgery suggest that IR drains may delay, rather than prevent surgery in some patients. Careful patient selection for IR drain is essential to ensure optimum patient management.

P226

Risk of colorectal adenocarcinoma in patients with acute diverticulitis: a systematic review and meta-analysis of observational studies

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Aim: The aim of the present systematic review and meta-analysis was to gather, interpret and analyse the literature assessing the prevalence of colorectal cancer in patients with acute colon diverticulitis.
Method: MEDLINE was searched up to November 2nd, 2017. Studies reporting the prevalence of colorectal cancer in patients with diverticulitis were identified. Pooled prevalence was obtained by using random effects models and its robustness tested by leave-one-out sensitivity analysis. Heterogeneity was assessed using the Q-test and quantified using the I^2 value.
Results: Out of 449-screened studies, thirty-one were included, accounting for 50'445 patients. The pooled prevalence of colorectal adenocarcinoma was 1.9% (95%CI: 1.5–2.3%). Patients with complicated diverticulitis were significantly more at risk of having colorectal adenocarcinoma (prevalence: 7.9%, 95%CI: 3.9–15.3%) than those with uncomplicated diverticulitis (prevalence: 1.3%, 95%CI: 0.1–2%), corresponding to a pooled prevalence ratio of 6.7 (95%CI: 2.5–18.3). The pooled prevalences of polyps, advanced adenomas, adenomas and hyperplastic polyps were, 22.7% (95%CI: 19.6–26.0%), 4.4% (95%CI: 3.4–5.8%), 14.2% (95%CI: 11.7–17.1%) and 9.2% (95%CI: 7.6–11.2%) respectively,
Conclusion: The pooled prevalence of colorectal adenocarcinoma of 1.9%. The risk of colorectal adenocarcinoma was markedly higher in patients with complicated diverticulitis than those with uncomplicated diverticulitis.

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P227

Role of C-reactive protein and procalcitonine in colorectal surgery

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Aim: To analyze the relationship between C-reactive protein (CRP) and procalcitonin and its role in the colorectal fistula.
Method: Prospective observational study. A group of 88 patients undergoing surgery scheduled for colorectal pathology from May 2015 to March 2018 were analyzed. All patients who underwent an anastomosis to re-establish intestinal continuity after a segmental resection of the colon or rectum were included. All patients in the study underwent a blood biochemistry with CRP and procalcitonin on the first and fourth days. Patients who underwent a defunctioning stoma were excluded.
Results: 54 men (61.3%) and 34 women (38.7%) were studied. We performed 37 right hemicolectomies (42%), 30 sigmoid coleectomies (34%), 11 left colectomies (12.5%) and 10 low rectal resections (11.4%). 17 patients presented with an anastomotic fistula (19.3%). The values of CRP and procalcitonin of patients who developed intestinal fistula at 72 hours after surgery were higher than those who did not have a fistula. (t-Student test $P = 0.002$ and $P < 0.05$ respectively).
Conclusion: The values of CRP and procalcitonin during the postoperative period of colorectal surgery is a useful tool to predict anastomotic fistula.

P228

Laparoscopic splenic flexure mobilization in sigmoid and rectal resection: A systematic review and meta-analysis of observational studies

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Aim: To evaluate the impact of splenic flexure mobilization (SFM) on anastomotic leak and surgical site infection rates in sigmoid and rectal resection.
Method: Scopus, MEDLINE and Pubmed databases were searched. Anastomotic leak and surgical site infection were the primary endpoints.
Results: Six studies with 12 790 patients were analyzed including 5089 SFM and 7701 non-SFM. The overall bias risk was found to be high. No significant difference was found in anastomotic leak rates when SFM patients were compared to their non-SFM counterparts [OR (95%CI) = 0.96 (0.50–1.82); $P = 0.903$; number needed to treat (NNT)=98]. SFM patients had longer operating time [OR (95%CI) = 4.84 (1.39–16.80); $P = 0.013$] and increased SSI rates when compared to their non-SFM counterparts [OR (95%CI) = 1.21 (1.09–1.35); $P < 0.001$; NNT = 29]. Superficial incisional SSI rates were significantly higher in SFM patients [OR (95% CI) = 1.29 (1.14–1.47); $P < 0.001$; NNT = 53], whereas there was no significant difference found in organ/space SSI rates.
Conclusion: This systematic review found that laparoscopic SFM was not associated with significantly decreased anastomotic leak rates. SSI rates were significantly increased in patients undergoing laparoscopic SFM. This favors individualized decisions rather than routine implementation.

P229

The abdominal wall hernia in laparoscopic assisted surgery for colorectal cancer: midline incision versus transverse incision

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Aim: Abdominal wall hernia is one of the major complications after colorectal cancer (CRC) surgery. In laparotomy, transverse incision (T-I) was recommended to prevent incisional hernia compared to midline incision (M-I). Meanwhile, a previous study showed that laparoscopic assisted surgery (LAS) will reduce the incidence of ventral hernia compared to laparotomy. However, the wound incision for taking bowel is usually M-I in LAS. The clinical significance of T-I was never determined. We performed a retrospective study to evaluate the differences between M-I and T-I in LAS for CRC.
Method: A total 158 patients underwent CRC surgery in our department between April 2014 and September 2016, excluding patients who had previous incision and follow up period under 6 months. The incidence of wound hernia was confirmed objectively by CT-scan.
Results: Number of M-I, T-I and laparotomy were 62, 65 and 31 cases, respectively. The incidence of incisional hernia was significantly lower in T-I (6.2% (4/65)) compared with laparotomy (25.8% (8/31)) ($P < 0.05$). However, it was similar between the laparotomy and M-I (12.9% (8/62), and M-I and T-I, respectively.
Conclusion: Our data suggested that laparoscopic access, especially T-I, might reduce the risk of abdominal wall hernia for CRC patients.

P230

Appropriate antibiotic treatment in acute diverticulitis

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Aim: To review appropriate antibiotic prescribing according to trust guidelines : appropriate antibiotics, appropriate course length, appropriate conversion from iv to oral, correlation with microbiology results and clinical outcomes.
Method: Retrospective review of 84 patients diagnosed with acute diverticulitis clinically or on CT scan. Data from notes, electronic patient's records and electronic drug charts. Twenty-two excluded due to no discharge summary, no antibiotics given, diagnosis reconsidered, readmission.
Results: Adherence to trust guidelines in first line of treatment of 70%. Incorrect prescribing of 30% related to inappropriate association of antibiotics as Co-Amoxiclav+Metronidzole+Gentamicin or single cover with only Co-amoxiclav or only Ciprofloaxcin, and no Gentamicin added. Incorrect length of treatment in 30% with less that 7 days course – 1 patient being readmitted for Hartmann's. Culture results noted resistance to Co-amoxiclav in 3 cases and Ciprofloxacin in 1 case – all appropriate acted on. Inappropriate conversion from iv to oral in 33% of cases. 9 patient had failure of conservative management and required surgery.
Conclusion: Poor adherence to local guidelines is due to frequent change over of staff, poor induction and no immediate availability of guidelines. Hence use of widely available MicroGuide app is encouraged.

P231

The effect of road distance to hospital on stoma reversal rate

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Aim: To investigate whether road distance to hospital affects the probability of living with a permanent stoma after rectal cancer surgery and also the time between index operation and reversal of defunctioning stoma.
Method: All patients diagnosed with rectal cancer in the northern part of Sweden during time period between 1st January 2007 and 31st December 2014 were identified using The Swedish Colorectal Cancer Registry. Data regarding patient characteristics, surgical details (e.g. permanent or defunctioning stoma), pathological assessment and postoperative complications on every patient diagnosed with rectal cancer was retrieved.Addresses and, where applicable, dates for stoma reversal were retrieved from medical record. Road distance between household and hospital was obtained using Google Maps™.Socioeconomic data were retrieved from Statistics Sweden and matched against identified cases to strengthen the study.
Results: 1018 unique cases was identified and analyzed.
Conclusion: This study answer the question whether road distance is a risk factor for permanent stoma after rectal cancer surgery. Compared to similar studies this is the first one analyzing road distance to hospital as a risk factor for permanent stoma and delayed stoma reversal.

P232

The effect of road distance to hospital on quality of life in stoma patients after rectal cancer surgery

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Aim: To investigate the effect of distance to hospital on quality of life in rectal cancer patients that have had or have a stoma in a sparsely populated region in Sweden
Method: In the sparsely populated region of Västerbotten Sweden, all patients diagnosed with rectal cancer in during time period 2007–2014 were identified using The Swedish Colorectal Cancer Registry. Data regarding patient characteristics, surgical details (e.g. permanent or defunctioning stoma) was retrieved. All patients that either had or had have a stoma were sorted out. The previously validated form for Quality of life in cancer patients EORTC QLQ 29+30 were sent out to 186 stoma patients.

Addresses were retrieved from medical record. Road distance between household and operating hospital was obtained using Google Maps™.Socioeconomic data were retrieved from Statistics Sweden and matched against identified cases to strengthen the study.
Results: The response rate was 69%.128 unique cases was identified and analyzed.
Conclusion: This study answer the question whether road distance affect quality of life in stoma patients after rectal cancer surgery. To our knowledge no similar study has previously been done.

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P233
Availability of resources on smartphones and social media for patients with anal cancer

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Aim: Anal cancer is a rare and stigmatized diagnosis, which makes it important that high quality online information and support exist. As literature on this subject is scarce: we conducted this study.
Method: App stores were searched to identify apps specific to anal cancer. The five most common cancers by UK incidence were also entered to provide comparison. To investigate social media, we used 'Symplur': an online repository of 'Twitter' hashtags which generates metrics on popularity.
Results: The 'anal cancer' search revealed 8 apps to be anal cancer specific. The mean number of relevant apps for the high incidence cancers was 122 (range 71–233). Though 'Symplur' did not have '#analcancer' on its system, causing the lead investigator to register it, an alternative anal cancer hashtag: '#ancsm' had just 6 tweets associated with it, compared to a mean of 3337 (range 297- 8252) for the commoner cancers.
Conclusion: This study found a gross inequity of available apps to support patients with anal cancer. Engagement in disease specific or relevant anal cancer hashtags was also lacking. To address this, we need greater public awareness about anal cancer, which requires more charity involvement and professional contribution to both social media and app-based material.

P234
Assessing the outcomes of a Virtual Clinic Pathway at a single centre participating in the Accelerate, Coordinate, Evaluate (ACE) Programme

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Aim: Straight to test (STT) enables an accelerated diagnostic process for suspected colorectal cancer from primary care. We aim to assess our results compared to the current pathway.
Method: Between July 2015 and December 2017, specially designed GP referral proformas were assessed by a colorectal consultant or nurse specialist daily. Timings from referral to investigation and treatment for STT patients and one's first seen in outpatients were collected.
Results: 2406 referrals reviewed, 121 cancers (5%) diagnosed, mean age 68.8 (SD = 12.31), male to female ratio (10:7). 59.2% diagnosed through STT, 41.3% after clinic review. Overall 67.8% treated and 62-day target achieved in 69.5%. The rate of achieving the 62-day target was 72.4% STT and 62.5% from clinic ($\chi^2(1)$ =0.787, P = 0.375). The proportion of patients receiving curative treatment in the STT group is 80.3% compared to 48% in the clinic group ($\chi^2(1)$=13.816, P = 0.0002).
Conclusion: Our conversion rate is within the published figures of 2%–9%. The STT pathway does not affect our 62-day target rates but allows a greater number of fit patients to go straight for investigation, which is reflected in the significantly higher number of patients treated in the STT group.

P235
Management of colorectal anastomotic leaks at high-volume university hospital

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Aim: Anastomotic leak is the most feared complication in colorectal surgery. We hypothesized that the type of leak management might have an impact on the final outcome of treatment.
Method: We analyzed management of colorectal anastomotic leaks at high-volume university hospital in the period of 2016–2017 based on the data from prospectively maintained complications-database established for quality assurance purposes.
Results: Thirty six cases of anastomotic leaks were identified in the observed time period. In 7 (19.4%) cases the leaks were managed by anastomotic repair alone, in 3 (8.3%) cases by proximal fecal diversion (with or without anastomotic repair), in 25 (69.4%) by anastomotic breakdown with end-ileo/colostomy and in one (2.8%) case by lavage and drainage. The average total number of surgical interventions in each of the groups were 2.1 (1–5), 1.3 (1–2), 1.68 (1–5) and 1, respectively. The median length of hospital stay was 27 (13–67), 20 (15–39), 30 (8–206) and 25 days, respectively. The mortality rates were 14.3% (1/7), 0% (0/3), 16% (4/25) and 0% (0/1), respectively.
Conclusion: Due to heterogeneity of the patient's population and many different surgical techniques employed, no firm conclusion on the optimal surgical management of anastomotic leak can be drawn from our data.

P236
Parastomal hernia repair; rarely performed and seldom reported: results from a national survey

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Aim: Parastomal hernia (PSH) is common but population-based studies showing frequency and outcome of PSH repair in surgical practice are rare. The purpose of this study was to identify patients undergoing procedures for PSH in Sweden and define risk factors for complication and recurrence.
Method: A wide search of the Swedish National Patient Register 1998–2007 for all possible PSH repairs using surgical procedure codes. Records of all patients identified were reviewed and those with a definite PSH procedure were included and analyzed.
Results: Seventy-one patients were identified after reviewing records. The most common reason for surgery was cosmetic and most frequent method was relocation of the stoma. PSH recurrence rate was 18% during follow-up of a minimum 2 years. Overall, a surgical complication occurred in 32%. Possible risk factors were analyzed: emergency surgery, gender, age, indication for surgery, and method of surgery; none of which was significant.
Conclusion: The frequency of PSH procedures was much lower than suggested by previous studies. The number of procedures per surgeon was even lower than expected. No specific risk factor could be identified. PSH auditing in the form of a nationwide quality register should be mandatory. Centralization should be considered.

P237
The effect of preventive surgical site infection (SSI) bundle on infection rates following colon and rectal resections

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Aim: To evaluate the effect of preventive SSI bundle, which has been widely used across Europe since 2009, on the SSI rates following colon and rectal resections.
Method: Data charts of patients who had undergone colon and rectal resections from January 2012 to December 2017 were reviewed retrospectively. SSI rate was calculated. Factors that could predispose patients to SSI were analyzed. The preventive bundle is based on principles described by Haley et al (Am J Epidemiol 1985;121:206–15).
Results: There were 891 patients (326 female, 565 male) with a mean age of 59. Emergency surgery was performed in 15% of patients. and 67% of patients had malignancy. SSI rate was 3.9%, compared to11.6% before the routine use of preventive bundle. There were no difference in mean age, BMI, gender ratio, ASA scores, diabetes mellitus rates, smoker rates, number of patients with COPD, malnutrition or immune suppression, length of pre and postoperative hospital stay, use of mechanical bowel prep, rate of blood transfusion, emergency status or bowel obstruction rates between patients with of without SSI.
Conclusion: The preventive SSI bundle is an effective approach for reducing SSIs.

P238
Post colonoscopy colorectal cancer rates in Denmark: colonoscopy quality in an international perspective

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Aim: The quality of colonoscopy is critical for cancer diagnosis. We examined the post colonoscopy colorectal cancer (PCCRC) rate to compare performance in Denmark with the English NHS and Sweden.
Method: We used national registers of procedures and cancers to examine the risk of PCCRC. Several methods for PCCRC-rate calculations were applied to allow direct comparison. Poisson regression analysis was performed to identify factors associated with PCCRC.
Results: The Danish PCCRC-rate was 2.5%–9.1% depending on method used for calculation. The found PCCRC-rate is significantly higher (95% CI) than in the NHS using three different methods (RR 1.08–1.29) and in Sweden (RR 1.13). PCCRC was significantly (95% CI) associated with (older) age at the time of colonoscopy (RR 1.55), diverticulitis (RR 3.24), Charlson comorbidity score (RR 1.25), ulcerative colitis (RR 3.40), hereditary cancer (RR 5.23), large tumour size (RR 0.70) and location in the transverse (RR 1.55) or ascending colon (RR 1.84).
Conclusion: The PCCRC-rate in Denmark is higher than comparable countries. Differences in colonoscopist training and certification is likely to be important. Systematic surveillance of colonoscopy performance appears justified and international collaboration to ensure comparative evaluation is necessary.

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P239

The current state of colorectal surgical training in Italy: a survey of the young group of the Italian Society of Colorectal Surgery (Y-SICCR)

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Aim: Y-SICCR aimed to investigate satisfaction and perceived quality of training in colorectal surgery (CS) among Italian young surgeons.
Method: An online survey was circulated via social media among Italian trainees and surgeons who had recently completed general surgery specialisation.
Results: Answers were received from 122 surgeons. Only 38% received program of training yearly. Fewer than 10% performed >100 procedures for colorectal cancer over the years of training. There were differences in number of procedures performed according to gender, geographical region and year of training. By the end of training, none had operated on an adequate number of patients with anorectal disease. More than half found their centre to be inadequate in training in IBD. Eighty-six percent suggested that scientific societies should be involved in training. Half (51%) had undertaken postgraduate programs in CS and 33% spent a period of training abroad. 87% found remote training useful. Fifty-five percent were interested in obtaining the EBSQ diploma in Coloproctology.
Conclusion: Italian training programs should be revised giving optimal exposure of trainees to colorectal and anal pathology. Societies need to cooperate to ensure that training maintains the standards of other European nations and is offered to all trainees at a consistent level.

P240

Retrospective multicenter study of post-operative stenosis after stapled colorectal anastomosis

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Aim: To assess the prevalence of stenosis after stapled colorectal anastomosis, performed either in elective or emergency setting, for benign or malignant disease, and to evaluate treatment profiles.
Method: This retrospective study was conducted in a large Italian North-Eastern area (Triveneto), over a 12-month period (January-December 2015). Patients' characteristics and surgical technique details were recorded, along with data on the prevalence of stenosis and its treatment. Patients with mid or low rectal resection and/or neoadjuvant chemo-radio therapy and/or diverting stoma were excluded.
Results: Twenty-eight surgical units were enrolled in the survey, accounting for over 1400 patients studied. Fifty percent of the units performed >70% of the colorectal resections laparoscopically and 7.5% of the procedures were emergency. Less than 60% of the units planned regular endoscopic follow-up after colorectal resection. Anastomotic stricture was recorded in 2% of the patients; 88% of the stenoses were diagnosed within 6 months from surgery. Only one anastomotic stricture required re-do surgery.
Conclusion: This study confirms that frequency of colorectal anastomotic stenosis is low. Treatment strategies vary according to surgeons' and endoscopists' preferences. Endoscopic dilatation is often preferred but re-do surgery is required in some cases.

P241

Scientific research during medical training in Portugal: a trainee prospective survey

PT Surg Portuguese Surgical Research Collaborative

Portugal

Aim: The notion that scientific research is not valued during medical training in Portugal has been expressed but lacks documentation. We aimed to identify the trainee's perspectives on scientific research and potential obstacles to be overcome.
Method: Prospective online survey directed to Portuguese trainees from all specialties and regions of Portugal, available for 20 days during April 2018. Results were analysed with descriptive statistics.
Results: 270 trainees answered the survey. 59.2% of the residents had no publications as first author and 48.9% had none as co-author. Additionally, just 38.9% of trainees have participated in multicentric projects and only 22.2% were familiar with the collaborative research model. The most common limitation was lack of dedicated time (68.9%), absence of support from senior staff (47%) and lack of knowledge of research metodology (46.3%). As to factors that would allow higher participation, 85.6% of trainees mentioned time dedicated to research, followed by the availability of support in the design of research projects (69.6%). Only 7.4% of trainees found scientific research not to be essential during residency.
Conclusion: These results clearly identify the need for a plataform to support and help develop scientific research during medial training.

P242

Risk factors for colorectal anastomotic leak: 5 year single center experience

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Aim: Anastomotic leak is a severe complication of colorectal surgery occuring in about 11% of cases. The aim of this observational study is to evaluate main risk factors for anastomotic leakage in patients with colorectal cancer.
Method: A retrospective analysis of prospectively maintained database was performed including the patients who underwent colorectal resection due to colorectal tumors from 2013 to 2017. All patients undergoing primary anastomosis were included. Univariate statistical analysis of anastomosis leak risk factors was performed.
Results: 534 patients were included in this study. Anastomotic leakage occurred in 38 cases (7.1%). Statistically significant risk factors of anastomotic leakage in our study were: renal failure ($n = 2$, 5.3%, $P = 0.047$), arrhythmia ($n = 7$, 18.7%, $P = 0.035$), obesity ($n = 9$, 23.7%, $P = 0.006$), manual anastomosis forming technique ($n = 14$, 36.8%, $P = 0.009$), N1-N2 dissemination in lymph nodes according to TNM staging ($n = 10$, 26.3%, $P = 0.023$).
Conclusion: The results of this study shows an increased risk for anastomotic leakage for patients with renal failure, cardiac rhythm disoders, obesity and metastasis in lymph nodes. Manual anastomosis formation technique was associated with an increased risk also.

P243

Is robotics more cost-effective than standard laparoscopy in colorectal patients? A systematic review

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Aim: To determine the cost-efficacy of robotic surgery in comparison to laparoscopic surgery in patients with colorectal disease.
Method: A systematic literature review was performed in the Pubmed and Embase databases. Date range 2003–2018. All identified articles were screened and checked for eligibility by two authors. In addition, literature was sought by screening references of eligible articles. Studies were included if they reported cost, included a comparator group to robotic surgery and included only colorectal patients
Results: 145 articles were identified of which 23 fulfilled the eligibility criteria. Due to data heterogeneity: different currencies, attribution of costs (patient cost *vs* infrastructure), matching, different time periods, different machines, different surgical techniques, a narrative review was performed. Robotic surgery was found to cost significantly more in 18 papers (Range £5341–£1699), 5 papers found no difference in cost. The majority of papers did not report a reduction in length of stay or complication rate.
Conclusion: The current data indicates that robotic is more costly than open and laparoscopic with no significant reduction in length of stay or overall complication. Given the heterogeneity of the data it is not possible to perform a meta-analysis

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P244

Identifying patients with right iliac fossa pain at very low risk of appendicitis: Prospective, multicentre validation and calibration of risk scores

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Aim: To identify the optimum risk prediction model for identifying patients presenting with right iliac fossa (RIF) pain who may be suitable for early discharge.
Method: Systematic review to identify appendicitis risk prediction models. Models were validated in a prospective cohort study of consecutive patients aged 16–45 years presenting with RIF pain to UK and continental (Spain, Italy, Portugal, Ireland) acute hospitals. The ability of scores to identify patients at low risk of appendicitis was tested by calculation of failure rates (proportion of patients in low risk group with a final diagnosis of appendicitis) and efficiency (overall proportion of non-appendicitis patients classified as low risk). Consensus process identified maximum acceptable failure rate to be 5%.
Results: Fifteen risk prediction models were identified. The cohort study included 6912 patients across 270 centres. Eleven models showed good discrimination (AUC >0.7). In UK females, the Adult Appendicitis Score achieved the highest efficiency (63%) with a 4.0% failure rate in low risk patients. No scores attained sufficient efficiency in UK males, continental females, or continental males.
Conclusion: Risk stratification identifies a large proportion of UK women presenting with acute RIF pain as being at low risk of appendicitis.

P245

National audit of the management of right iliac fossa pain in children

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Aim: To audit the management of right iliac fossa (RIF) pain in children.
Method: Data were collected prospectively for children (<16 years) presenting with RIF pain or suspected appendicitis to United Kingdom hospitals. The primary outcome was the proportion of patients undergoing appendicectomy. Secondary outcomes were the laparoscopy, negative appendicectomy rates (NAR, removal of a histologically normal appendix) and perforation rate (perforated appendix identified intra-operatively).
Results: A total of 910 females and 870 males were captured across 133 centres. Overall, 29.0% of female and 39.2% of male patients underwent appendicectomy. Laparoscopy rates were 68.8% for 0–5 year olds, 52.1% for 6–10 year olds and 75.3% for 11–15 year olds. NAR in females and males amongst 0–10 year olds were 14.0% versus 8.3%, respectively ($P = 0.16$) and 23.0% versus 16.3% ($P = 0.12$) amongst 11–15 year olds. Perforation rate in females and males amongst 0–10 year olds were 58% versus 51%, respectively, and amongst 11–15 year olds 41% versus 37%.
Conclusion: The majority of children admitted with RIF pain do not undergo appendicectomy. NAR increases with age, reaching 25% in adolescent females. Strategies should be developed to avoid admissions and operations for children who do not have appendicitis.

P246

Single incision laparoscopic surgery for colorectal emergencies

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Aim: Laparoscopic colorectal surgery has become the standard of care in the elective setting. Its adoption in the emergency setting has been slow, despite a number of emerging reports of its benefits. We investigate the role of single incision laparoscopic surgery (SILS) in emergency surgery.
Method: All emergency patients undergoing an emergency SILS operation between January 2014 – December 2017 were identified. Clinical, operative and post-operative variables were extracted.
Results: A total of 55 patients were identified. The commonest indications for surgery were small bowel obstruction ($n = 18$, 32.8%), colorectal cancer ($n = 8$, 14.5%) or Crohns disease ($n = 814.5\%$). Conversion rate was 5.5%. Intra-operative complication rate was 1.8%. Post-operative morbidity was 38.2% ($n = 21$), with ileus being the commonest complication ($n = 3$, 5.5%). The highest grade of Clavien-Dindo complication was grade II ($n = 9$, 16.4%). Median length of stay was 11 days (range 2 – 115). Re-operation and re-admission rates were 1.8% and 9.0% respectively. Overall 90-day mortality was 7.3%.
Conclusion: SILS surgery is safe and feasible in the emergency colorectal setting, and should be considered as an alternative option in appropriately selected patients.

P247

Transanal total mesorectal excision: how many cases are necessary to overcome learning curve?

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Aim: To analyze the learning curve for transanal total mesorectal excision (Ta TME).
Method: Patients with mid and low rectal cancer at stage pT0-2N0M0 $n = 9$ (20.5%), pT2-4aN1a-2bM0, $n = 34$ (77.3%), pT3N2bM1a $n = 1$ (2.2%) were selected for (Ta TME). Outcome was analyzed in the first 22 *vs* last 22 patients in terms of intraoperative complications, conversion rate and time of transanal stage of surgery.
Results: There were 44 (16 female) patients at mean age ± SD (range) of 58.5 ± 11.0 (39–76) years. The number of intraoperative complications ($n = 3$) and conversion rate ($n = 2$) was too low to reach statistical significance, though all intraoperative complications and conversions happened in the first 22 patients. The mean ± SD (range) length of the operation decreased from 141.2 ± 43.1 (60–200) min in the first 22 patients to 73.3 ± 23.1 (40–130) min ($P = 0.0001$).
Conclusion: The results of our study suggested a number of 20 transanal TME as necessary for learning curve.

P248

Antibiotic prophylaxis in rectal cancer surgery: oral with intravenous versus intravenous antibiotics. Preliminary results of randomized trial

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Aim: To assess the efficacy of oral antibiotics in reduction of surgical site infection (SSI) in rectal cancer surgery.
Method: 240 patients planned for rectal cancer surgery will be included into the trial (NCT03436719) and randomized 1:1 to compare preoperative oral metronidazole 1500 mg/ erythromycin 1500 mg and intravenous (IV) cefoperazone 1000 mg with preoperative IV antibiotic prophylaxis only. The primary endpoint is the overall SSI rate.
Results: Since November 2017, 60 patients [28 male; mean age (SD) 63.7 (11.0)] operated on rectal carcinoma were randomized for oral+IV ($n = 30$) or IV antibiotics only ($n = 30$). There were 22 (73.3%) colorectal anastomoses and 8 (23.7%) APE/Hartmann (13 laparoscopic) in the oral+IV group vs 21 (70.0%) and 8 (30.0%) in the IV group (11 laparoscopic). The SSI rate was 3.3% (1/30) in the oral+IV group [anastomotic leak (AL) Class B $n = 1$ in accordance with International Study Group of Rectal Cancer] *vs* 13.3%(4/30) [AL class B $n = 1$, AL class C $n = 2$, wound infection $n = 1$] in the IV group ($P = 0.35$).
Conclusion: Preoperative oral+IV antibiotics seem to have an advantage over routine IV antibiotic prophylaxis resulting in a decreased SSI rate. Further recruitment of patients into the trial is necessary.

P249

3D reconstructions to guide decision-making in advanced colorectal surgery – posterior extenterations

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Aim: Exenterative surgery for advanced colorectal cancer can be challenging for experienced surgeons and very difficult for trainees or patients to comprehend. Our aim was to create 3D reconstructions that would expedite understanding.
Method: Standard axial T2-weighted MRI sequences were acquired and retrieved from our picture archiving and communication system, and anonymised. DICOM images were imported onto validated open-source segmentation software where a specialist gastrointestinal radiologist performed segmentation of the tumour and surrounding anatomy.
Results: 3D reconstructions were created for two cases where the patients required posterior pelvic exenteration. In one case, removal of the presacral fascia was required, whereas the other case necessitated a sacrectomy. The images were exported to a PDF viewer to aid accessibility, enabling manipulation of the image in real time and to add or subtract structures, allowing better comprehension of anatomical relations – tumour, bowel, vessels, levator plate, piriformis, bladder/ureters, sciatic nerve, acetabulum, ligaments, presacral fascia and sacrum.
Conclusion: 3D reconstruction of complex cancers is feasible and has the potential to not only improve surgical understanding and decision-making, but also to augment training and aid patient comprehension for informed consent.

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P250

Results in colon surgery after the establishment of a multimodal rehabilitation programme

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Aim: To present the results of our series after establishing a multimodal rehabilitation programme (PRM) in colon cancer.
Method: Retrospective observational and descriptive study of 236 patients who had elective colon surgery before PRM (Group NFT) between June 2013-June 2016 and after the establishment of this (FT group) between June 2016 and December 2017.
Results: 236 patients with oncological colonic surgery with primary anastomosis, 159 NFT and 77 FT were included. There were no differences in age, sex, and comorbidities between the groups. The approach was mainly open in NFT and laparoscopic in FT, and circular mechanical anastomosis was the main one in both. There were no differences in terms of anemia and hypoalbuminemia. The FT group presented fewer complications (FT 24.7%-NFT 44.2%, not significant). Significant difference was found when classified according to Clavien (Clavien IIIb FT 0.8%-NFT 8.9% $P = 0.01$). Anastomotic leakage rate was lower in the FT (NFT 6.8 vs FT 0.8% P = 0.015) as were paralytic ileus, hemorrhage and wound infection, but without significant difference. Median hospital stay was 7 days NFT and 5 days FT.
Conclusion: The establishment of a PRM in colon surgery in our hospital has led to a reduction of complications and a shorter hospital stay.

P251

Risk factors of anastomotic leak and morbidity and mortality after ileocolic anastomosis

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Aim: To identify pre and intraoperative risk factors for anastomotic leak (AL) in ileocolic anastomoses, mainly related to the type of technique, and risk factors for 60-day postoperative morbidity and mortality.
Method: Retrospective institutional study of patients with an ileocolic anastomoses performed between November 2010 and September 2016. Demographic and surgical data, and characteristics of the pathological illness were assessed in 477 patients.
Results: 53.7% of the anastomoses were handsewn and 46.3% stapled. AL was diagnosed in 8.8%; 36 were considered as major AL (7.5%). In the multivariate analysis, male sex, arterial hypertension and perioperative transfusion were found to be independent risk factors for major AL. The global 60-day complication rate was 27.3%. Male gender, diabetes, smoking habit, and perioperative transfusions were identified as independent risk factors for postoperative morbidity. The 60-day-mortality rate was 3.1% and, in the multivariate analysis, only conversion to open surgery turned out to be an independent risk factor for mortality.
Conclusion: The largest single centre series of ileocolic anastomosis highlight poor preoperative nutritional status as an important risk factor for AL, and postoperative morbidity. This study confirms that hand-sewn anastomoses do not have an increased risk of AL.

P252

The use of botulinum toxin a combined with component separation in massive abdominal wall reconstruction (AWR) with enterocutaneous fistulas (ECF)

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Aim: Fascial closure in contaminated AWR can decrease hernia and fistula recurrence. Botulinum Toxin A (BTA) can facilitate closure in patients with massive defects. We describe the use of BTA in AWR in the setting of enterocutaneous fistula (ECF).
Method: Patients with ECF underwent preoperative CT guided BTA injections to bilateral oblique muscles before AWR. Demographics and outcomes were evaluated.
Results: Six patients with ECF underwent AWR with preoperative BTA injection. Mean BMI was 34.3 ± 5.1 kg/m^2, three had diabetes, two had MRSA infection, and two were on corticosteroids. The patients had mean 5.0 ± 2.1 previous operations. Preoperative CT demonstrated massive mean defect and hernia size (defect area: 385.2 ± 128.9 cm^2, volume: 2170.7 ± 1427.3 cm^3, with 37% of visceral volume herniated). Five of six patients had biologic mesh (mean size 780 ± 164.3 cm^2) placed in the preperitoneal plane. BTA with component separation achieved primary fascial closure in all patients. After repair, one patient developed seroma requiring drainage, and two developed wound infections requiring drainage and antibiotics. No fistulas or hernias have recurred.
Conclusion: BTA injection of abdominal muscles assists AWR of massive defects in the setting of ECFs, facilitating fascial closure AWR where component separation alone may not be adequate.

P253

The lack of consensus on emergency repairs of parastomal hernias

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Aim: To assess surgeons' current perceptions and practice regarding emergency parastomal hernia (EPH) repair.
Method: A questionnaire was distributed amongst consultants working in hospitals in a European capital, to assess local preferences.
Results: We received replies from 20 surgeons, practicing across 8 university & non-university hospitals. 80% of the surgeons perform only 1–2 EPH repairs per year, with the other 20% doing 3–5. 90% perform these repairs after diagnostic CT and patient optimisation. There is a strong preference for open repair (94%) versus laparoscopic repair. 35% always use mesh for EPH repair. The remaining 65% decide on mesh use depending mainly on level of contamination and presence of ischaemia or necrosis found intra-operatively. Biological mesh was the most common choice, in particular Strattice™. Factors influencing mesh choice included level of contamination, presence of ischaemia/necrosis, hospital resources & mesh availability. All surgeons reported they would consider using guidelines for EPH repair if they were available.
Conclusion: Our data demonstrates variance in practice with regards to EPH repair. There are currently no guidelines on this important topic. We aim to collect similar data across the UK and Europe to assess trends, with an aim to developing EPH guidelines in the future.

P254

A systematic review of endoluminal vacuum-assisted therapy as a salvage treatment for rectal anastomotic leakage

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Aim: This review aimed to evaluate the safety and efficacy of endoluminal vacuum-assisted therapy (EVT) in the treatment of colorectal anastomotic leakage (AL) and rectal stump insufficiency after Hartmann's procedure.
Method: A search of the literature was performed in compliance with the PRISMA guidelines.
Results: Seventeen studies including 276 patients of mean age of 61.6 years were included. The mean success rate was 85.3% with a median duration until complete healing of 47 days. The weighted mean rate of stoma reversal was 75.9% (95% CI:64.6–87.2). Twenty-five patients (9%) required additional interventions after EVT. The median complication rate across the studies was 9.7%. The potential effect of clinical confounders on the failure of EVT was investigated using the random effect meta-regression model. Variables that were significantly associated with failure were: preoperative radiation therapy, lack of stoma, complications, and male gender.
Conclusion: EVT had a high and satisfactory success rate, reducing the need for additional surgery combined with a high rate of stoma reversal which may render EVT a cost-effective option. Optimal results could be achieved when EVT is offered to patients with a stoma and suffering from low-pelvic AL without sepsis.

P255

Transanal tube drainage as a conservative treatment for anastomotic leakage following rectal resection

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P256

The role of transanal tube drainage as a mean of prevention of anastomotic leakage

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Aim: To assess the role of transanal tube drainage in preventing anastomotic leakage (AL).
Method: Consecutive patients who underwent low or ultralow anterior resection for rectal cancer were enrolled between 01/2015 and 03/2018. After the creation of the anastomosis, a de-Pezzer catheter was placed transanally, secured to the buttocks, and connected to a urine bag to allow monitoring the amount and the color of the drainage. The catheter was removed on the 3rd day postoperative if the volume collected was insignificant. Patients who were suspected to have AL underwent CT

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with rectal contrast to assess the integrity of the anastomosis. The primary outcome was the incidence of AL.
Results: Forty-four patients were included. There were only 2 patients who developed AL (5%), both leaks were of subclinical type as an ileostomy had been made at the time of the initial procedure. They were treated conservatively with the transanal tube left in place, combined with intravenous antibiotics.
Conclusion: Transanal drainage as a mean of AL prevention is safe, cheap, and effective. It helps to drain the anastomosis and decrease the intraluminal pressure. Furthermore, in patients who will develop AL it may be used as a means of conservative management.

P257
Laparoscopic peritoneal lavage drainage (LLD) in the treatment of purulent and faecal peritonitis complicating colonic diverticular disease

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Aim: To improve the results of treatment of patients with Hinchey stage III-IV by laparoscopic management.
Method: 178 patients who underwent surgery for complicated forms of colonic diverticular disease were studied. 142 (74.4%) had urgent operations; 59 of them (41.4%) were performed by using videoendoscopic equipment and 83 (58.6%) operations were performed by the traditional open method. 17 (28.8%) patients with Hinchey I underwent diagnostic laparoscopy, 15 (25.4%) patients with Hinchey II-III had LLD (without stoma). LLD with laparoscopic sigmoidostomy for perforated diverticulitis was used in 21 (35.6%) cases with Hinchey III-IV.
Results: LLD had a shorter hospital stay of 7 +1.9 days (Hartmann's procedure, 12 +2.1; primary anastomosis, 13 +3.1). The videolaparoscopic group had fewer complications −4 (17.4%), (Hartmann's procedure −10 (31.3%), primary anastomosis −4 (25.0%)) There was no mortality in the LLD group (mortality after Hartmann's procedure, 5 (15.6%) and after primary anastomosis with stoma or without it, 1 (6.25%)).
Conclusion: The study found advantage in using LLD in the operative treatment of patients with complicated colonic diverticular disease of Hinchey stage III-IV.

P258
Effectiveness of preoperative CT-modelling of vascular anatomy for extended lymph node dissection

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Aim: The aim of the study was to assess the sensitivity of preoperative CT modelling of mesenteric vascular anatomy to assist extended D3 lymph node dissection in colorectal cancer surgery.
Method: Patients who underwent surgical treatment for primary colorectal cancer in the Clinic of Coloproctology and Minimally Invasive Surgery of Sechenov University between January 2018 and March 2018 were prospectively recruited in this study. Their preoperative CT scans of abdomen with intravenous contrast were compared with intraoperative findings to estimate the sensitivity of preoperative CT-modelling of vascular anatomy. CT–scans were examined by non-radiologist specialists.
Results: Data of 37 patients were analyzed. In the cohort were 8 patients who underwent surgery with extended lymph node dissection for right colon cancer and 29 patients operated for left colon and rectal cancer. The sensitivity of preoperative CT-modelling of vessels was 94.5% (100% for right colon cancer and 93.1% for left colon cancer). In two cases there were mistakes in preoperative visualization of sigmoid arteries' embranchment.
Conclusion: Preoperative CT-modeling of vessels anatomy has high sensitivity and can simplify intraoperative identification of vessels during extended lymph node dissection for colorectal cancer.

P259
Macroscopic accuracy in identifying hyperplastic polyps

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Aim: To compare the macroscopic assessment of polyps by 4 experienced colonoscopists with the histological diagnosis.
Method: 4 experienced colonoscopists in our department were chosen. Their impression of the polyps, removed at the time of the procedure, was compared to the histology.
Results: Of the 131 polyps that were thought to have been hyperplastic at the time of removal, 32 and 31 small, 5 and 22 large polyps were HP and SSL, respectively. Some had mixed histology. The remainder were adenomas.

Worryingly, of the 50 polyps that could have been left behind in the left colon/rectum as they were less than 10 mm and 'hyperplastic', 26 were significant with precancerous potential. 5 were adenomas.
Conclusion: Further training is needed to help distinguish true hyperplastic polyps. All polyps should be removed until such expertise is developed.

P260
International variation in use of imaging for patients presenting with right iliac fossa pain

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Aim: To investigate variation in utilisation of diagnostic imaging for patients presenting with right iliac fossa (RIF) pain across five countries.
Method: Prospective observational cohort study of adult (16 years and above) patients presenting with RIF pain. The primary endpoint was overall imaging rate, including computed tomography (CT), magnetic resonance (MRI), and ultrasound. The secondary endpoint was the negative appendicectomy rate (NAR; removal of histologically normal appendix).
Results: Data were collected in Ireland/UK ($n = 7665$; 169 centres), Italy ($n = 782$; 50 centres), and Spain/Portugal ($n = 1046$; 55 centres). Imaging rates were lower in Ireland/UK (women: 74%, men: 41%) than in Italy (women: 87%, men: 84%) and Spain/Portugal (89% for both women and men). Overall CT and MRI scans rates were similar across countries, but ultrasound was more commonly used in Italy (77%) and Spain/Portugal (81%) than Ireland/UK (46%). The overall NAR was higher in Ireland/UK (16%) than in Italy (3%) and Spain/Portugal (6%).
Conclusion: Whilst rates of CT and MRI imaging were similar across the five countries, the NAR was lowest in Italy and Spain/Portugal. It may be possible to decrease the NAR in Ireland/UK without increasing the rate of CT scanning.

P261
Non-response on conservative treatment of acute sigmoid diverticulitis: assessment of clinical and radiological predictors

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Aim: To identify predictors for non-response to primarily conservative treatment (CT) in acute diverticulitis (AD) of the colon.
Method: Consecutive patients, hospitalized between 10/2009 and 11/2015 for AD were included. Non-response was defined as failure of CT with progression of the disease and need for acute surgery. A retrospective chart review as well as a standardized follow-up and quality of life assessment by phone interview and use of SF36 questionnaire was conducted. Computed tomography scans were additionally reviewed by two radiologists.
Results: 392 patients (184 M:208 F) underwent overall 429 hospitalizations. Complicated disease was diagnosed in 120 patients (28%). 15 patients (3.5%) underwent surgery for non-response. Within multivariate analysis CRP >200 mg/l at any time of the hospital stay (Hazard Ratio 5.4; 95% CI 1.5 – 19.8, $P = 0.011$), progression of initial CRP-level (HR 4.3; 95% CI 0.88– 21.3, $P = 0.071$) and complicated diverticulitis at initial CT-scan (HR 13.8; 95% CI 1.7 – 112.6 $P = 0.014$) were associated with a higher risk for non-response.
Conclusion: To date, no comparable study analyzed clinical and radiological predictors for non-response. CT is highly successful in the treatment of AD. Early identification of non-responders is essential for timely surgical treatment and prevention of complications.

P262
Influence of sigmoid colectomy on quality of life in patients with uncomplicated and complicated diverticulitis of the colon

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Aim: To evaluate post-therapeutic quality of life in patients with uncomplicated diverticulitis and diverticulitis, complicated by pericolic micro- or macro-abscess with and without surgical treatment.
Method: Data of consecutive patients with uncomplicated and complicated diverticulitis of the colon, hospitalized between 10/2009 and 11/2015 were analyzed. Quality of life assessment was conducted prospectively by standardized phone interview, using the SF36-questionnaire. Patients with perforated disease and peritonitis were excluded.
Results: 392 patients (184 M:208 F) underwent overall 429 hospitalizations. Completed follow-up and quality of life assessment is available in 69%. Cases were distributed as follows: uncomplicated disease: operated patients (OP): $n = 47$; not operated patients (nOP): $n = 163$. Diverticulitis, complicated by micro-abscess

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(<1 cm): OP: $n = 40$; nOP: $n = 23$. Diverticulitis, complicated by macro-abscess (>1 cm): OP: $n = 32$; nOP: $n = 4$. In both groups, results of all SF36 categories were without significant difference.
Conclusion: Sigmoid colectomy has no influence on quality of life in patients with uncomplicated diverticulitis and with diverticulitis, complicated by micro- or macro-abscess. To avoid potential perioperative complications and unnecessary health related costs, surgical treatment should only be administered in cases of reduced preoperative quality of life.

P263
The impact of intravenous contrast on post-operative acute kidney injury following major gastrointestinal and liver surgery

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Aim: Uncertainty regarding the risk of contrast-induced nephropathy in the perioperative period may result in computed tomography (CT) imaging being delayed or declined. This study aimed to determine the association between intravenous contrast exposure and post-operative acute kidney injury (AKI).
Method: This is a secondary analysis of a prospective, multicentre cohort study of UK and Irish adults undergoing gastrointestinal resection, reversal of stoma, or liver resection. The primary endpoint was the 7-day post-operative AKI rate. Pre-operative CT intravenous contrast exposure was recorded if administered up to 7 days preceding surgery and post-operative exposure was recorded up to 7 days following surgery. Results of multivariate logistic regression models are reported with odds ratios (OR) and 95% confidence intervals (CI).
Results: There were 5745 patients included from 173 centres. Overall, 14.5% ($n = 834$) patients received contrast pre-operatively, and 12.9% ($n = 740$) post-operatively. Following adjustment, AKI was not associated with either pre-operative (OR: 1.15, 95% CI: 0.86–1.53, $P = 0.345$) or post-operative (OR: 1.28, 95% CI: 0.99–1.63, $P = 0.052$) intravenous contrast exposure.
Conclusion: Intravenous contrast administration is not associated with AKI in the post-operative setting. The risk of contrast-induced nephropathy should not routinely be used as a reason to delay CT.

P264
The effects of perioperative angiotensin converting enzyme inhibitors and angiotensin receptor blockers on acute kidney injury in major elective non-cardiac surgery. A multicentre, prospective cohort study

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Aim: This study aimed to investigate if withholding angiotensin converting enzyme inhibitors or angiotensin receptor blockers (ACEi/ARBs) perioperatively reduces the risk of postoperative acute kidney injury (AKI).
Method: Consecutive patients undergoing elective major gastrointestinal or liver surgery were included. The primary outcome was AKI within 7 days of index operation. Mortality at thirty postoperative days was also assessed. Adjusted multilevel models were used to account for centre level effects and propensity score matching was used to reduce the effects of selection bias between treatment groups.
Results: A total of 963 patients were prospectively included across 160 centres, of whom 579 had ACEi/ARB withheld perioperatively. The AKI rate was 18.1%; there was no difference between patients who had their ACEi/ARB continued or withheld (17.7% versus 18.5%). After adjusting for confounding factors, withholding ACEi/ARB did not reduce the risk of AKI (OR = 0.99, 95%CI = 0.69–1.40, $P = 0.935$) or death (OR = 1.15, 95%CI = 0.33–4.00, $P = 0.825$). Following propensity matching, withholding ACEi/ARB did not demonstrate a protective effect against AKI (OR = 1.16, 95%CI = 0.79–1.71, $P = 0.458$).
Conclusion: Withholding ACEi/ARB perioperatively did not reduce the odds of sustaining AKI. Large, randomised trials are required to definitively evaluate whether perioperative ACEi/ARB administration affects the development of AKI.

P265
Impact of post-operative acute kidney injury on long-term survival following major abdominal surgery

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Aim: Acute kidney injury (AKI) is common and has a significant association with early post-operative morbidity and mortality. This study aimed to determine the association between AKI after abdominal surgery and 1-year clinical outcomes.
Method: This prospective multicentre cohort study was delivered by a student-driven network and followed-up at 1 year patients previously captured in a prospective study of post-operative AKI following gastrointestinal resection, reversal of stoma, and liver resection. The primary outcome was overall survival, and the secondary outcome was cardiovascular events. Cox-regression models were used to adjust hazard ratios (HR) for patient and operative factors.
Results: One year follow-up data were available for 3575 patients, whose initial AKI rate within 7 days of surgery had been 13.3% ($n = 477$). Mortality at 1-year was 8.7% ($n = 304$) and the rate of cardiovascular events was 1.3% ($n = 46$). After risk adjustment, post-operative AKI was independently associated with mortality (HR = 1.87, 95%CI = 1.43–2.45, $P = 0.001$) and cardiovascular events (HR = 2.29, 95%CI = 1.19–4.41, $P = 0.013$). These associations were consistent even in patients who had initially experienced the least severe AKI (stage 1).
Conclusion: Post-operative AKI is associated with significantly worse clinical outcomes at 1-year. These patients may benefit from additional monitoring and intervention.

P266
The impact of the non-technical skills training and surgical simulation in a regional training programme – is it worthwhile to develop the study of the human factors in surgery in a Deanery?

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Aim: There is a recent increase in reporting of non-technical errors in the NHS. Perioperative human factors (HF) is a colloquial term for non-technical skills for surgeons (NOTSS) which, if not applied, contribute to increasing numbers of surgical errors. The aim of this project is to facilitate the study of HF in surgery through the planned use of surgical simulation for the surgical trainees in a Deanery.
Method: During 10/2017–10/2018 a clinical fellow was appointed to run the project. After assessing the regional HF teaching by questionnaires, the first step was to perform a small teaching session on HF locally, followed by a regional NOTSS Masterclass and HF Workshop using simulation facilities and surgical scenarios.
Results: Primary outcome: to measure the interest and knowledge of the surgical trainees on HF – questionnaires. Secondary outcome: development of new courses on HF in surgery – collecting feedback at the HF courses taking place in 2018.
Conclusion: The study of HF has a crucial role in development of the surgical trainees, improving the quality of teamwork in surgery and seeking to reduce errors. This project has a high potential to develop the non-technical aspects of the surgical training in the Deanery to improve the surgical patients' safety.

P267
Implementation of the Enhanced Recovery Programme for colorectal surgery in clinical practice. A survey of surgeons of Russian federation

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Aim: To determine how often the Enhanced Recovery Programme (ERP) is used by surgeons of the Russian Federation in their routine practice.
Method: During the year 2017, 223 doctors from 42 Russian regions were interviewed.
Results: It was found that 11.7% did not know about the ERP; 8.9% had heard about it, but thought that it was not applied in the Russian Federation; 16.6% don't use the ERP method; 55.6% use particular elements of the ERP and 7.2% of surgeons use the entire ERP. The ERP is more often used by more actively operating surgeons ($P = 0.001$). The elements of ERP associated with the most negative responses were: the use of carbohydrate drinks before surgery, refusal of mechanical preparation of the bowel, maintaining optimal body temperature and the restrictive protocol of infusion therapy.
Conclusion: The survey showed that the majority of surgeons use separate elements of ERP. Some of its elements are difficult to apply in real healthcare. For wider and full implementation of ERP, more educational activities are needed.

P268
Effect of human amniotic membrane on anastomosis leakage in dog model

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P269

Clinical and functional outcomes following stapled transanal rectal resection with high volume stapled devices

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Aim: The aim of the study was to assess functional and clinical outcome using a high volume circular stapled technique in patients with rectal mucosal prolapse and haemorrhoids.
Method: Between January 2013 and December 2016 stapled anopexy was performed for haemorrhoids (Goligher grade III or IV and/or anal prolapse) in 422 patients using a high-volume stapler (HVS). Preoperatively, all patients underwent clinical examination, colonoscopy, anorectal manometry and anal endosonography. All patients were evaluated preoperatively and postoperatively at 1, 3, 6 and 12 months.
Results: No major complications were recorded. 42 patients had minor complications: 12 postoperative bleeding treated with surgical haemostasis, 14 urinary retention and 16 postoperative faecal urgency. Excision of external haemorrhoids was added in 5% of cases. Residual haemorrhoids and/or rectal prolapse were found in 10 patients at 6 and 12 months. Urgency was recorded in 2 patients after 1 year.
Conclusion: High volume prolapsectomy is safe and effective with a low recurrence rate and a low morbidity rate.

P270

CT scan in suspected anastomotic leakage after colorectal surgery: mortality increases after false-negative imaging.

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Aim: To investigate the accuracy of abdominal CT scanning for anastomotic leakage and the effect of false-negative scans on delay in therapeutic intervention and clinical outcome.
Method: Data from a prospectively bi-institutional maintained database of all patients who had elective colorectal surgery with primary anastomosis for malignant or benign disease between 2010 and 2017 were reviewed. Patients with confirmed anastomotic dehiscence at reintervention, that underwent a postoperative CT scan for suspected leakage, were identified and radiological reports were retrieved.
Results: 76 patients with anastomotic dehiscence were included in the study. ASA score, sex, type of surgical procedure, malignancy and type of anastomosis did not correlate with postoperative false-negative CT imaging. A postoperative false negative CT scan led to delayed reintervention (3 vs 6 hours, $P = 0.023$) and increased mortality 5 deaths vs none, $P = 0.043$) Free abdominal air ($P = 0.001$) and extraluminal contrast extravasation ($P = 0.001$) were found to be predictive of accuracy in anastomotic leakage diagnosis.
Conclusion: Suboptimal specificity of postoperative CT scan in suspected anastomotic leakage after colorectal surgery could delay reintervention and increase mortality.

P271

Ultrasound (USS) and neutrophil-lymphocyte ratio (NLR) in ruling out acute appendicitis in patients aged 16–55 years

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Aim: To determine combined reliability of Ultrasound scans and NLR in ruling out acute appendicitis.
Method: A retrospective study of 873 patients who underwent appendicectomy over 2 years (2014–2015) from a single NHS trust. Patients were divided into 2 groups based on histology as normal and acute appendicitis. WBC count, CRP, Neutrophil, Monocyte, Lymphocyte counts, USS on admission and histology were analysed by RStudio ver1.0.136 software. The patients were stratified by age: 0–16 years (A), 16–55 years (B), and >55 years (C).
Results: On analysis using ROC – AUC (area under the curve) and Chi-Square Test, NLR for all groups were statistically significant: $P < 0.001$. NMR, CRP and WBC were statistically significant for the first two groups only: $P < 0.0001$. Ultrasound scans were performed for 192 patients and showed a sensitivity of 68% and specificity of 45%, but when combined with NLR it ruled out acute appendicitis in the 16–55 years age group.
Conclusion: NLR is highly predictive of acute appendicitis in all age groups. NLR<4.3 combined with negative USS for the age group 16–55, can be used to rule out acute appendicitis. Our study showed a high negative appendicectomy rate in females in this age group.

P272

CT scans and neutrophil-lymphocyte ratio (NLR) in diagnosing acute appendicitis in patients above 50 years of age

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Aim: To determine reliability of CT scans and NLR in diagnosing acute appendicitis.
Method: Retrospective study of 873 patients who underwent appendicectomy over 2 years (2014–2015) from a single NHS trust. Patients were divided into 2 groups based on histology as normal and acute appendicitis. WBC count, Serum C-Reactive Protein (CRP), Neutrophil-Monocyte Ratio (NMR), NLR counts on admission, histology and CT scan results were analysed by RStudio ver1.0.136 software The patients were stratified by age: 0–16 years (A), 16–50 years (B), and >50 years (C).
Results: On analysis using ROC – AUC (area under the curve) NLR for all groups were statistically significant: $P < 0.001$. NMR, CRP and WBC was statistically significant in first two groups only: $P < 0.0001$. CT scans were performed for 179 patients in total and in the > 50 years group 40 CT scans were done. This showed a sensitivity of 97.3% and PPV of 95%.
Conclusion: NLR is highly predictive of acute appendicitis in all age groups especially in the ≥50 yr compared to other blood parameters. CT scan had a high sensitivity (97.3%) and PPV (95%) in diagnosing acute appendicitis in the same age group. Future studies with more numbers are needed for significant results.

P273

Right-sided colonic diverticulitis – 10 years' experience from a tertiary centre

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Aim: The incidence of right-sided diverticulitis is much higher in Asians compared to Caucasians. We aimed to determine the clinical characteristics of right colonic diverticulitis and the outcome of patients requiring emergency operation.
Method: Retrospective review of patients admitted with diverticulitis from 2005 to 2014 to a tertiary referral unit. Patient demographics, clinical presentation, need for emergency surgery and perioperative outcome were analysed.
Results: In total 393 patients presented with diverticulitis, of which 224 (57%) were right-sided disease. The mean age was 52 years, 92 (41%) patients were male. All patients complained of abdominal pain while leucocytosis and fever were present in 73% and 36% of patients respectively. The mean hospital stay was 5.7 days. The majority of patients (92%) were Greaney grade I and II. Of the 224 patients, 68 (30%) underwent emergency surgery for either suspected appendicitis or the development of life-threatening complications. Operative morbidity and mortality were 4% and 1.4% respectively.
Conclusion: Right-sided diverticulitis is an important clinical diagnosis, especially in the Asian population. Although symptoms are similar to left-sided diverticulitis, clinical course is usually more benign. When surgery is performed for life-threatening complications, it is associated with a low morbidity and mortality.

P274

Early experience with use of Davinci robotic platform to perform Total Mesorectal Excision (TME) surgery without the need for a diverting stoma in rectal resections

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Aim: To assess the effectiveness of use of the Davinci robotic platform to perform suture reinforcement of rectal anastomosis and assessment of perfusion of the anastomosis using the Portsmouth protocol in an attempt to reduce the incidence of anastomotic leak and avoid the need for a diverting stoma in robotic rectal resections.
Method: During robotic rectal cancer surgery, the level of transection was chosen after ICG immunofluorescence assessment. The same assessment was used to check vascularity of the circular anastomosis. The distal transverse staple line and circular staple line of colo-rectal/anal anastomosis were reinforced with absorbable interrupted intra-corporeal stitches. The integrity of colo-rectal/anal anastomosis was checked with air water leak test with concomitant flexible sigmoidoscopy to visualise the circular staple line. Details of the procedure and outcomes are given in table 1.
Results: None of the 50 patients experienced major/clinical anastomotic leak. There was one pelvic collection, one minor anastomotic leak and two 30-days readmissions. There was no mortality at 30 and 90 days. At 30 days no patient had required re-operation.
Conclusion: This technique is feasible, successful and safe in decreasing the incidence of anastomotic leak and avoiding diverting stomas in robotic rectal resections.

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P275
Retrorectal tumors – 20 years experience

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Aim: Tumours occurring in the retrorectal space are heterogenous and uncommon. The utility of newer imaging techniques has not been extensively described, and operative approach is variable. This study examined the diagnosis, treatment and outcome of retrorectal tumors at a tertiary referral center.
Method: Patients with primary, extramucosal neoplasms occurring in the retrorectal space were identified using a retrospectively maintained, procedural database of all adult colorectal surgical patients (1997 – 2017). Exclusion criteria included inflammatory processes, locally advanced colorectal cancer, and metastatic malignancy. Medical records, radiology, and pathology reports were reviewed retrospectively.
Results: Forty five patients with retrorectal tumors were treated. Malignant tumors comprised 28 percent. Older age, male gender, and pain were predictive of malignancy ($P < 0.05$). All benign tumors were resected with normal histologic margins and none recurred. Eleven patients with malignancy had recurrence/ recrudescence of their disease.
Conclusion: Retrorectal tumors remain a diagnostic and therapeutic challenge. Pain, male gender, and advanced age increase the likelihood of malignancy. Various imaging modalities are useful for planning resection, but cannot establish a definitive diagnosis. Whereas benign retrorescal tumors can be completely resected, curative resection of malignant retrorectal tumors remains difficult.

P276
Should patients aged 50 or over who present with appendicitis receive whole bowel imaging to detect underlying right-sided polyps or malignancy?

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Aim: To assess if patients aged 50 years or over who underwent appendicectomy, were diagnosed with right-sided adenomatous polyps or malignancy in the following 24 months.
Method: Electronic medical records were retrospectively reviewed and data collected for all patients aged 50 and over who underwent an appendicectomy at our centre between 1st of January 2010 and 31st of December 2014.
Results: 314 patients were included, of whom 279 (88.8%) had confirmed pathology on appendix histology. 10 patients were found to have tumours of the appendix on histological assessment. Three (1.1%) further patients were diagnosed with a right-sided polyp or malignancy within 24 months post appendicectomy. The rate of right-sided polyps or malignancy later found in those who had dysplasia on appendix histology was 25%.
Conclusion: Only 1.1% of patients aged 50 or older who underwent an appendicectomy were later found to have an underlying caecal adenomatous polyp or malignancy, however all were found to have evidence of dysplasia on histology of the appendix. Therefore, based on our results, routine whole bowel imaging should not be performed in patient aged 50 years of older who present with appendicitis, but selectively for those who have dysplasia or tumours on histology.

P277
The effect of mechanical bowel preparation for complications after right hemicolectomy and ileo-colic anastomosis

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Aim: Although several trials demonstrate merits of mechanical bowel preparation (MBP) before colon resection, there is some debate in the case of ileo-colic anastomosis. Therefore we evaluated effect of MBP before RHC.
Method: From Jan 2010 to Dec 2015, 633 patients were included who had ascending colon cancer. Patients were classified into 2 groups.(Group1:surgery only, $n = 168$; Group2:surgery after MBP, $n = 465$) Extended RHCs and ileocecectomies were excluded and postoperative recovery and complications were compared between 2 groups.
Results: Age, sex, BMI, ASA score were not different between the 2 groups, but Group1 had more smokers and diabetes mellitus. 68%($n = 402$) of patients in group2 had oral antibiotics with MBP. Group2 had more laparoscopic surgeries (84% vs 73%, $P < .01$)and intraoperative bleeding (152.64 ± 7.961 ml vs 117.72 ± 13.5 ml, $P = 0.027$) but operative time was not different. Postoperative recovery and complications [leakage and surgical site infection (SSI)] were not different between 2 groups. In multivariate analysis, MBP with use of OA [adjusted HR 0.219 (CI 0.081–0.592), $P = 0.003$] and smoking were independent factors for SSI.
Conclusion: Preoperative MBP with concurrent use of oral antibiotics would beneficial for prevention of postoperative infectious complications after colon resection and ileo-colic anastomosis as well as for colo-colonic anastomosis

P278
The role of intraoperative colonoscopy in evaluating colonic anastomosis after anterior or low anterior resection

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Aim: Intraoperative colonoscopy has been used to reduce postoperative anastomosis-related complications. This study evaluates the effectiveness of intraoperative colonoscopy in early recognition of anastomosis-related complications and subsequent intraoperative management.
Method: This is a retrospective analysis on the patients who underwent anterior or low anterior resection (AR or LAR) from Dec 2016 to Dec 2017. Patients were analyzed for the rate of intraoperative anastomosis-related complications found on intraoperative colonoscopy. Also, postoperative anastomosis-related complications were evaluated.
Results: A total of 135 patients underwent AR or LAR for radical resection of colorectal cancer. Intraoperative colonoscopy was performed in 116 patients. 12 out of 116 patients demonstrated abnormal finding, such as bleeding or disruption of staple line at the anastomosis on the intraoperative colonoscopy. Additional intraoperative procedures of either transanal or transabdominal suture was performed in 10 patients with leakage and active bleeding at the anastomosis. 10 patients experienced postoperative anastomosis-related complications. No one who received additional procedure developed anastomotic complications, whereas one without the procedure developed anastomotic leakage.
Conclusion: Abnormal findings on the intraoperative colonoscopy can be interpreted as a significant threat to anastomotic stability. Applying intraoperative colonoscopy as a routine surgical procedure may serve to reduce anastomosis-related complications.

P279
Colorectal surgery in the NHS: are we getting busier?

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Aim: We aimed to estimate the distribution of workload across different sub-specialities of general surgery within the National Health Service in the United Kingdom and, in particular, the fraction of colorectal work undertaken over the last 5 years (2012–2017).
Method: A comparative review was undertaken of publically available national data generated by the NHS Digital Service, via the Hospital Episodes Statistics platform.
Results: The median number of Finished Consultant Episodes (FCE) related to colorectal surgery was 245K episodes/year (range 207K–256K), representing 1.3% of all FCEs. A persistent annual increase of median 11K episodes was noted (range 1000–25K episodes per year), with the last 2 years reaching a plateau. An impressive 67K FCE (27%) concerned patients above the age of 85. Inpatient colorectal activity required a median 407K bed-days per year (range 367K–411K). During this period, the total number of FCE related to general surgery has remained stable at 1.32 million (range 1.30–1.34) per year.
Conclusion: A steady annual increase of colorectal workload is noted in the NHS, involving largely an ageing population. In light of the current economic climate and upcoming geopolitical changes, this information is crucial towards effective distribution of resources and workforce planning.

P280
Is the ghost ileostomy (GI) a useful procedure in colorectal surgery?

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Aim: We aimed to evaluate the characteristics of GI patients and compare them with patients who underwent loop ileostomy (LI) in terms of anastomotic leakage (AL).
Method: This study included 293 patients (nGI:41, nLI:51) who underwent anterior/low anterior resection for pathologies of the upper/middle rectum or sigmoid colon. The type of diversion is releated to the risk of the patients and to the intraoperative decision of surgeon.
Results: The median age was 59 years, BMI was 27.6. Diagnosis of patients were sigmoid diverticulitis (n:6) and cancer (n:4), upper (n:14) and middle rectal cancer (n:17). AL rates were 1.9%(n:1) in LI group and 4.8%(n:2) in GI group. In 1 of the 2 patients who underwent GI and had AL, GI was converted into LI by laparotomy

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due to generalized peritonitis. In the other patient, GI was simply converted into LI under local anesthesia.
Conclusion: GI is an easy procedure with low complication rate in patients with moderate risk of AL. Perhaps in some of the patients who were selected for LI, GI may be a preferable simple approach regarding the low AL rate in LI group in our series.

P281
A literature review of the use of social media in medical education

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P282
Suture choice to reduce occurrence of surgical site infection (SSI), hernia, wound dehiscence, and sinus/fistula. A network meta-analysis

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This abstract has been submitted as a full article for publication.

P283
Is reality limiting patient understanding? A discussion of the implications of augmented and virtual reality technology to patient understanding

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P284
Outcome of delayed coloanal anastomosis in difficult low rectal cancer

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Aim: To assess the oncologic and functional outcome of patients treated by delayed coloanal anastomosis for difficult low rectal cancer.
Method: 30 patients (median age 63, 6F and 24M) with low rectal cancer and complex surgery for extended TME in T4 (n = 14), obesity (n = 8) or technical difficulties (n = 8) were included. The procedure associated rectal excision with pulled through coloanal anastomosis. At day 7, the colonic stump was resected and a straight coloanal anastomosis was performed.
Results: There was no mortality. Morbidity was 30% (9/30): 2 anastomotic leak, 3 pelvic abscess, 1 ischemia of the distal colon, 1 bowel obstruction, 1 renal insufficiency and 1 respiratory insufficiency. At a median follow-up of 36 months, 24 patients were alive (3 with recurrence) and 6 died (2 from recurrence). Functional outcome in available patients (n = 22) showed a Wexner score < 10 (no or moderate incontinence) in two third of patients, including 3 patients treated by anterograde enema by using percutaneous endoscopic coecostomy. Overall, three patients (10%) required a permanent colostomy for morbidity or recurrence.
Conclusion: Delayed coloanal anastomosis is a safe option for sphincter-preservation in low rectal cancers requiring complex surgery for locally advanced disease or technical difficulties.

P285
Evaluation of the relationship between appendectomy and colorectal cancer

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Aim: To explore the relationship between colorectal cancer (CRC) and appendectomy.
Method: The study period was between 2015 and 2017. The setting was the surgical unit of the University of Szeged, Albert Szent Györgyi Medical Centre. We evaluated retrospectively the medical history of adult patients subjected to surgery due to CRC. We categorised patient according to the presence of appendectomy (Group 1: with prior appendectomy, Group 2: without prior appendectomy). The localisation of CRC was compared between the two groups (Chi-square test, R 3.4.2.)
Results: Of the 640 eligible patients, data of 623 patients subjected to CRC surgery were evaluated. The mean age of patients was 66.7 ± 11.4 years (min: 21, max: 97 years). Overall 104 (16%) patients belonged to Group1 (had prior appendectomy). The localisation of CRC differed significantly between Group 1 and Group 2 (right colon:37.5%, left colon:27.8%, rectum:34.6% versus 20.6%, 36.4% and 42.3%), respectively (χ^2=13.82, P = 0.001). The history of appendectomy was highest (33%) in those who had CRC in the caecum.
Conclusion: The rate of CRC in the right-side was higher in those with appendectomy in the medical history.

P286
Impact of tumor localization, microsatellite instability and mismatch repair deficiency on the prognosis of colorectal cancer

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Aim: Recent reports showed that left and right sided colon cancers display different clinical and biological features. Chromosomal instability, epigenetic alterations, and defects in the DNA mismatch repair (MMR) system may lead to develop colorectal cancer (CRC). Besides microsatellite instability (MSI) caused by DNA MMR activity degradation increases the risk for CRC.

We aimed to show the differences between different localized CRC, to investigate the cause of these differences, to present whether there is a relation between MMR and MSI, and to evaluate their effects on prognosis.
Method: 641 CRC cases were divided into Group 1 (right sided), Group 2 (left sided) and Group 3 (rectal tumour).
Results: Among 641 patients 64.9% were male. Group 1, 2 and 3 comprised of 31.2%, 45.7% and 23.1% of all cases, respectively.

Cases were also stratified by stages. According to this data, 10.1%, 45.7% and 44.2% of the patients had stage I, II and III disease, respectively.
Conclusion: Tumour localization doesn't have an effect on prognosis in stage I-III patients. Although it was not statistically significant, tumours with MMR deficiency and low microsatellite instability are more common in right sided colon tumours.

P287
Factors affecting the lymph node positivity in colorectal cancers

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Aim: Colorectal cancer (CRC) is one of the most commonly diagnosed cancers. Lymph node positivity has been shown as the main predictive factor on survival. Lymph node metastasis is directly related to invasion depth, differentiation grade, lymphovascular invasion and low rectal tumour location.

Here, we aimed to research the factors that affect lymph node positivity in CRC and evaluate their impact on prognosis and survey.
Method: This study includes 641 patients who underwent surgery due to CRC. Patients were divided into three groups according to their N stage: Group 1 (N0), group 2 (N1) and group 3 (N2).

Demographic data, medical history, stage, tumour localization, number of the lymph nodes removed and positive nodes, MMR (mismatch repair), MSI (microsatellite instability), duration of hospital stay and survival were evaluated.
Results: Of the 641 patients 64.9% were male. Group 1 consists the vast majority of the patients (58%). Tumor localization, sex, MMR and MSI statuses were found to affect the lymph node positivity.
Conclusion: Advanced age, poor differentiation, presence of mucinous component, lymphovascular and neural invasion increase the risk of lymph node metastasis and morbidity.

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P288

Prognostic value of tumor localization in colon cancer

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Aim: Every year in the world, one million people are diagnosed with colon cancer (CC) and this constitutes 9% of all cancers.

Recent reports showed that left and right-sided colon cancers display different clinical and biological features. The cause of this condition is still unclear, assuming that this may be dependent to biological feature of the tumour.

In this study, we aimed to classify the patients with CC according to the tumour localization and to evaluate the differences in the terms of symptoms, cancer invasion depth, cancer morphology and histology.

Method: The study includes 493 patients divided into two groups (Group 1: right-sided tumours and group 2:left- sided tumours) who underwent surgery due to CC.

Results: There were 200 patients in group 1 and 293 in group 2. 61.5% of all cases were male. There was a statistically significant difference between the groups in terms of gender, age distribution and symptoms at admission.

Conclusion: Although right-sided tumours are seen at younger ages, the presence of poor histological type and mucinous component is more frequent among them.

Therefore the prognosis of right-sided cancer is worse.

P289

A comparison of clinicopathologic features of patients with colorectal cancer after emergency and elective surgery

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Aim: The importance of oncologic principles in colorectal cancer has been particularly emphasized in recent years. There are several studies questioning and evaluating the quality of the emergency surgery. Here, we aimed to compare the clinicopathologic characteristics of patients with colorectal cancer according to their surgical conditions.

Method: Medical records of 564 patients, who underwent colorectal resection between January 2011 and March 2017 in our department and diagnosed with colon/rectum adenocarcinoma after pathological examination, were evaluated retrospectively.

Results: There were 460 (81.6%) patients in the elective surgery group and 104 (18.4%) patients in the emergency surgery group. Vast majority of the patients had colon cancer (80.3%) while 19.7% had rectal cancer. Low anterior resection was the most frequent procedure (23.2%). No statistically significant difference was found between two groups in the terms of lymph node yield and surgical complications.

Conclusion: Surgical conditions do not have an effect on the lymph node yield, which is a determinative, vital factor in the oncologic process of the patient. We believe that, in an experienced center, emergency colorectal resections can be applied safely by respecting the oncological principles.

P290

Investigation of hereditary colorectal cancer

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Aim: The aim of this work was to study the characteristics of germinal mutations in hereditary colon cancer syndromes in Russian patients. Hereditary colorectal cancer (CRC) has manifestation at an early age (up to 45 years). Fundamental research in the field of colorectal carcinogenesis allowed identifying genes whose germinal mutations explain the onset of hereditary colorectal cancer.

Method: PCR, conformationally sensitive electrophoresis, high-performance sequencing (NGS) and capillary Sanger sequencing by were used for searching mutations of genes.

Results: The 130 germline mutations in patients with different forms of hereditary colorectal cancer were detected from 2012 to 2017 in SSCC (Moscow). All patients were divided into three groups : 43 patients non-polyposis colorectal cancer, 83 patients with cancer multiple polyps in the large intestine, 4 patients Peitz-Jegers syndrome. There was found 38 new mutations in our cohorts. 14 of 43 mutations wasn't described before. The 21 new mutations of 83 was found in the *APC* gene. In the *STK11* gene was found three new mutations of four.

Conclusion: The frequency of new mutations was 29.2% (38/130) among the mutations found in genes associated with hereditary forms of colorectal cancer.

P291

Validation of MRI scoring system to predict postoperative recurrence rates of low rectal cancer

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Aim: Mercury II study demonstrated that the risk score based on MRI imaging is useful to predict the likelihood of pathological circumferential resection margin (pCRM) involvement. The objective of this study is to clarify the predictive value of this scoring system on postoperative recurrence in rectal cancer.

Method: 117 patients who had undergone curative surgery for low rectal cancer from 2005 to 2016 were included. According to the calculated scoring, patients were categorized into the low-risk group, intermediate-risk group and high-risk group.

Results: Five-year recurrence-free survival rates were 82.7% in the low-risk group, 72.1% in the intermediate-risk group and 52.0% in the high-risk group. Compared to the low-risk group, the hazard ratios for disease recurrence were 1.85 (95%CI 0.81–4.20, $P = 0.14$) in the intermediate-risk group, and 4.10 (95%CI 1.77–9.49, $P = 0.001$) in the high-risk group. In analyzing patterns of recurrence, distant metastasis was significantly found out in high risk group (12.0%, 14.0% and 36.0% in the low, intermediate and high-risk group) whereas local recurrence was similarly observed in three groups (4.0%, 14.0% and 8.0% respectively).

Conclusion: The proposed MRI scoring system may be useful for predicting recurrence rates of low rectal cancer after curative surgery.

P292

The abdominoperineal resection in open and laparoscopic approaches

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Aim: To study short-term outcomes of open and laparoscopic abdomino-perineal resection for rectal cancer.

Method: We studied 346 patients with low rectal cancer, which underwent elective abdomino-perineal resections between 2013 and 2017.

Results: All patients received short course preoperative radiotherapy before surgery (5×5 Gy). Two hundred and fifty-eight (group I) open and 86 laparoscopic abdomino-perineal resections were performed. Stage II-207 patients (60%), stage III-128 (37%) and stage IV – 11 (3%). There were no conversions. Average operating time in group I-211.4 ± 31.2 min, group II – 220.1 ± 40.6 min. Blood loss: group I-450.5 ± 98.4 ml, group II – 150.4 ± 40.6 ml. Postoperative complications occurred in group I-12 (5%), group II – 2 (1.4%) (including abscess – 4, stoma necrosis– 2, hemorrhage – 3, wound infection – 4), without mortality after laparoscopic APR. There were no positive circular resection margins. There was less pain, analgetic consumption, earlier activation of patients in group II. There was no Bowel movement was noted in 2.4 ± 0.7 days in group II against 4.9 ± 1.1 days in group I.

Conclusion: The laparoscopic abdomino-perineal resection is an adequate and valid procedure allows a decrease in postoperative complications and quick patients recovery.

P293

Prolonged interval between neoadjuvant treatment and surgery has no impact on short-term outcomes and complete pathologic response in patients with locally advanced rectal cancer

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Aim: Surgery is usually performed within 8 weeks after completion of neoadjuvant treatment in patients with locally advanced rectal cancer (LARC). We aimed to evaluate whether a neoadjuvant–surgery interval of more than 8 weeks has any effect on complete pathologic response (pCR) and postoperative morbidity.

Method: Included in this study were 166 patients with LARC who underwent neo-adjuvant chemoradiation followed by radical resection at three tertiary referral centers between July 2009 and December 2017. The patients were divided into two groups based on the neo-adjuvant–surgery interval: ≤8 weeks (group 1, $n = 81$) and

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>8 weeks (group 2, $n = 85$). Data on pCR and postoperative 30-day complications were reviewed.

Results: The groups were comparable with respect to demographics and preoperative characteristics. Operative time was higher in group 2 (281 ± 117 vs 234 ± 90 min, $P = 0.007$).

The mean number of harvested lymph nodes was higher in group 1 (28 ± 9 vs 21 ± 10, $P < 0.001$).

There were no differences between the two groups in terms of pCR (14% vs 18%, $P = 0.47$) and postoperative overall morbidity (15% vs 18%, $P = 0.49$).

Conclusion: This study suggests that a neo-adjuvant–surgery interval of more than 8 weeks neither improves pCR nor decreases short-term morbidity in LARC.

P294

Diagnostic accuracy of MRI in assessing tumour regression and identifying complete response in patients with locally advanced rectal cancer after neo-adjuvant treatment

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This abstract has been accepted for publication in Abdominal IMaging.

P295

Comparison of systemic inflammatory biomarkers as prognostic factors in stage II and III colon cancer

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Aim: To evaluate which inflammatory biomarker is the most prognostic in patients with stage II and III colon cancer.

Method: 1303 patients were evaluated with pathological stage II/III colon cancer who underwent curative resection between 2004 and 2013. Nine inflammatory biomarkers (NLR, LMR, PLR, CAR, mGPS, PNI, SIS, PI, HLAN) were retrospectively reviewed.

Baseline prediction model for overall survival (OS) consisted of clinico-pathological factors (age, sex, pT, pN, histologic type, lymphovascular invasion, and adjuvant chemotherapy) was constructed using multivariate Cox regression analysis. Each inflammatory biomarker was added into this model, and c-indexes were evaluated.

Results: Among nine inflammatory biomarkers, NLR (≤2.58 and >2.58; $P = 0.0279$), LMR (≤2.54 and >2.54; $P = 0.0204$), CAR (≤0.30 and >0.30; $P = 0.0136$), and PNI (≤45 and >45; $P = 0.0180$) were independently associated with OS.

However, c-indexes of the prediction model including NLR (0.757; 95%CI: 0.706–0.808), LMR (0.755; 95%CI: 0.704–0.807), CAR (0.762; 95%CI: 0.710–0.813), and PNI (0.755; 95%CI: 0.704–0.807) were not significantly different from that of the baseline prediction model (0.747; 95%CI: 0.696–0.798).

Conclusion: NLR, LMR, CAR, and PNI are independent predictors of OS, but the predictive ability is not significantly different compared to the baseline prediction model only using general ciinico-pathological factors.

P296

Surgical treatment of left colic angle neoplasm: a multicentric study on short-term outcomes

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Aim: The optimal surgical treatment of left colonic angle neoplasm is still debatable and not standardized.

Method: A multicenter study on patients who underwent curative surgery for splenic flexure colon cancer was designed with the aim to evaluate the short-term outcomes.

Data were collected from a retrospectively recorded database of consecutive patients operated on in five colorectal surgery units from January 2004 to December 2015. Secondary outcomes investigated were the differences between different groups of surgeons.

Results: Among 324 patients, an extended right hemicolectomy (ERH) and a left colic resection (LCR) were performed in 158 and 166 cases, respectively.

Among 270 elective resections, overall postoperative morbidity, mortality and need for reoperation did not show significant differences.

Recovery of bowel function and mean length of hospital stay were significantly longer after LCR than ERH.

At multivariate analysis, any significantly differences were found concerning anastomotic leakage as any significant differences were found concerning the adequacy of the distal free resection margin. Conversely, the nodal harvesting was significantly higher in Colorectal Surgeons groups in any clinical scenario.

Conclusion: ERH and LCR seem to provide similar short-term outcomes. This study suggests that the oncological adequacy of surgical resection is related to the surgeon's specialty.

P297

Abdominoprineal resection in low rectal cancer with or without appendicostomy, comparison of quality of life

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Aim: The aim of this study was to asses quality of life in patients with very low rectal cancer after abdominoperineal resection and concomitant appendicostomy.

Method: We reviewed 35 patients with very low rectal cancer who underwent APR with appendicostomy and 35 patients without appendicostomy. Appendicostomy was done with skin flap sutured to appendical lumen to prevent stricture. The first group underwent antegrade colonic enema with tap water. Patients quality of life were evaluated at regular time intervals.

Results: After a median follow up of 12 months, 64 patients completed the study period. All patients were able to perform an antegrade enema by themselves.75% of appendicostomy group didn't need to use a stoma bag and onl.75% of appendicostomy group didn't need to use stoma bag and only covered stoma with gauze.

There was no significant difference between two groups in physical and role function but appendicostomy group had significantly better condition in social and emotional function and global health score ($P < 0.05$).

Conclusion: Appendicostomy provides an acceptable level of functional, emotional and social improvement in patient with very low rectal cancer undergoing APR. We can use appendicostomy with APR in low rectal cancer to improve quality of life.

P298

Colonic doughnut morphology can predict the risk of anastomosis leakage following double stapled colorectal surgery in colorectal cancer

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Aim: In double stapled colorectal surgery two doughnuts obtained from stapler. The aim of this study was to investigate the influence of anastomosis doughnut morphology on the risk of anastomotic leakage (AL).

Method: This is s single center prospective study. Patients with colorectal cancer that underwent surgery with circular stapler between December 2016 and December 2017 were entered this study. The surgeon measured max and min height and width of colonic and rectal doughnut in the operation room. We assessed the influence of doughnut morphology on AL and morbidity

Results: 75 patients entered study. The median distance of the anastomosis, from the anal verge (AV) was 9.5 cm (1–17 cm). anastomosis < 5 cm from AV performed in 16 (21%).

AL detected in 3 (4%).the minimal width of colonic doughnut (CD) significantly associate with higher risk of AL ($P = 0.016$). the small height of CD associate with higher risk of surgical morbidity ($P = 0.011$).

Although all AL occurred in patients who had CD height of 4 or less, but no statistically significant ($P = 0.073$).

Conclusion: Doughnut can be measured during operation simply and could help to decide which patients could benefit from a diverting stoma or the creation of a new anastomosis.

P299

Systematic immunohistochemistry for microstatellite instability in colorectal cancer specimens. A comprehensive approach for personalized treatment?

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Aim: At least 10–15% of cases with unselected colorectal cancer (CRC) are inherent to the pathway of microsatellite instability (MSI). Immunohistochemical (IHC)

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staining of tumor specimens for MSI using antibodies against the most frequent MMR proteins (MLH1, MSH2, MSH6 and PMS2) represents a cost effective method of investigating MSI in colorectal cancer specimens.
Method: Data from a prospectively maintained database of patients undergoing surgical resection of CRC was reviewed. The findings from IHC staining for MLH1, MSH2, MSH6 and PMS2 were reviewed. Cases with negative IHC stains for MHL1 and PMS2 were further stratified via BRAF mutation analysis.
Results: Tumour specimens from 138 patients (60 females and 78 males) following resection of CRC were analyzed. Positive revised Bethesda criteria were positive in 7.2% of the cohort. MSI – H was found in 29% of cases. Results of MSI via IHC and BRAF analysis warranted genetic counseling and further work-up for Lynch syndrome in 13.7% of cases.
Conclusion: Systematic screening of CRC specimens for MSI via IHC can easily and cheaply identify potential candidates for further germline LS-testing. This procedure has been implemented as the basis for decision-making in tumour boards prior to adjuvant therapy in cases with sporadic MSI cancers.

P300

Initial experience with taTME in patients undergoing laparoscopic restorative proctocoloctomy for familial adenomatous polyposis

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Aim: Transanal total mesorectal excision (taTME) is a minimally invasive technique, which was developed to overcome the difficulties associated with the „top-down" pelvic dissection by enabling a „bottom-up " approach in patients with mid and low rectal cancer. We report our initial experience with taTME in patients undergoing restorative proctocoloctomy for familial adenomatous polyposis (FAP)
Method: The results of fifteen consecutive patients (nine females and six males) undergoing prophylactic restorative proctocolectomy with IPAA for FAP using taTME are presented.
Results: The median age in this series was 19.5 years (range: 16–31 years). Surgery was successfully completed using the taTME approach in all cases.

No peri-operative complications were recorded.

A median of five bowel movements with intermittent anti-diarrheal medication in average was recorded in all cases at an early postoperative follow-up of 5 – 24 months.
Conclusion: Our initial experience on fifteen consecutive cases suggests taTME to be safe and effective in patients undergoing prophylactic restorative proctocolectomy with IPAA for FAP. Interestingly, at an early postoperative follow-up patients have a lower than usual frequency of bowel movements at an early postoperative stage. Further prospective evaluation of this strategy is mandatory, since early postoperative results suggest an excellent functional outcome.

P301

Long-term outcomes following stent placement as bridge to surgery compared to emergency resection in patients with acute left-sided colonic obstruction: a propensity score matched analysis from a national cross-sectional cohort study

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Aim: To investigate long-term oncological safety of SEMS placement as bridge to surgery (BTS) in curatively treated patients with obstructive colon cancer.
Method: Data from all Dutch patients that presented with a malignant left-sided colonic obstruction between 2009–2016 are registered in the Dutch Surgical Colorectal Audit. In a collaborative snapshot project, these data were extended with additional treatment and long-term outcome data. Following one-to-two propensity score matching, patients treated with stent placement and consecutive resection, were compared to patients treated with emergency resection. Primary outcomes were overall survival and disease free survival.
Results: Following propensity score matching, 666 patients remained for analysis (222 SEMS patients *vs* 444 emergency resection patients). Median follow-up was 36 months (i.q.r. 16–60). Overall survival, disease free survival and local recurrence rate were not significantly different between treatment groups ($P = 0.175$, $P = 0.231$ and $P = 0.437$, respectively). In the SEMS group, significantly more patients underwent laparoscopic surgery (42.5% *vs* 7.0%), had a primary anastomosis constructed (74.3% vs 39.9%) with significantly fewer permanent stomas (23.9% *vs* 43.5%). Overall hospital stay was longer in the SEMS group (13 *vs* 15 days, $P = 0.043$).
Conclusion: Stent placement does not seem to negatively influence oncological long-term outcomes in patients treated with curative intent.

P302

Differential immune response and predictability of length of stay and morbidity in laparoscopic and robotic colorectal surgery

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Aim: To compare the inflammatory response between robotic and laparoscopic colorectal resections and determine whether elevated inflammatory markers are predictors of morbidity and length of stay (LOS).
Method: Prospectively collected data of 192 robotic and 175 laparoscopic anterior resections were reviewed and analysed from 2013–2017. Post-operative CRP and neutrophil-lymphocyte ratio (NLR) were correlated with the risk of complications and LOS.
Results: Overall, there was a significant difference in the mean CRP post-operatively between the robotic and laparoscopic groups ($P = 0.002$).

High CRP and NLR values on days 2 and 3 were good predictors of post-operative complications ($P < 0.05$); CRP >160 in the robotic and >180 in the laparoscopic group, on day 3, picked up 82% and 76% of grade III/IV complications, with a negative predictive value of 96% for robotic and 92% laparoscopic groups respectively.

Higher values also correlated with longer hospitalization in both groups ($P < 0.05$); CRP >115 on days 2 or 3 in the robotic group, >145 on day 2 and >175 on day 3 in the laparoscopic group can predict increased LOS (>5 days).
Conclusion: In patients undergoing robotic or laparoscopic colorectal resections, CRP and NLR on day 2 or 3 are good predictors of complications and LOS.

P303

Influence of neo-adjuvant radiation on short-term surgical outcomes in rectal cancer: a systematic review

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Aim: To examine the current evidence addressing the influence of neo-adjuvant radiation on short-term surgical outcomes in rectal cancer.
Method: A comprehensives search was carried out in October 2017. Search terms were: (rectal cancer OR colorectal cancer) AND (neoadjuvant radio* OR neoadjuvant chemoradio*) AND (surgical outcomes OR anastomotic leak* OR operative time OR blood loss OR hospital stay OR complications OR margins of excision OR mortality OR morbidity OR conversion to open)
Results: Nine original studies containing a total of 24 590 patients were included. 9442 patients received neoadjuvant radiation in comparison to 15 148 patients who had surgery alone. There was no increase in mortality in the neo-adjuvant therapy group. Outcomes definitions and reporting was variable between authors. There was no agreement on the actual effect of neo-adjuvant radiotherapy on the rate of surgical morbidities. However, authors who utilised large databases and adjusted for confounders concluded that there was no association between neo-adjuvant radiotherapy and worse short-term surgical outcomes.
Conclusion: It appears that there is emerging evidence from large databases indicating the absence of correlation between neo-adjuvant radiation and worse short-term surgical outcomes. However, a consistent conclusion from high-quality studies is still lacking. To investigate this further, more studies are required.

P304

The variety of Scandinavian watchful waiting follow-up programs in patients with a malignant colorectal polyp. A web-based questionnaire survey

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Aim: The introduction of screening for colorectal cancer has increased the incidence of endoscopically removed malignant polyps. Following endoscopic removal of a malignant polyp patients may either undergo subsequent bowel resection or be enrolled in a watchful waiting program. There is, however, no solid evidence for the optimal watchful waiting follow-up program. The aim of this study is to describe the variety of Scandinavian follow-up programs for patients with endoscopically removed malignant polyp and watchful waiting. Focus is patients with endoscopically removed malignant polyps with resection margin of >1 mm.
Method: The study is conducted as an internet based questionnaire survey sent to all colorectal surgical departments in Scandinavia performing ≥20 colorectal procedures per year. The responders were asked to differentiate between follow-up program of rectal and colonic malignant polyp respectively, as well as between presence and absence of high-risk histological features. Data will be presented as frequency and percentages including 95% confidence intervals.

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Results: Results are currently being analyzed and will be ready for presentation at the ESCP meeting.

P305

The relationship between proportion of stroma in pre-treatment biopsy, response to chemoradiotherapy and survival in patients with rectal cancer

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Aim: A prognostic biomarker for rectal cancer (RC) patients' response to (neo-adjuvant chemo-radiotherapy (nCRT) before surgical resection does not exist. This study aimed to improve management of RC patients and personalise treatment strategies by identifying prognostic biomarkers for response to nCRT. The relationship between the proportion of stroma (PoS) in pre-treatment RC biopsies and clinico-pathological variables and outcome were assessed.
Method: Clinico-pathological data and haematoxylin eosin (H&E) stained pre-treatment biopsy slides were collected from 93 RC patients. Relationship between PoS, depth of invasion (cT, ypT), lymph node status (cN, ypN), presence of distant metastasis (cM), tumour regression grade (TRG) and disease free survival (DFS) were investigated by point counting.
Results: Median (36.3 to 96.5%) PoS was 68.8%. High PoS was associated with low cT ($P = 0.033$) and ypT ($P = 0.046$). PoS and DFS showed a non-linear relationship. Patients with a $76.57 < \text{PoS} < 85.15\%$ showed a significantly longer DFS compared to patients with $\text{PoS} \leq 76.57$ ($P = 0.014$) or $\geq 85.15\%$, ($P = 0.049$).
Conclusion: PoS was identified as a non-linear prognostic marker regarding DFS in RC pre-treatment biopsies. This finding complements the report on PoS in pre-treatment oesophageal cancer biopsies.

P307

Concordance of pre- and postoperative tumour staging of colon cancer

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Aim: The primary aim was to investigate how well preoperative computer tomography (CT) staging (cTN) correlates with the postoperative histopathological staging (pTN). A secondary purpose was to validate the data reported to the Swedish Colorectal Cancer Registry (SCRCR).
Method: The SCRCR was used to identify colon cancers diagnosed at Skåne University Hospital during 2013–2016. Data were gathered from medical records regarding cTN- and pTN-staging along with predefined patient and tumour variables. The concordance between cTN and pTN was analyzed using Cohen's kappa.
Results: 974 colon cancers were identified and 383 (39%) remained when cancers not pre- and postoperatively staged were excluded. The weighted kappa coefficient between cT/pT, and cN/pN were 0.27 and 0.21 respectively (fair agreement). Low- and high-risk tumors based on combined T- and N-staging rendered a kappa coefficient of 0.19 (slight agreement). Validation of data in the SCRCR showed that 78% of completely staged tumors were correctly entered into the SCRCR.
Conclusion: CT staging of colon tumours was less frequently carried out than expected and seems more challenging than previously described, even high-risk tumours appear demanding. Efforts for entering correct data into the SCRCR are necessary. Future studies should focus on identifying high-risk tumours.

P308

Predicting the response to preoperative radiation therapy by next-generation sequencing of the gene expression profiles in rectal cancer

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Aim: Predicting the tumour response to preoperative radiation therapy is an important role to improve survival in the treatment of cancer. However, the response to radiation therapy differs among individual tumours. Our objective were to identify a set of differentially expressed genes that can be used for characterization and prediction of response to radiation therapy in rectal cancer.
Method: The gene expression profiles of tumours from 19 rectal cancer patients who were responders ($n = 8$) and non-responders ($n = 11$) to preoperative radiation therapy were analyzed using RNA sequencing (RNA-Seq). Response to radiotherapy was determined by histopathologic examination of surgically resected specimens and classified as responders or non-responders.
Results: By determining gene expression profiles using RNA sequencing, we identified 123 novel discriminating genes of which the expression differed significantly between responders and non-responders.

The expression of 65 genes was significantly up-regulated, and 58 genes were significantly down-regulated in responder group.
Conclusion: The present study suggested the possibility that gene expression profiling may be useful in predicting response to radiotherapy to establish an individualized therapy for rectal cancer.

These genes may be used as potential biomarkers in predicting response to radiation therapy in rectal cancer.

P309

The obesity paradox in beyond total meso-ectal excision surgery for locally advanced and recurrent rectal cancer

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This abstract has been submitted as a full article for publication.

P310

Evolution of perineal reconstruction in salvage abdomino-perineal excision (APE): a decade of outcomes from a single centre

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Aim: Use of myocutaneous tissue flaps is recommended as the primary mode of perineal reconstruction following salvage APE for anal squamous cell carcinoma (ASCC).

We report outcomes of both muscle flap reconstruction and biologic mesh reconstruction of the pelvic inlet.
Method: Data on all patients undergoing an APE following primary chemoradiotherapy for ASCC from a single tertiary referral centre. Perineal reconstruction technique, length of stay (LOS), mortality and morbidity data were recorded.
Results: 332 patients were treated over 11-years, 26 were eligible for salvage surgery and 23 underwent salvage APE (Age 54 range 40–71, 8 Male:16 Female).

There was a 0% 90-day mortality.

14 patients had muscle flap reconstruction with a median LOS of 17 days, 3 (21%) major wound complications and 6 (43%) minor wound complications. 9 had a biological mesh reconstruction with or without gluteal advancement flap reconstruction, with a median LOS of 12 days, 1 (11%) major wound complication and 3 (33%) minor wound complications. Donor site morbidity was evident in 4 (29%, 4/14) patients.
Conclusion: Evolution from muscle flap as a standard method to augmentation with biological mesh for perineal reconstruction appears safe and reduces perineal wound complications, donor site morbidity and LOS.

P311

The use of colonic stents as a therapeutic option in obstructive colon neoplasia

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Aim: Analyze the results of using the stent in obstructive colorectal cancer in terms of morbidity and mortality as a bridge to elective surgery.
Method: Among the obstructive colorectal cancer cases diagnosed between 1996 and 2017 only the patients with a digestive stent were selected. A retrospective descriptive study was carried out analyzing the reason for the stent placement, the morbidity and mortality of its use, the technical and clinical success, as well as the number of elective surgeries realized and postoperative complications.
Results: The series consists on 134 patients, 36.2% of women, with an average age of 72 years. 36.8% of all the patients have an ASA III or higher. The placement of the stent was for palliative intention in 36.9% of patients and as a bridge to surgery in 63.1%. Technical success was achieved in 97% of the cases and clinical success in 79.8%. Elective surgery was completed in 68% of the patients in whom it had been planned.
Conclusion: The digestive stent is a valid therapeutic option for patients with obstructive colon neoplasia.

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P312
Adherence to surveillance guidelines for histologically diagnosed sessile serrated lesions

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Aim: Sessile serrated lesions (SSL) are precursors of colorectal cancer. British Society of Gastroenterology (BSG) guidelines recommend surveillance colonoscopy at 3 years for high-risk patients (SSL ≥ 10 mm or dysplasia) and no follow-up in those with low risk lesions (SSLs < 10 mm without dysplasia). The aim of this study was to assess adherence to BSG guidelines in a University Hospital.
Method: A retrospective cohort study was performed of all patients undergoing colonoscopy from January 2014 to December 2015. Patients with a confirmed SSL were identified from a histology database and additional data was obtained from electronic records.
Results: 174 patients were identified (74 excluded). 44 patients (44%) were deemed to have correct follow-up. Of those with incorrect follow up (56%), 35 patients were high risk, of which 19 had no follow-up. Patients in high-risk group were not more likely to have correct follow-up when compared to the low-risk patient group ($P = 0.697$ Fischer's exact test).
Conclusion: At present, there is a discrepancy between the published guidance and the follow-up arranged by clinicians. This could lead to the development of a cancer in a patient who had not been followed-up or procedural risk and cost in those undergoing un-necessary surveillance.

P313
Does complete mesocolic excision for sigmoid cancer increase the risk of bowel dysfunction?

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Aim: To investigate if complete mesocolic excision (CME) might carry a higher risk of bowel dysfunction and reduced quality of life (QOL).
Method: Questionnaire survey comparing long-term bowel after CME (study group) with conventional resections (control group). 622 patients undergoing elective resections for stage I-III sigmoid colon adenocarcinoma in the period 2008–14 were eligible to receive the questionnaire in November 2015. Primary outcomes were four or more bowel movements daily, nocturnal bowel movements, unproductive call to stool, obstructive sensation and impact of bowel function on QOL.
Results: 127 (69.0%) and 289 (66.0%) patients in the study and control groups respectively responded to the questionnaire after medians of 4.41 (IQR 2.50; 5.83) and 4.57 (3.15; 5.82) years respectively ($P = 0.048$). Adjusted ORs based on logistic regression showed no association between CME and increased risk of four or more bowel movements daily (OR 1.14 (95% CI 0.59–2.14)), nocturnal bowel movements (OR 1.31 (0.66–2.53)), unproductive call to stool (OR 0.99 (0.54–1.77)), or obstructive sensation (OR 1.01 (0.56–1.78)). CME was not associated with moderate to severe impact on QOL.
Conclusion: For patients with sigmoid cancer, CME seems not to be associated with a higher risk of either bowel dysfunction or impaired QOL.

P314
MUC-16 and KLK13 are independent prognostic biomarkers in colon cancer

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Aim: The aim of this study was to find new prognostic markers for colon cancer in order to improve the sensitivity and specificity of assessing the prognosis for patients diagnosed with colon cancer.
Method: Preoperative frozen serum samples of 147 patients, who had undergone cancer surgery at our university hospital in 1998–2003, were analyzed with the multiplex proximity extension assay Olink Oncology II® (Olink Bioscience, Uppsala Sweden), a panel constituting of 92 immunological and oncological markers.
Results: The disease-specific survival (DSS) was significantly better among patients with low level of MUC-16, compared to patients with high level (HR 3.15; 95% CI [confidence interval] 1.68–5.93; $P < 0.005$). The difference remained in subgroup analysis with HR 9.33 (95% CI 1.09–80.0 $P = 0.042$) for stages I-II and HR 2.10 (95% CI 1.07–4.11; $P = 0.030$) III-IV. Low levels of KLK13 served as an independent prognostic marker (HR 0.51; CI 0.28–0.94; $P = 0.027$) improving DSS in the whole cohort, as well as the subgroup of right sided disease (HR 0.36; 95%CI 0.14–0.92; $P = 0.033$).
Conclusion: MUC-16 (CA-125) and KLK13 were independent markers in colon cancer and they are clinically interesting as there are commercially available as single serum assays.

P315
A retrospective multicentre cohort study comparing perineal morbidity following abdominoperineal resection with and without omentoplasty in rectal cancer patients

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Aim: Abdominoperineal resection (APR) is associated with substantial morbidity. This study aimed to compare perineal morbidity with and without use of omentoplasty (OP).
Method: A retrospective multicentre study was conducted in patients undergoing APR for primary rectal cancer in three hospitals between 2000 and 2017. Outcomes included rate of primary perineal wound healing, actuarial perineal complications, return to theatre, and OP-related morbidity.
Results: Of 254 patients, 106 had OP and 148 non-OP. Median follow-up was 38 (IQR 17–69) and 37 months (IQR 18–59), respectively. The primary wound healing rate at 30 days did not significantly differ between groups (65% OP vs 62% non-OP; $P = 0.557$), nor at 1 year postoperatively (54% OP vs 51% non-OP; $P = 0.665$). Perineal herniae were more frequently observed after OP (18% vs 7%; $P = 0.011$), and return to theatre was also more frequent (21% vs 10%; $P = 0.016$). Complications related to the OP itself were observed in eight patients, of which six required reoperation.
Conclusion: In this multicentre study, OP did not enhance the primary perineal wound healing after APR, and the OP itself appeared more at risk of perineal hernia. These observations are in keeping with a recent Dutch nationwide study on the value of OP in APR.

P316
The addition of MUC-16 and KLK13 serum biomarkers improves prognostication of colon cancer patients

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Aim: Our aim was to develop a risk index for prognostication of colon cancer by the aid of a multiplex biomarker panel.
Method: Preoperative frozen serum samples of 147 colon cancer patients undergoing surgery at our university hospital in 1998 to 2003 were analyzed with the multiplex proximity extension assay Olink Oncology II® (Olink Bioscience, Uppsala Sweden). This panel consists of 92 immunological and oncological markers. The prognostic value of all 92 biomarkers were analyzed by uni- and multivariable Cox regression
Results: Multivariable Cox regression model with the clinical variables age over 67, gender, and Dukes classification served as a baseline model giving an integrated area under the curve (iAUC) for 6 to 48 months after primary surgery of 0.796. As conditional forward stepping was applied to all 92 biomarkers, keeping the baseline model variables included, only KLK13 (hazard ratio [HR] 0.37; 95% confidence interval [CI] 0.23–0.60; $P < 0.001$) and MUC-16 (HR 2.11; 95% CI 1.52–2.92; $P < 0.001$) served as independent prognostic factors, increasing the iAUC to 0.873.
Conclusion: The addition of MUC-16 and KLK13 serum biomarkers to previously recognized clinical prognostic factors improves prognostication of colon cancer patients.

P317
Patterns of complications after urinary tract reconstruction in multivisceral surgery for colorectal and anal cancer

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Aim: To assess morbidity of urinary tract reconstruction dictated by colorectal and anal malignancy and to define potential patient and surgical factors as predictors of urological complications.
Method: Retrospective, single centre cohort study including patients undergoing multivisceral surgery for colorectal or anal malignancy, encompassing part of the urinary tract with synchronous reconstruction, between 2004–2015. Data were collected from medical records with follow-up until at least 1 year after the index surgery. Complications were graded according to the Clavien-Dindo classification

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system of surgical complications. Predictors of urological complications were analysed with multivariate logistic regression models.
Results: The study included 189 patients; 121 underwent cystectomy and 68 partial ureter resection. The rate of urological complications (Clavien-Dindo >II) was 25%. The risk of major urological complications was significantly higher in patients subjected to ureter resection compared to after cystectomy (OR 2.60, 95% CI 1.23–5.49). Also, preoperative radiotherapy and intestinal anastomotic dehiscence significantly increased the risk.
Conclusion: Multi-visceral resection and reconstruction of the urinary tract can be performed with reasonable morbidity in patients with locally advanced colorectal and anal cancer to achieve potentially curative resections with uninvolved margins.

P318

Surgical resection for treatment of colorectal polyps: a single centre retrospective cohort study

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Aim: To evaluate complications of surgically resected colorectal polyps and compare the amount of surgical resections and encountered malignancies before and after implementation of the Dutch bowel screening program.
Method: This retrospective cohort study included patients who underwent surgical removal of colorectal polyps between January 2012 and December 2017. Patients with preoperatively established malignancy and polyposis were excluded.
Results: 143 patients were included. The surgical procedure was a segmental colectomy in 115 patients (80.4%). The procedures were performed laparoscopically in 79.7% (n = 114). Major complications (Clavien-Dindo ≥3b) occurred in 7 patients (4.9%), without mortality. The anastomotic leakage rate was 3.5% (n = 4).

In 2012, 3.2‰ of all conducted colonoscopies resulted in surgery (n = 18), compared to 5.8‰ in 2016 (n = 30). The overall malignancy rate before the implementation of the screening program was 28.9%, compared to 22.4% after the implementation (P = .406). High-grade dysplasia was seen in 77.4% of encountered adenomas before the implementation compared to 42.5% after implementation (P = .001).
Conclusion: After the implementation of the screening program the amount of surgically resected colorectal polyps almost doubled. Nevertheless, the malignancy and high-grade dysplasia rate decreased.

P319

1 year survival of colorectal cancer patients in England and Wales

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Aim: Patients are considered 'end of life' when they are likely to die within 12 months. We aimed to evaluate which patients are most likely to die within 1 year of colorectal cancer (CRC) diagnosis.
Method: National audit data for 56631 patients newly diagnosed with CRC in England and Wales between April 2013 and March 2015 was studied. The 22% (12572) survived less than 1 year after diagnosis. Multivariable logistic regression was used to estimate the odds ratio of death within 1 year adjusted for age, deprivation, diagnostic admission type, urgency of index procedure, TNM staging, cancer site, performance status and Charlson co-morbidity score.
Results: Strongest predictors of death within 1 year were age >85 years (OR 3.34, P = <0.001), poor performance status (OR 4.49, P = <0.001) and metastatic disease (OR 4.15, P = <0.001). Emergency diagnostic admission increased risk twofold (OR 2.31, P = <0.001). Protective factors included rectal pathology (OR 0.70, P = <0.001) and less deprivation (OR 0.88, P = 0.005).
Conclusion: At the time of diagnosis, clinicians should consider patient and tumour characteristics which increase the likelihood of patient death within 1 year. Identifying these patients promptly is important to facilitate early palliative care involvement, prevent futile interventions and reduce unplanned hospital admissions.

P320

Establishing the current burden of colorectal cancer patients who are surviving less than 12 months in England and Wales

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Aim: Patients are considered 'end of life' if they are likely to die within 12 months. We aimed to evaluate the burden of colorectal cancer (CRC) patients dying within 12 months of diagnosis.
Method: National audit data for English and Welsh patients dying within 12 months of CRC diagnosis, between April 2010 and March 2016, was linked to hospital administrative records to obtain more information about frequency, length and type of hospital admissions within the last year of life.
Results: Approximately, one fifth of patients newly diagnosed each year with CRC die within 1 year. Patients surviving <1 year have a median of 2 overnight hospital admissions (IQR 1–3) and total 18 days (IQR 8–35) in hospital. One third of patients spend >1 month in hospital. 47.3% have at least one emergency admission in their last month of life and 16.8% in their last week.
Conclusion: 20% of patients newly diagnosed with CRC will die within 1 year. This constitutes a significant burden which requires careful consideration in the context of an ageing population, with CRC a disease predominant in the elderly. Use of palliative care services should be optimised to reduce unnecessary admissions at the end of life.

P321

Place of death for colorectal cancer patients in England and Wales

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Aim: A recent Office of National Statistics (ONS) survey indicated that over 80% of patients would prefer to die at home. Evidence suggests patients dying in hospital may have poorer end of life experiences. We aimed to evaluate trends in place of death for colorectal cancer (CRC) patients.
Method: National audit data for 177 426 patients newly diagnosed with CRC in England and Wales between April 2010 and March 2016 was used. Records were linked to ONS data to establish place of death up to 31/03/2017.
Results: Since 2010, the overall proportion of patients dying in their own homes has increased from 20.6% to 30.8%, with less marked increases in hospice (11.5% *vs* 17.0%) and care home deaths (9.6% *vs* 14.9%), and a reduction in hospital deaths (56.4% vs 34.8%). Patients surviving <1 year are more likely to die in hospital (40.7% vs 31.5%). 87.9% patients with emergency admission in their last week of life die in hospital.
Conclusion: Currently, the proportion of CRC patients dying at home remains relatively low. Patients surviving <1 year, particularly those with unplanned admissions, appear most vulnerable to dying in hospital. Adequate community and palliative care support may facilitate death in patients' usual residence.

P322

Anal squamous cell carcinoma. A 10-year case series at Chelsea and Westminster Hospitals NHS Foundation Trust

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Aim: We present a case series of Anal Squamous Cell Carcinomas (ASCC) diagnosed at Chelsea and Westminster NHS Hospitals Foundation Trust between 2008–2018.
Method: Patients were identified using MDT outcomes and clinical databases. Patients with a pathological diagnosis of ASCC between 2008–2018 were included.
Results: We identified 183 patients, 27% were female and 62% had HIV. The mean age at diagnosis for HIV patients was 46 (25–73) years and non-HIV patients 64 (32–90) years. 36.5% of HIV patients were known to have Anal Intraepithelial Neoplasia (AIN) prior to ASCC diagnosis. HIV and non-HIV patients had similar staging at presentation (T1/2 65% *vs* 64%, T3/4 35% vs 36% and N0/1 78% *vs* 79%, N2/3 20% vs 20%). 6% of HIV patients had metastatic disease versus 4% non-HIV patients. 66% had chemoradiotherapy and 24% had local excision alone of which 63% were HIV positive. This may be due to HIV patients undergoing AIN surveillance. 18% of patients had a recurrence, 13% after chemoradiotherapy. HIV patients were more likely to have recurrent disease (P = 0.01). 14 patients had salvage surgery; 71% were HIV positive.
Conclusion: Although staging between groups is similar, HIV positive patients were more likely to have recurrent disease.

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P323

UK rectal cancer management – an algorithm

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Aim: The research and subsequent advancement of treatment for rectal cancer has increased rapidly. As well as the improvement in cancer outcomes, we have also been left with confusion with regards to the best treatment for our patients. In an attempt to correlate the ongoing difference in surgical opinion we have formed an algorithm looking solely at rectal cancer.
Method: The algorithm includes both current standard pathways in the UK suggested by the UK Association of Coloproctology and the London Cancer Alliance, as well as pathways of current, worldwide rectal cancer trials, which are either completed or ongoing.
Conclusion: The incidence of rectal cancer continues to rise. The approach and decision making varies worldwide and thus, the optimal management remains a little unclear. The role of this algorithm is to simplify the decision making process at the MDT level, whilst allowing advancement of treatment. As we are now, slowly, centralising rectal cancer management in the UK, referrals to specialist centres and consideration for ongoing trials may be more accessible and aided by the algorithm.

P324

Is re-evaluation by MRI, CT and discussion at MDT necessary after neoadjuvant radio-chemo-therapy in rectal cancer?

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Aim: Nowadays, rectal cancer patients are discussed at a MDT conference at time of diagnosis to outline the initial treatment plan, including type of surgery. Danish guidelines recommend a re-evaluation by MRI, CT, and a second MDT conference for patients, who have received neoadjuvant oncological treatment. We have determined whether this second MDT contributes to any change of the initial treatment plan and in that case, the reason for the change.
Method: We performed a retrospective study of patients diagnosed with primary rectal cancer from January to December 2014, who had received neoadjuvant radio-chemo-therapy according national guidelines. Patients from five Danish hospitals were identified in the Danish Colorectal Cancer Group database. Notes from the two MDT conferences were reviewed to determine the treatment plan. Operation notes were reviewed to confirm type of surgery performed.
Results: In total, 180 patients were included. The treatment plan was changed in 13% ($n = 24$) of the patients after the second MDT conference. Reasons for the change were distant metastases (29%, $n = 7$), local tumour progression (21%, $n = 5$), local tumour regression (25%, $n = 6$), and other causes (25%, $n = 6$).
Conclusion: Re-evaluation after neoadjuvant radio-chemo-therapy is recommended, because disease progression or regression is seen in every six patient.

P325

Ex-vivo intra- arterial methylene blue injection in colorectal cancer

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Aim: The ideal lymph node (LN) count has been a point of discussion. Different factors influence LN count in colorectal specimens (surgery, pathologist).

The aim was to assess the impact of *ex-vivo* intra-arterial methylene blue (MB) injection for colorectal cancer on LN harvest and staging.
Method: Between December 2016 and October 2017, 133 consecutive colorectal oncological specimens were examined in a unicentric study. Two group were analyzed (group I: no staining; group II: MB injection) for LN count and presence of metastases.
Results: 133 patients were enrolled. 57 performed a colectomy and 76 performed an anterior rectal resection. 50% were injected with MB. In the colon analysis MB injection associated with higher LN count ($P = 0.008$), fewer patients with less than 12 LNs ($P = 0.0009$). In the rectal specimens MB injection decreased the number of patients not reaching 12 nodes ($P = 0.019$). MB injection was associated with higher identification of nodes less than 3 mm in both groups. The number of metastatic LNs did not alter with MB in both groups.
Conclusion: *Ex-vivo* MB injection increases the number of LNs retrieved in colorectal specimens and decreases the number of patients with less than 12 LNs. It does not however increase the number of metastatic nodes retrieved.

P326

Is local excision for suspicion of complete tumor response after radiochemotherapy for rectal cancer safe and feasible? A case-matched study versus total mesorectal excision in 110 patients

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Aim: Outcome of local excision (LE) for suspicion of complete tumor response (CTR) after neoadjuvant radiochemotherapy (RCT) for rectal cancer.
Method: 39 high-risk and aged patients with suspicion of CTR after RCT underwent LE and were matched (gender, BMI, tumor location and ypTNM) to 71 patients who underwent total mesorectal excision (TME).
Results: Following LE, tumor was ypT0 (17/39, 44%), ypTis (4/39, 10%), ypT1 (8/39, 21%) (ypT0+Tis+T1=29/39, 74%), ypT2 (8/39, 21%), or ypT3 (2/39, 5%), leading to salvage TME in 4 patients. After a mean follow-up of 39 ± 31 months, locoregional (LE: 1/39, 3%; TME: 3/71, 4%; NS) and metastatic recurrences (LE: 3/39, 8%; TME: 5/71, 7%; NS), severe morbidity (LE: 5/39, 13%; TME: 14/71, 20%; NS), definitive stoma (LE: 3/39, 8%; TME: 4/71, 6%; NS), and major LARS (LE: 7/39, 18%; TME: 6/71, 8%; NS) rates were similar. Long-term survival was significantly lower in LE (LE: 33/39, 85%; TME: 69/71, 97%; $P = 0.023$), but related to non-oncological causes.
Conclusion: In aged and high-risk patients, LE in case of suspicion of CTR after RCT seems safe in 74% of the patients with ypTis-T0-T1 tumors, even if results are impaired by salvage TME in some patients.

P327

Does visceral obesity at diagnosis have an impact on oncologic outcomes of patients operated for colorectal cancer with curative intent?

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Aim: To evaluate the impact of visceral obesity (VO) measured by computerized tomography (CT) on oncologic outcomes of patients operated for colorectal cancer (CRC).
Method: Cohort study. We included all the consecutive CRC patients that underwent radical resection with curative intent that had a pretreatment CT available between 2010–2015 at our institution. We excluded patients with metastatic disease, previous cancer history, inflammatory bowel disease and hereditary cancer syndromes. Demographic, perioperative, pathological and follow-up variables were recorded. Visceral fat area (VFA) was measured on pretreatment axial abdomen CT at L3-L4 intervertebral disc space level. VO was defined as VFA >130 cm^2. Kaplan-Meier curves were compared using long-rank test, and Cox regression analysis was used to determine independent factors associated with survival.
Results: We identified 364 patients of whom 243 (67%) had VO. Median follow-up was 52 (4–101) months. Global (GS) and disease-free survival (DFS) were 79.5% and 70.1% at 5 years, respectively. We found no difference on GS or DFS according to VO, even when stratified by TNM stage. On multivariate analysis, VO was not independently associated with GS or DFS.
Conclusion: VO has no clear impact on oncologic outcomes of patients operated for CRC.

P328

Primary anastomosis in emergency resection for obstructing left sided colonic cancers: is it safe?

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Aim: To assess outcome after emergency left sided resection with primary anastomosis for obstructing colonic cancers in a highly specialised tertiary colorectal unit.
Method: Data from a regional cancer database were extracted for patients that underwent emergency resection and primary colo-colonic or colorectal anastomosis for obstructing left sided colonic cancer from 2008–2015. Patients with perforation, rectal cancer, stoma formation, and stenting were excluded. Primary outcome was clinically relevant anastomotic leak rate. Secondary outcomes were 30-day mortality and lymph node harvest.
Result: Emergency resection for obstructing left sided cancer was performed in 77 cases. Excluded were patients who had a Hartmann's procedure ($n = 11$). Inclusion criteria were met by 66 patients (median age 71, males $n = 39$). Anastomotic leak occurred in 9% ($n = 6$) and 30-day mortality was 4.5% ($n = 3$). No mortalities were observed in the anastomotic leak population. All anastomotic leaks were managed by reoperation, anastomotic take-down and end colostomy.

Average lymph node harvest was 19 per patient. Less than 12 lymph nodes were harvested in 15% ($n = 9$) of patients undergoing curatively intended resections

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Conclusion: Our findings indicate that primary anastomosis for obstructing left sided cancer is a safe option for selected patients in a highly specialised centre.

P329

Survey regarding personal and family members' colorectal cancer screening among general surgeons: a preliminary result

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Aim: To evaluate personal and family members' colorectal cancer (CRC) screening behaviors of general surgeons and their preferences for screening options.
Method: A cross-sectional survey was conducted among general surgeons between February and April 2018. Survey included items on respondent demographics, CRC screening options, and surgeons' annual CRC volumes (high-volume surgeons defined as performing ≥25 cases per year).
Results: A total of 538 respondents completed the survey. Most respondents were male (91.4%) and 34.5% of participants were high-volume surgeons. Almost one-third of surgeons (29.9%, $n = 159$) were over 50 years of age. Nearly one-half of them (47.1%, $n = 75$) were reported performing own personal CRC screening and 78.3% preferred colonoscopy. Among respondents under 50 years of age, 56.6% ($n = 213$) provided CRC screening for their first-degree relatives, mostly with colonoscopy. The main reasons for non-participation in CRC screening were procrastination because of workload, hesitation, and difficulties in convincing (for surgeons' first-degree relatives). Surgeons with higher volumes more inclined to perform own personal screening ($P = 0.018$) and/or provided CRC screening for their relatives ($P = 0.015$).
Conclusion: We demonstrated that routine screening for CRC among surgeons and/or their relatives is not at the desired level. However, high-volume surgeons are more likely to participate in screening.

P330

ASA 3 colon cancer patients with emergency surgery

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Aim: Emergency colorectal surgery has a significant risk of mortality and morbidity. In this case, there are many treatment options such as ostomy, resection+ostomy or resection+anastomosis. The purpose of this study is to investigate the surgical procedures and outcomes who require emergency surgical intervention with colorectal cancer.
Method: Between 2010 and 2017 ASA 3 patients who underwent emergency colon cancer surgery were included in the study. All of the study group was evaluated within the first 30-day time-frame. The results were obtained by statistical comparison of the data of patients with and without mortality.
Results: 133 patients included in the study. There was no statistical difference in the demographic data of the groups and the indications of the operation. The differences and durations of surgery also did not make any statistical difference. The complication rate was the same according to the Clavien-Dindo classification (21.0%, 17.8%, $P = 0.577$).
Conclusion: In our study, we didn't observe any statistically different. However, it is known that the long-term outcomes of patients undergoing emergency surgery are worse than the elective patients at the same stage. As a result if it is possible to carry the surgical procedure to the elective conditions is more suitable.

P331

Pathologic complete response after neodyuvant treatment in locally advanced rectal cancer, is it predictable using pretreatment inflammatory indexes?

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Aim: To analyze whether "inflammatory indexes" are a useful tool for prediction of pathologic complete response in locally advanced rectal cancer patients treated with neoadjuvant radio-chemotherapy followed by surgery.
Method: Retrospective analysis of a prospectively maintained database for an observational national study of rectal cancer patients. Three different indexes have been used: netrophil-to-lymphocyte ratio, platelet-to-lymphocyte ratio and lymphocyte-to-monocyte ratio. All three have been converted to categorical variables following previous figures employed in previous works. Univariate analysis with Chi-square test for comparison of qualitative variables and T-Student for quantitative variables and multivariate analysis with linear regression were employed.
Results: None of the studied variables got statistical signification for prediction of pathologic complete response in the univariable nor the multivariable analysis. None of the inflammatory indexes analyzed with previously described ranges demonstrated any utility.
Conclusion: Inflammatory indexes have failed to demonstrate a significant relation to pathologic complete response in locally advanced rectal cancer patients after neoadjuvant treatment.

P332

Oncologic results after salvage surgery for recurrent colon cancer

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Aim: To analyze the results of salvage surgery for recurrent colon cancer.
Method: A retrospective review of patients who underwent surgery for recurrent colon cancer between 2009 and 2017 was carried out. Included variables are all those referred to operative data of the first intervention, histologic data, chemotherapeutic treatments and follow-up. Disease-free survival, overall survival and cancer-specific survival were determined. A study of possible factors that influence long-term oncological results is also carried out.
Results: A total of 27 patients were operated, 19 men, with an average age of 66 years. Disease-free survival mean time after the first intervention is 20.9 months. Recurrence type was anastomotic/perianastomic in 11.1%, mesenteric in 44.4%, retroperitoneal in 14.8% and peritoneal in 25.9%. We achieved 60% of R0 resections, 16% of R1 and 28% of patients were unresectable or R2 surgery. Complication′s rate was: 51.9% uneventful, 14.8% Clavien I, 22.2% Clavien II, 3.7% Clavien IIIa and 3.7% Clavien IIIb. Overall survival, cancer-specific survival and disease-free survival at 5 years is 48%, 40% and 38% respectively.
Conclusion: Recurrent colon cancer represent an important therapeutic challenge, however postoperative complication rate is more than acceptable and oncological results support the aggressive attitude in selected cases.

P333

Oncological results of locally advanced rectal cancer in the elderly

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Aim: To analyze the differences in oncological results between elderly patients (older than 70 years) versus non-elderly patients.
Method: The data analyzed included the rate of local and distant recurrence, disease-free survival and overall survival in a series of locally advanced rectal cancer patients treated by neoadjuvant radio-chemotherapy and surgery.
Results: There have been no differences in the performance of neoadjuvant treatment in both groups; however there was a selection of adjuvant chemotherapy in the over-70-years group. Non-tolerance rate to chemotherapy has been similar in both groups. The intention of the intervention has been considered curative in more than 90% of the cases in both groups without differences between them. No differences were found regarding local or distant recurrence rates between the groups. 5-years disease-free survival and overall survival is 56% and 60% respectively.
Conclusion: Rectal cancer in the elderly can be treated in a similar way to younger patients. Treatment tolerance can be similar in both groups, with minimal adaptations. Minimally invasive surgery has also favored surgery in this group. Disease-free survival and overall survival is similar, so prognosis is not conditioned just by age.

P335

LS-surgery of colorectal cancer with transvaginal specimen extraction: experience of one centre

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Background: Transvaginal extraction of specimen (NOSE) method in LS surgery of colorectal cancer seems to be an option for minimization of surgical trauma and severity of postoperative period.
Aim: The aim of the study was to analyze our own experience in LS-surgery with NOSE.
Method: 52 patients with T2-T4 CRC were included in the retrospective study. Two comparable groups were formed (26 patient each): LS-surgery of CRC with or without transvaginal extraction of specimen.
Results: In the issue 2 groups were comparable in terms of blood loss (120 vs 110 ml), operation time (160 vs 170 min) and average number of lymph nodes (13 vs 12). All resections were with negative margins (R0). Anastomoses were formed with circular stapler, hand-shewn extracorporally or hand-shewn intracorporally with LS-technique (NOSE-group only). In terms of postoperative complications both groups were comparable. Of course, the cosmetic effect was better in NOSE group. Also there were no wound complications in NOSE group.

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P336

Impact of neoadjuvant Imatinib treatment for rectal GIST

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Aim: Rectal gastrointestinal stromal tumor (GIST) is a rare disease, however the prognosis is the worst. Imatinib as a neoadjuvant treatment has not been thoroughly understood. This study is to investigate the role of neoadjuvant Imatinib treatment for rectal GIST.
Method: 33 patients with rectal GIST who underwent curative resection between 2002 and 2014 were included. Ten patients underwent Imatinib treatments before surgery, and 23 patients underwent rectal surgery first. Clinicopathologic characteristics, surgical outcomes, recurrence and survival were compared between groups.
Results: Initial tumor size was significantly larger in the neoadjuvant group (P = 0.036). Levator ani muscle encasement of tumor was more common in neoadjuvant group (90% vs 31.8%, P = 0.002). In neoadjuvant group, tumor size was significantly decreased after treatments. Resection margin involvement was identified in one of neoadjuvant, and four patients of control group without significance (10.0% *vs* 17.4%; $P = 1.000$). Blood loss was significantly greater in neoadjuvant group. There was no difference of sphincter preservation rate. No difference in 5-year disease free survival and local recurrence rate were found.
Conclusion: In rectal GIST, the Imatinib neoadjuvant therapy could reduce tumor size and enhance the possibility of curative resection with negative margin.

P337

Preoperative assessment of circumferential resection margin involvement in rectal cancer using magnetic resonance imaging: can perinodal extension be defined as circumferential resection margin involvement in rectal cancer?

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Aim: Preoperative assessment of CRM can influence whether preoperative chemoradiation treatment will be performed first or not in rectal cancer. The aim of this study is to investigate the correlation between CRM involvement in preopearative MRI and pathologic CRM after radical surgery.
Method: 127 patients were diagnosed more than T3 in preoperative MRI with rectal cancer they underwent curative resection between 2011 and 2015. Direct tumor spread (DTS) was defined as tumors extend beyond the muscularis propria and perinodal extension (PNE) was when mesorectal or lymph nodes deposits were present. The correlation between CRM in preoperative MRI and pathologic CRM after surgery was compared using McNemer's test.
Results: When CRM was defined less than or equal to 2 mm, preoperative CRM with direct tumor spread was matched pathologic CRM. It showed sensitivity with 18.2%, specificity with 89.5% and accuracy with 77.2% ($P = 0.265$). However, CRM with perinodal extension in preoperative MRI didn't match pathologic CRM. It's sensitivity was 18.2%, specificity 95.2% and accuracy 81.9% ($P = 0.011$).
Conclusion: In this study, we showed preoperative assessment of CRM involvement using MRI has higher false positive rates and CRM involvement with perinodal extension should be considered more carefully.

P338

Exploring long-term unmet supportive care needs and coping strategies of Asian colorectal cancer survivors: a qualitative study

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Aim: To understand long-term unmet supportive care needs and their coping strategies among colorectal cancer (CRC) survivors following 2-year post treatment period.
Method: Semi-structured interviews were conducted with a purposive sample of 30 CRC-survivors who had completed curative treatment. Patients were recruited from an outpatient clinic of a large tertiary hospital in Singapore. Interviews were audio-recorded, and transcribed verbatim. Thematic analysis was conducted using NVivo 12 software based on a ground theory approach.
Results: Participants comprised of 22 men (73.3%) and 8 women (36.7%), with median age of 64 years (51–70 years) who survived from CRC ranging from 3 years to 17 years. Unmet supportive care needs include: 1) unresolved peripheral neuropathy and altered bowel habits; 2) lack of information about detailed dietary choices after cancer treatment; and 3) challenges in workplace. Participants employed a range of strategies to manage adjustment to daily life including 1) use of alternative medicine and supplements; and 2) self-experimentation with various diets.
Conclusion: Asian CRC survivors face multiple challenges during and after treatment, which they may not highlight to their healthcare professionals. This finding demonstrates the importance of understanding CRC survivors' unmet needs for targeted interventions to improve survivorship experience.

P339

Does robotic total mesorectal excision provide optimal pathologic outcome in overweight males with low rectal cancer? Analysis of 890 cases

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Aim: Determination if robotic TME provides optimal outcomes in overweight males with low rectal cancer (MOL).
Method: Prospective data on patients undergoing robotic TME after neoadjuvant therapy for resectable cancer over 8 years was analyzed. Overweight- body mass index >25 kg/m2. Low rectal cancer- 6 cm from anal verge. Outcomes included circumferential resection margin (CRM) and TME quality. CRM- involved if <1 mm. TME quality was classified as complete, nearly-complete or incomplete. T-student and Chi-squared tests used to compare variables.
Results: Total 890 patients and 581 males (65.3%). 116 (13%) were MOL. CRM in MOL patients was significantly narrower *vs* all patients (6.8 ± 5.6 *vs* 8.3 ± 9.8 mm; $P = 0.029$) and *vs* other males (6.8 ± 5.6 *vs* 8.1 ± 9.8 mm; $P = 0.039$). MOL TME quality no difference (84%, 10%, 6% vs 88%, 9%, 3% $P = 0.57$). CRM involvement in MOL patients did not differ (4.3% vs 3.5%; $P = 0.55$). At multivariate logistic regression, MOL patients were not independent predictors of CRM involvement ($P = 0.06$).
Conclusion: Robotic TME may provide optimal pathologic outcome in MOL patients. Although CRM was a few mm less in MOL patients, the values were still within the range of uninvolved margins making the statistical difference clinically non-significant.

P340

Transanal minimally invasive surgery (TAMIS) for local excision of selected rectal tumors: investigating differences between individual learning curves and suggested institutional training pathway

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Aim: TAMIS is the method of choice for local resection of selected rectal tumors. Data on surgeons gain of competence is limited. This paper analyses the effect of proctored adoption of TAMIS on the learning curve.
Method: We analysis all TAMIS procedures performed by two surgeons since the adoption of the technique in October 2010 to November 2017. Cumulative summation analysis (CUSUM) determined the number of procedures required to obtain satisfactory result.
Results: The earliest adopter, surgeon A ($n = 103$), was not proctored and developed the standardized institutional program. Surgeon B ($n = 26$), had the benefit of a proctorship and availability of a standardized program. Surgeon A required 18–31 cases to reach proficiency. The later adopter, Surgeon B required 6–10 cases. For surgeon A, operative time decreased from 84.4 min to 55.9 min ($P = 0.001$). For surgeon B operative time decreased from 90.6 min to 53 min ($P = 0.04$). Overall margin positivity rates decreased from 21.7 percent to 4.8 percent ($P = 0.23$), complication rates decreased from 19.5 percent to 13.2 percent ($P = 0.02$).
Conclusion: Our results suggest that reaching satisfactory results for TAMIS approximately 18–31 procedures are required. With standardized institutional protocols and proctorship fewer case (6–10) may be required to reach proficiency.

P341

Is Carmofur a potential radiosensitizer for locally advanced rectal cancer?

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Aim: Previous work confirmed acid ceramidase (AC) expression conferred poorer neoadjuvant chemoradiotherapy response in rectal cancer. Biological (siRNA) AC knockdown improved radiosensitivity *in-vitro*. We aimed to assess the radiosensitizing potential of carmofur, a 5-FU derivative.
Method: Optimal carmofur dosing using ELISA activity assays with DMSO control was established in multiple colorectal cancer cells to achieve siRNA comparable AC

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knockdown. Clonogenic assays assessed cell survival following titrated carmofur dosing and increasing irradiation. Potential mechanistic work was undertaken using Western blotting (PARP-1).
Results: ELISA revealed reduced expression of AC to 10% with 8 μm concentration of carmofur LIM-1215, 16% 4 μm HCT-116, 24% 8 μm HT-29. Carmofur clonogenic assays demonstrated reduced colony-formation efficiency (colonies/number of cells plated–CFE) and improved radiosensitivity across cell lines. HCT-116 showed 0.438 (CFE) control v 0.183 (CFE) carmofur at 1 Gy, 0.140 (CFE) control v 0.076 (CFE) at 2 Gy ($P = 0.000563$). Biological and pharmacological knockdown revealed increased cleaved PARP-1; indicative of apoptosis.
Conclusion: Initial work demonstrates that carmofur pharmacological inhibition of AC produces comparative radiosensitizing effects *in-vitro* with these cell lines. Further work is needed to recapitulate these findings in 3D-models and ultimately *in-vivo* to establish a clinical role of carmofur in this setting.

P342
A qualitive study of Cancer patients perspective of the straight to test 2-week wait colorectal cancer pathway, lessons for pathway implementation

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Aim: Previous studies have shown the benefits of straight to test 2-week pathways, highlighting their cost-efficiency and feasibility, however have not fully explored the patient perspective. Our study aims to undertake an in-depth assessment of patient perspectives from point of referral to treatment.
Method: Patients diagnosed with colorectal cancer and undergone surgery were invited to participate in face to face semi-structured interviews of their experience of the colorectal 2-week wait straight to test pathway. Interviews were recorded and transcribed. Nvivo software transcripts were analysed using interpretative phenomenological analysis to identify the eminent themes and participant experiences.
Results: Thematic analysis identified 4 main themes: time, knowledge of the pathway, communication and patient personality. The time saving with straight to test investigations were seen as beneficial by all participants; however this was caveated by the need for a clear understanding of the pathway at outset and regular communication along the pathway by staff. Patient personality altered the perceived benefits for some patients.
Conclusion: Straight to test pathways are recognised by patients as being of clear benefit. However a patients clear knowledge of the pathway with regular communication is necessary to ensure a positive patient experience and should be considered in pathway design.

P343
Can preoperative ^{18}F-FDG PET/CT predict KRAS mutations in a European population with metastatic colorectal cancer?

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Aim: To investigate whether ^{18}F-FDG PET/CT can be used to predict the KRAS status of metastatic colorectal cancer (CRC).
Method: Review of prospectively collected data between 2010 and 2015 of patients with metastatic CRC was performed, either diagnosed at presentation or during follow-up of patients with early disease. Patients underwent ^{18}F-FDG PET/CT as part of the preoperative staging and KRAS mutation was determined.
Results: 46 of 91 patients were included. Mutations in KRAS gene were detected in 26 primary tumours, while KRAS wild-type was present in the remaining 20. Although there was a trend for higher SUVmax values in KRAS-mutated tumours compared to KRAS wild-type cases (median SUVmax 13.3 *vs* 11.6, respectively), non-parametric tests gave *P*-value greater than 0.05. Tumour size and T stage were also greater in KRAS-mutated group (6 cm *vs* 4 cm, 15.4% T4 *vs* 10%, respectively) but no statistical significance was found. On the contrary, 70% of wild-type tumours had lymph node invasion compared to 57.7% in the mutated group ($P > 0.05$).
Conclusion: Our results suggest that FDG avidity of CRC has no significant clinical value in predicting the KRAS mutation status. Further studies with a larger number of patients are needed.

P344
Prognostic impact on survival of sequential [18F]-FDG-PET/CT before and after chemoradiotherapy in locally advanced rectal cancer

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Aim: To analyse the prognostic value of sequential [(18)F]FDG PET/CT to predict survival in locally advanced rectal cancer (LARC) patients treated with neoadyuvant chemoradiotherapy.
Method: The study included 78 patients with LARC treated with preoperative chemoradiotherapy. PET/TC was performed before and after chemoradiation, semi quantitative parameters – standardized uptake value (SUV), regression index (RI) and difference in SUV (DSUV) were obtained. Patients were divided into two groups based on their RI and SUV after preoperative treatment and their local recurrence, distant metastasis and overall survival were compared. Disease-free survival (DFS), distant metastasis free survival (DMFS), local recurrence free survival (LRFS) and overall survival (OS) were calculated using the Kaplan-Meier method.
Results: Patients with lower SUV after chemoradiotherapy showed better histopathological response ($P < 0.05$) and correlated with better DMFS, LRFS and DFS although results did not reach statistical significance. There was no difference in overall survival between groups. Higher RI was associated with longer DMFS and DFS (not statistically significant).
Conclusion: Our results show that [(18)F]FDG PET/CT after neoadyuvant chemoradiation may predict better survival in LARC patients. Better response measured by RI may also be associated with less metastasis and superior DFS. Further studies are needed.

P345
The impact of laparoscopic versus open rectal resections on the grade of mesorectal excision, a systematic review and meta-analysis

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P346
Abdominoperineal resection – experience of a referral centre

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Aim: Although sphincter preserving procedures have become the standard treatment for low rectal cancers, APR remains a necessary procedure when the tumour invades the sphincter or when it is of poor quality. This paper evaluates the results of this procedure in a referral centre.
Method: This is an observational and retrospective study of patients undergoing APR for primary rectal cancer between January 2007 and December 2015. Clinical-pathological data, procedure related data, complications and global and disease-free survival were analyzed.
Results: 114 APR were performed, 68% in men. The median age was 67 years (P25 55, P75 75). The tumour was in the low rectum in 89.7% of cases, with 95.6% being adenocarcinoma. Classic APR was performed in 29% of cases and extralevator in 71%, achieving a R0 ressection in 83% of all patients. Perineal closure was primary in 88%, with an infection rate of 23.7%. Median follow-up time was 43 months (P25 23, P75 73). Five years survival rate was 62%, and disease free survival was 63%. Recurrence ocurred in 34%.
Conclusion: In a referral centre with a high volume of low rectum tumors, APR has acceptable complication, morbidity and mortality rates.

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P347
Downstaging effects of neoadjuvant chemotherapy in locally advanced colon cancer

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Aim: Neoadjuvant chemotherapy is established as treatment for several types of GI cancer. For locally advanced colon cancer, however, it is uncommon, but could potentially lead to down staging and improved survival. This retrospective cohort study aims to assess the surgical and oncological outcomes of preoperative chemotherapy for LACC compared to surgery with adjuvant chemotherapy.
Method: Using the Netherlands Cancer Registry, data of patients with stage II or III colon cancer, diagnosed between 2008 and 2014 were collected. Patients treated with neoadjuvant chemotherapy were compared with patients with locally advanced tumors (pT4 or pT3/cT4) treated with adjuvant chemotherapy.
Results: 167 patients received neoadjuvant chemotherapy and were compared to 3239 patients who received adjuvant chemotherapy. A complete response was observed in 8 patients (4.8%). Tumour downstaging was suggested in 42% and nodal downstaging in 48%. Complete resections were achieved in 87.5% in the neoadjuvant group versus 92% in the adjuvant treated group ($P = 0.058$). Three year overall survival was 73% in both groups ($P = 0.5$)
Conclusion: Treatment with neoadjuvant chemotherapy leads to downstaging in tumor and lymph node status in a selected group of patients with locally advanced colon cancer. This treatment seems safe with similar survival compared to the control group.

P348
Adenocarcinoma of the ileoanal pouch

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Aim: Familial adenomatous polyposis and medically refractory ulcerative colitis have been treated with ileoanal pouch. A common complication of this procedure is recurrent pouchitis which occurs in about 14–59% of patients, almost exclusively in ulcerative colitis. A rare complication is adenocarcinoma of the ileoanal pouch, which usually occurs at the anastomosis.
Method: This a case report of adenocarcinoma in an ileoanal pouch.
Results: A 53-year-old woman developed an adenocarcinoma 14 years after a double-stapled ileorectal J-pouch for ulcerative colitis (UC) which progressed to malignant ileal disease in the anastomosic area. She had a resection of the ileoanal pouch with a terminal ileostomy.
Conclusion: Total colectomy with ileoanal pouch reconstruction has been a good choice for FAP and medically refractory UC, even though it is not free of complications. The most common complication is pouchitis and severe chronic atrophic pouchitis. This may result in an adenocarcinoma.

P349
The predictive role of pelvimetry and restaging magnetic resonance imaging studies in locally advanced rectal cancer: the *EuMaRCS*study group

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Aim: The *EuMaRCS*study group aimed to investigate the role and accuracy of pretreatment (including pelvimetry) and restaging magnetic resonance imaging (MRI) in predicting surgical difficulties and outcomes in locally advanced rectal cancer (LARC) treatment.
Method: We analyzed pretreatment and restaging MRIs of patients with mid or low LARC who were had long-course neoadjuvant chemoradiation therapy (NCRT) and who underwent laparoscopic total mesorectal excision.
Results: The MRIs of 170 patients (median age 61 years) were reanalyzed by the same radiologist. Pelvimetry differed significantly between males and females, but no gender difference was noted in the clinical and tumour characteristics. Tumour volume and tumour height assessed on the restaging MRI were associated, respectively, with operative time and estimated blood loss. Conversion was predicted by tumour volume, inter-ischial distance and pubic tubercle height. The quality of the surgical resection was found to be a predictor of overall and disease-free survival. The sensitivity and specificity of tumour regression grade 1 to identify a pathologic complete response were 76.9% and 89.3%, respectively.
Conclusion: In LARC management, pelvimetry and restaging MRI are useful to predict surgical difficulties and outcomes. However, the main independent predictor of patient survival is the achievement of a successful surgical resection.

P350
Impact of the UK Bowel Cancer Screening Programme (BCS) and the 2 week wait referral pathway (2WW) on 5 year colorectal cancer (CRC) survival

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Aim: To evaluate the impact of the BCS and 2WW on the 5 year CRC survival.
Method: A prospectively maintained archive was interrogated to collect the data on all patients operated on for CRC between 1st January and 31st December 2011. Three cohorts were created according to the type of referral: CRC detected via BCS, 2WW and other. The demography, anatomic location of the tumour and all cause mortality were compared between groups. Survival analysis was done with Kaplan-Meier and Log-Rank test.
Results: 134 adult patients (54 women) were operated during the study period. The three cohorts were 23 in "BCS", 35 patients in "2WW" group and 76 in "Other". The median age at diagnosis for the BCS, 2WW and Other were 67, 69 and 72 years respectively. 73% of the patients in the BCS group were diagnosed with a left sided malignancy compared with 71% of 2WW and 48% for Other. The 5 year survivals were 74% for BCS, 49% for 2WW and 47% for Other.
Conclusion: BCS was associated with younger age at diagnosis and better 5 year survival. In contrast, there was no survival benefit attributable to the 2WW referral pathway.

P351
Postoperative outcomes in cT4 rectal cancer patients undergoing standard or multivisceral resection

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Aim: The aim of this study is to compare the postoperative outcomes in patients with cT4 rectal cancer undergoing standard resection (SR) or multivisceral resection (MVR) on a nationwide level.
Method: Data of patients with cT4 rectal cancer undergoing surgical resection, diagnosed from 2009 until 2017, were obtained from the Dutch Surgical Colorectal Audit. Clinicopathologic characteristics and perioperative outcomes were analysed.
Results: 2245 patients were included with cT4 disease of which 41.8% were treated with MVR and 58.2% with SR. Almost all patients (99.1%) received some form of neoadjuvant (chemo)radiation therapy. More pT4 tumours were resected in the MVR group (43.7% *vs* 11.9%, $P < 0.001$) with fewer negative resection margins (82.9% *vs* 90.7%, $P < 0.001$). MVR was associated with more postoperative complications compared with SR (45.5% vs 33.6%, $P < 0.001$). The most common surgical complication which had a re-intervention were anastomotic leakage (5.3%), abscess (3.3%), ileus (0.9%) and fascia dehiscence (0.9%). Postoperative mortality was not significantly different between both groups (2.2% MVR *vs* 1.5% SR, $P = 0.196$).
Conclusion: Patients undergoing MVR for cT4 rectal cancer have higher complication rates and similar postoperative mortality rates compared to SR. Despite a more extensive surgical dissection, incomplete resection margins are more common in MVR.

P352
The Faecal Immunochemical Test – FIT – to rule out Bowel cancer in symptomatic patients

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Aim: The aim of this pilot study was to determine whether the faecal immunochemical test (FIT) could be used to rule out colorectal cancer in the diverse population of London.
Method: A prospective, diagnostic, 'test of accuracy' study of FIT was conducted between November 2016 and October 2017 at a district general hospital in an ethnically diverse area of London in patients undergoing colonoscopy.
Results: 384 patients returned FIT samples. There was no significant variation in FHb levels by age, sex, ethnicity or deprivation. Colorectal cancer was diagnosed in 13 patients. If patients had undergone colonoscopy only if their FHb level was greater than 2, 7 or 10 μg Hb/g, the number of colonoscopies would have been reduced by 67%, 80%, and 82% respectively, but with 0, 2 and 3 cancers missed.

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Conclusion: This pilot study shows that FIT may be used as a triage test to rule out colorectal cancer in patients. However, limitations to the test have been discovered that may result in missed cancers.

P354

Late anastomotic leak after rectal resection in cancer patients

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Aim: The incidence rates of colorectal anastomotic leakage vary between 2 and 20%. There is little information on late anastomotic leakage. The aim of this study was to determine the incidence, symptoms and time of presentation of late leakage after rectal resection.
Method: All patients undergoing rectal resection with primary anastomosis between October 2012 and December 2016 at Hospital Clínico San Carlos were included. Late anastomotic leak was defined as anastomotic leakage diagnosed more than 30 days after surgery.
Results: One hundred and sixty-five patients were retrospectively analyzed. The incidence of early anastomotic leakage within 30 days after surgery was 8.48%. The late leak rate was 6.25%. The most common symptom of presentation was pelvic pain. The mean time of presentation was 459 (31–1498) days after surgery. Late leakage was more frequent in patients treated with radiotherapy ($P = 0.0357$), ultra-low anterior rectal resection ($P = 0.0054$) and temporary ileostomy ($P = 0.0179$). More than half of leaks were managed by end colostomy.
Conclusion: Late anastomotic leak is not an uncommon problem after colorectal surgery and is associated with radiotherapy and ultra-low anterior resection. A diverting stoma protects from septic complications of early leakage, but does not prevent late anastomotic leak.

P355

Feasibility of natural orifice specimen extraction (NOSE) surgery for colorectal cancer treatment: case-matched study

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Aim: To compare the short-term results of NOSE technique with laparoscopic procedures for colorectal cancer.
Method: Data of 33 pairs of colorectal cancer patients was analyzed retrospectively. Similar cases of colorectal cancer stages I-III were selected (every pair being identical by sex, age, stage, BMI and ASA) for laparoscopic (with minilaparotomy) and NOSE operations.
Results: The intraoperative outcomes did not differ in both groups: for NOSE and laparoscopic procedures the mean operative time was 293.2 ± 17.9 and 275.5 ± 12.7 min, $P = 0.60$, and the blood loss was 152.7 ± 27.3 and 207.1 ± 66.3 ml, $P = 0.79$ respectively. Mean average time till first flatus was 1.4 ± 0.78 and 1.3 ± 0.6 days, $P = 0.76$ and the mean time to first defaecation 2.8 ± 0.98 and 2.7 ± 1.1 days, $P = 0.55$. The duration of hospital stay was 13.5 ± 1.0 and 15.6 ± 0.8 days, $P = 0.06$. No specimen was damaged during extraction. The number of harvested lymph nodes was 20.9 ± 2.3 and 20.4 ± 2.3, $P = 0.89$, the average number of lymph nodes with metastasis was 3.4 ± 1.4 and 1.39 ± 0.57, $P = 0.68$.There was no postoperative mortality.
Conclusion: The NOSE technique is safe and feasible, and demonstrates similar short-term surgical outcomes compared with laparoscopic operations.

P356

Short-term results of right hemicolectomy with D3-lymph node dissection for right colon cancer

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Aim: To evaluate the short-term results of open (OH) and laparoscopic (LH) right hemicolectomy with D3-lymph node dissection (RHCE with D3-LND).
Method: Patients operated for right colon cancer were enrolled in a study to analyze the results of the treatment between 2013 and 2017. They underwent either a laparoscopic ($n = 39$) or an open ($n = 81$) RHCE with D3-LD.
Results: Patients in LH group were younger than in the OH group; 61.56 ± 2.4 *vs* 68.43 ± 1.4, $P = 0.008$, and had lower BMI; 25.72 ± 0.5 vs 27.65 ± 0.5, $P = 0.02$. The mean blood loss was 140.26 ± 17.76 ml and 142.7 ± 10.98 ml ($P = 0.9$) in the LH and OH groups respectively. The operation time was higher in the LH group; 231.32 ± 8.32 and 217.26 ± 7.9 min, $P = 0.2$. The approach did not affect the rate of postoperative complications ($P = 0.5$), as well as the number of harvested lymph nodes; 39.34 ± 4.1 in LH group and 39.03 ± 3.9 in OH group, $P = 0.96$. There was no mortality in the early post operative period.
Conclusion: Both open and laparoscopic RHCE with D3-LD are feasible and safe surgical operations.

P357

Are colorectal malignant polyp cancer guidelines followed and predict which patients benefit from a colorectal resection? A retrospective audit

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Aim: To assess adherence to, and effectiveness of the current Association of Coloproctology of Great Britain and Ireland (ACPBGI) guidelines on the management of the Malignant Colorectal Polyp.
Method: A single centre retrospective audit of patients diagnosed with a polyp cancer between 2009 and 2014 was performed. Where available the risk status of the polyp was evaluated as per the ACPGBI guidelines. Patient notes were assessed to determine if the management offered followed guidance. Patient outcomes – disease recurrence and mortality – were assessed from hospital records.
Results: 136 patients were identified with a malignant polyp between 2009 and 2014. All patients were offered management / had management discussed as per the ACPGBI guidelines. Approximately one fifth of patients fell into the high/ very high risk group. Of those assessed as high/ very high risk 85% of patients proceeded to a surgical resection. The reasons for non-resection were patient fitness or patient choice. Of those patients assessed as very low/ low risk no disease recurrence was noted over their 1 year follow up period.
Conclusion: The ACPGBI malignant polyp guidance is well observed and accepted by the majority of patients and appear to predict which patients in the short term may avoid resection.

P358

Splenic flexure cancer resections, stuck between left & right

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Aim: Studies have found that splenic flexure cancers (SFC) are associated with poor outcomes. Furthermore the variable blood supply of the splenic flexure makes the choice of surgical resection controversial. Based at a University hospital in the UK, we aimed to compare the survival and pathological outcomes of patients with SFC undergoing an extended Right hemicolectomy (ERHC) or Left hemicolectomy (LHC)
Method: All patients with SFC undergoing an (ERHC) or (LHC) were included (January 2014- August 2017). The survival and pathological outcomes were reviewed and analysed
Results: 14 patients in each group of surgical resection were idetified (64% female, mean age 72.6). There was no 90 day mortality in either group. There were 2 anastomotic leaks in the ERHC group and none in the LHC group [$P < 0.25$]. The average number of lymph nodes collected was 28.1 in the ERHC group compared with 16.93 in LHC group [$P < 0.25$]. The average number of positive lymph nodes was 8 in ERHC compared to 4 in LHC [$P < 0.25$].The median length of stay was 12.5 days in ERHC compared with 6.5 days in LHC [$P < 0.01$]
Conclusion: Our study showed both groups had comparable survival and pathological outcomes. The ERHC group had a significantly longer length of stay.

P359

Risk factors of anastomotic leakage after colorectal surgery: our institutional experience

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Aim: To assess the underlying risk factors for anastomotic leakage after colorectal surgery: Method: The study included 698 cases having colorectal operations. Preoperative evaluation of patients including the history, clinical examination, chemical and haematological studies, CT, contrast enema and abdominal ultrasound were used in the evaluation in addition to colonoscopy and biopsy. In the postoperative period, close monitoring of all clinical and laboratory parameters was performed. Preoperative, operative and postoperative variables were studied in addition to surgeon experience, covering stoma, duration of operation, emergency surgery and mass size.
Results: Anastomotic leakage was detected in 43 patients (6.2%) diagnosed by faecal discharge or peritonitis. Ultrasonography revealed free fluid or a collection in 21 cases (3%). Rectal contrast enema was done in two suspected cases (0.3%) both showing a leak, one of which was confirmed by CT. The mortality after colorectal surgery in this study was three cases (0.4%), one of which was due to an anastomotic

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leak. Two significant risk factors for anastomotic leakage were identified: covering ileostomy ($P = 0.003$) and emergency surgery ($P = 0.045$). These factors were found to be significant in univariate analysis but not in multivariate analysis.
Conclusion: A covering stoma should be performed for emergency operations such as perforation or obstruction or sicker patients with multiple comorbidities.

P360
Predictors for local recurrence and distant metastases of mucinous colorectal adenocarcinoma

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P361
Mapping oncological colorectal surgery complications: major role for functional performance over patient age range

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Aim: To assess the impact of age, particularly the older age group, on colorectal surgery outcomes.
Method: There was identification of patients undergoing oncological colorectal surgery (2014-2016). The demographics and clinical characterisation [ECOG performance status (PS), neoplasm staging by AJCC, ASA score, surgical approach, post-surgical complications by Clavien-Dindo] were collected. Statistical analysis used chi-square, binary logistic regression and rho-test
Results: 162 patients (58% male; mean age 69.1 ± 10.9) had oncological colorectal surgery (84% electively). 82 patients were over the age of seventy. Older age (>70 years) showed no significant association with surgical complications ($P = 0.07$), whereas PS had a strong association ($P = 0.00$). Logistic regression assessing all demographic and clinical variables demonstrated that PS was the best parameter associated with post-surgical complications ($P = 0.00$) with a protective effect for a status between 0–2 [(OR 0.013 (95% CI: 0.003–0.057)]. In addition, PS strongly correlated with major post-surgical complications (OR = 0.719; $P < 0.05$)
Conclusion: An older age alone was not associated with surgical complications and should not limit surgical options. PS, however, was a valid and reliable predictor of surgical outcomes. Patients suitability for colorectal surgery should rely on functional performance rather than age.

P362
Long-term ano-rectal function in rectal cancer patients treated with radiotherapy and endorectal brachytherapy (watchful waiting cohort)

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Aim: To assess anorectal function in long-term survivors after 60 Gy radiotherapy combined with 5 Gy endorectal brachytherapy for low rectum cancer compared to healthy volunteers (HV).
Method: Anal manometry and rectal bag distension were performed in 13 former rectal cancer patients (RCP) (12 men, age 68.5 ± 2.9 years) (time since diagnosis 3.1 ± 0.8 years) and 13 HV (12 men, age 63 ± 2.4 years). LARS and Wexner faecal incontinence scores assessed functional outcome.
Results: RCP had significantly lower anal resting pressures (mean 55.4 ± 6.8 vs 82.6 ± 6.9 cmH_2O, $P = 0.01$) and squeeze pressures (161.8 ± 20.3 vs 238 ± 18.9 cmH_2O, $P = 0.01$) compared with HV. No difference in rectal volume at first sensation (median 71.5 (range 22–158) vs 79 (36–190)ml, $P = 0.51$) nor at urgency for daefecation (107 (42–227) vs 132 (68–334)ml, $P = 0.12$) was seen. Maximum tolerable rectal volume was significantly lower in RCP than in HV (145 (58–519) vs 202 (106–447)ml, $P = 0.02$). LARS score was 28 ± 1.6 in RCP vs 6.5 ± 2 in HV ($P < 0.001$); median Wexner score was 0 (0–5) vs 0 (0–4)($P = 0.58$).
Conclusion: Radiotherapy combined with endorectal brachytherapy for rectal cancer causes long-term anorectal symptoms, rectal hypersensitivity and reduced anal sphincter pressures.

P363
Accuracy of endoanal ultrasound for local staging of rectal cancer in comparison with final pathologic findings

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Aim: The aim of this study was to evaluate the accuracy of endoanal ultrasound (EUS) for local staging of rectal cancers based on the pathologic findings of the local tumour after resection of the tumor.
Method: A total of 75 patients (36 male, 39 female) were included. All patients had a confirmed colonoscopic and pathologic diagnosis of rectal cancer. Depth of tumor invasion (T) and nodal involvement (N) were evaluated using EUS before having a low rectal resection. Pathologic findings of the tumor including T and N were compared with the EUS findings.
Results: The mean age was 54.8 ± 20.1 years. The mean distance of tumours from the anal verge was 6.3 ± 2.1 cm. Accuracy of EUS for T and N staging was 81% and 40%, respectively. EUS over-staging was more common than under-staging for both T (16%) and N (53%). EUS had the highest accuracy for T staging in patients younger than 30 years (100%) and N staging in patients older than 70 years (30%).
Conclusion: EUS is an accurate non-invasive preoperative staging modality for evaluating the depth of tumor (T staging) particularly in young patients.

P364
Our experience of laparoscopic surgical treatment of colorectal cancer in elderly patients

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Aim: To analyse the laparoscopic treatment of colorectal cancer in elderly patients.
Method: We studied 750 patients who had laparoscopic treatment between 2010 and 2017.
Results: 184 patients (24.5%) were older than 70 years (main group). 566 patients were younger than 70 years (control group). The mean age of the main group was 76 years. The mean BMI was 23 in the main group and 26 in the control group. The mean operating time was 210.7 min vs 200.4 min. Mean blood loss was 106.5 ml vs 81 ml. The mean hospital stay was 11.15 days versus 10.3 days. In the main group there were 8 stage I (4%), 120 stage II (65%) and 56 stage III & IV (31%). In the control group there were 28 stage I (5%), 408 stage II (72%) and 130 stage III & IV (23%). Surgical treatment of the main group showed that a laparoscopic approach is possible in elderly patients. Anterior resection of the rectum was performed in 64 patients (35%), abdominoperineal resection 26 (14%), left hemicolectomy 18 (10%), right hemicolectomy 41 (22%), sigmoid resection 27 (15%) and Hartman's procedure 8 (4%). There was no mortality in either group and postoperative complications did not exceed 4%.
Conclusion: A laparoscopic approach in elderly colorectal cancer patients is possible for elective procedures with good results.

P365
A core outcome set for trials of chemoradiotherapy interventions for anal cancer (The CORMAC project): Systematic review, qualitative interviews and Delphi survey

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Aim: Six randomised trials established the effectiveness of chemo-radiotherapy as primary treatment in patients with squamous cell carcinoma of the anus (SCCA), but the outcomes reported varied widely and no trial comprehensively assessed late effects or quality of life (QoL). In response to these issues, we developed a core set of outcomes (COS) for use in future SCCA trials, using the COMET methodological framework.
Method: We conducted a systematic review, and interviews with patients, to derive a comprehensive outcome list, followed by a two-round international Delphi survey involving key stakeholders (healthcare professionals (HCPs) and patients). The

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Delphi results were discussed at a combined HCP-patient consensus meeting, concluding with anonymous voting.
Results: The systematic review identified 1243 outcomes from 101 studies, consolidated into 92 standardised outcome terms. Interviews with 19 patients identified 61 outcomes, including 8 not identified from the literature. 149 participants from 11 countries (patients 55; HCPs 94) completed the Delphi survey. At the consensus meeting, 24 HCPs and 12 patients ratified the final COS list of 19 outcomes from 4 domains (tumour activity; survival, toxicity; life impact).
Conclusion: Utilisation of this COS will reduce outcome heterogeneity and increase the relevance of research findings to HCPs, trialists and patients.

P366
Does the learning curve of robotic rectal cancer surgery affect circumferential resection margin? A meta-analysis and a risk-adjusted cumulative sum analysis

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Aim: To evaluate whether the learning curve of robotic surgery for rectal cancer has any impact on pathologic outcomes.
Method: This was a meta-analysis of previously published data on the learning curve of robotic rectal cancer surgery. Quality assessment was performed according to Cochrane Handbook for Systematic Reviews of Interventions. Statistical heterogeneity among effect estimates was assessed using Cochran $Chi^2$and I^2 and between-study variance was assessed using Tau^2statistic when the $I^2$was 50% or greater. Meta-regression technique with circumferential resection margin (CRM) was utilized for risk-adjusted cumulative sum (CUSUM) analysis.
Results: A literature search found four previously published studies with a total of 212 patients (143 males and 69 females). Low anterior resection was performed in 124 patients (58.5%), followed by intersphincteric resection in 68 patients (32.1%). High anterior resection or abdomino-perineal resection was performed in the remaining patients. Among-study heterogeneity was moderate (I2=50%). CRM involvement rate was not affected by the learning curve [OR (95%CI) = 0.029 (−0.003, 0.062); $P = 0.115$]. Risk-adjusted CUSUM analysis showed reduction in CRM involvement rate over time within the learning curve.
Conclusion: Even though the learning curve of robotic surgery for rectal cancer did not affect CRM involvement rate, improvement was observed over time.

P367
Long-term oncological outcomes of robotic total mesorectal excision

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Aim: Two recent randomized controlled clinical trials questioned the oncological safety of laparoscopic treatment for rectal cancer. Robotic surgery may overcome some technical limitations of conventional laparoscopy.
Method: From July 2009 to December 2016, 156 patients had robotic rectal resection for rectal cancer. 118 patients had robotic TME (84 Low Anterior Resection and 34 Abdomino-perineal resection). The mean distance of the tumour from the anal verge was 6.8 cm. All patients were assessed at a median follow-up of 54 months.
Results: The mean operative time was 265 min and the conversion rate was 2.5%. According to Clavien-Dindo classification, 30-days minor (grade I and II) and major (grade III and IV) postoperative complications were 16.1% and 8.4% respectively. The anastomotic leakage rate was 5.9%. The mean number of nodes retrieved was 20, the mean distal resection margin was 2.8 cm and 2.5% of patients had involvement of their circumferential resection margin. 5-year disease-free survival and overall survival were 75.3% and 85.6%, respectively. Local recurrence rate was 1.7%.
Conclusion: Robotic-assisted TME provided high-quality surgery with favourable long-term oncological results and low local recurrence rates.

P368
Pattern of referral for contact X-ray brachytherapy (Papillon) in patients not suitable for surgery or stoma phobic and refusing surgery

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Aim: Surgery remains the standard of care for rectal cancer. However, in patients not suitable for surgery or refusing surgery, a non-surgical approach using radiotherapy could be offered. We analysed the pattern of patients referred to our centre for consideration of contact X-ray brachytherapy (CXB) alone or following external beam radiotherapy.
Method: We select patients referred from November 2016 to 2017. Retrospective data on 81 patients (M: F 61:20) with a median age of 72 years (range 44–93) were reviewed. Patients were discussed at their local colorectal MDT and those not fit or refusing surgery with suspected residual disease following EBRT or high risk after local excision were referred to our sMDT for consideration of CXB.
Results: We identified 4 groups:
1. Possible residual cancer following EBRT /EBCRT ($n = 38$) [stoma averse $n = 30$; unfit $n = 8$]
2. High risk residual cancer following local excision ($n = 17$) [Rx $n = 2$; pT1 (R1) $n = 10$; T2 (R0) $n = 2$]
3. Initial Papillon in patients with tumour<3 cm ($n = 15$) [stoma averse $n = 10$; unfit $n = 5$]
4. Palliative for recurrences ($n = 11$)

Conclusion: Patients with high risk or suspected residual cancer can be referred for consideration of CXB boost to improve local control if they are not suitable or stoma phobic and refusing completion surgery.

P369
Is follow-up still mandatory more than 5 years after surgery for colorectal cancer?

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Aim: Our policy is to prolong follow-up (FU) for at least 10 years after surgery for colorectal cancer (CRC). The aim of this study was to assess if this policy is justified.
Method: Consecutive patients who had surgery for a CRC before 2013 in our department and without synchronous metastases or tumour recurrence during the first 5 years of FU were included.
Results: 121 patients with rectal cancer (RC) (median FU 87 months, range 60–211) and 97 with colonic cancer (CC) (median FU 82 months, range 60–139) were included: 12/121 RC (9.9%) versus 2/97 CC (2.1%) presented a late tumour recurrence ($P = 0.024$). Among the 12 RC recurrences, 7/12 (58%) were after neoadjuvant radiochemotherapy, and 8/12 (67%) had a pN0 tumour. The 2 CC recurrences had pT3N0 tumours; 0/29 (0%) recurrence was noted in pT1-T2 CC tumours (pT1 or pT2) versus 2/68 (2.9%) in pT3-T4 tumours (NS).
Conclusion: FU after 5 years must be continued in RC patients because of a late recurrence rate of 10%. Because only a 2% late recurrence rate was noted in CC patients, only those with pT3-T4 tumours could be followed for more than 5 years after surgery.

P370
The incidence of colorectal cancer in young patients – is it increasing? A population based study in Denmark

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Aim: Studies report that the incidence of colorectal cancer in young patients is increasing. The aim was to investigate incidence rates of colon and rectal cancer in the young Danish population.
Method: Patients aged 18–40 years diagnosed with histologically verified colorectal cancer were identified in national registers from 2001 to 2013. Crude incidence rates and average annual percentage changes (AAPC) were calculated.
Results: The overall incidence rate for colorectal cancer was 2.45 per 100 000 young persons in 2001–2013. Subdivided by cancer site, the incidence was 1.59 per 100 000 for colon cancer (men: 1.63 per 100 000; women: 1.56 per 100 000) and 0.86 per 100 000 for rectal cancer (men: 0.87 per 100 000; women: 0.86 per 100 000). The AAPCs in the period 2001–2013 were 2.50 ($P = 0.05$) for all cancers (men:0.97; women: 3.84), 1.67 for colon cancer (men: 0.27; women: 2.17) and 3.88 for rectal cancer. AAPC for men with rectal cancer was 2.3; however in young women, a significant rise was seen in the period 2001–2006 with a non-significant decrease in 2006–2013 (AAPC: 8.38, $P = 0.05$).
Conclusion: Positive trends in colorectal cancer crude incidence rates were seen especially in young women with rectal cancer in the period 2001 to 2013.

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P371

Artificial intelligence in local advanced rectal cancer staging: utility of a mathematical 3D-method applied to magnetic resonance for R0 resection

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Aim: To use a mathematical model-3D reconstruction (MM-3D) to assess the infiltration of pelvic structures in locally advanced rectal cancer (RC) and pelvic recurrence (PR).
Method: Three cases of RC and PR were studied. The pelvic magnetic resonance (MR) report was contrasted with the 3D-MM. Anatomic-pathological report (AP) assessed the result of both techniques.
Results: Case 1: RC. MR showed levator ani muscle and prostatic and urethra infiltration. MM-3D: showed infiltration of levator ani and prostatic capsule but not the urethra. At surgery after QRT the APR was extended to prostate "patch". AP showed prostate infiltration with free surgical margins (R0).

Case 2: RC. MR showed internal sphincter infiltration. MM-3D showed infiltration of the posterior aspect of the vagina. At surgery after QRT the anterior resection was extended to the posterior wall of the vagina and manual coloanal anastomosis was performed. AP showed no infiltration of the posterior aspect of the vagina. There wre free margins (R0).

Case 3: PR. MR showed levator muscle and obdurator muscle infiltration without bone infiltration. MM-3D showed, in addition, bone infiltration. At surgery without QRT the APR was extended to the pelvic side wall including the periosteal lamina. AP showed bone infiltration of the surgical margin. It was an R1 resection.
Conclusion: This mathematical model could show the pelvic structures infiltrated by locally advanced RC and PR and help decide the best therapeutic strategy.

P372

Robotic complete mesocolic excision with central vascular ligation and intracorporeal anastomosis versus laparoscopic conventional approach in right sided colon cancer. Is there any difference? Results of a matched pilot study

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Aim: Compare robotic complete mesocolic excision (CME), central vascular ligation (CVL) and intracorporeal anastomosis (ICA) with a laparoscopic conventional approach in right colon cancer.
Method: This is a prospective matched case-control study. Controls were matched to cases for age, gender, BMI, disease stage and ASA. Pathologists were blinded to the technique. We analysed pathological and perioperative results.
Results: 40 patients who had curative resections from January 2014 to September 2016 were included. The mean age was 67.2 years in the robotic group and 67.1 years in the laparoscopic group. Gender distribution was 15 males/5 females in both groups. The median BMI was 28.2 ± 3.6 in the robotic group and 27.7 ± 4.7 in the laparoscopic group. Four T4, 24 T3, 4 T2, 8 T1, 6 N1 and 34 N0 patients were included. The median number of lymph nodes harvested was 21.1 in the robotic group and 15.0 in the laparoscopic group (P 0.0008). Two patients had severe complications (IIIb-IV) in the laparoscopic group (10%) and none in the robotic group (P 0.49).
Conclusion: Robotic right colectomy with CME, CVL and ICA is a safe technique that provides optimal specimen quality and comparable postoperative outcomes to laparosocpic surgery. Shorter postoperative stay and less severe complications were observed with the robotic technique.

P373

Acid ceramidase and radioresistance in rectal cancer – is apoptosis the key to a novel mechanism?

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Aim: We previously described that acid ceramidase (AC) expression correlates with radioresistance in rectal cancer through unknown mechanisms. AC can affect apoptosis and cleaved fragments of the DNA repair enzyme (PARP-1) are specific detectable markers of apoptosis. Our aim was to elucidate a potential mechanism linking AC expression with radioresistance in rectal cancer.
Method: The radiosensitivity of various colorectal cancer cell lines with variable AC expression were examined using standard clonogenic assays, with subsequent siRNA AC knockdown to assess any effect on radiosensitivity. Cleaved PARP-1 apoptotic fragments were detected using Western blotting on siRNA AC treated cell extracts.
Results: Clonogenic assays confirmed that higher AC expressers demonstrated higher survival than lower expressers post-irradiation. siRNA AC knockdown reduced colony survival, improved radiosensitivity across all cell lines (P = <0.05 siAC *vs* control) and selectively increased apoptosis post-irradiation compared to controls (4.8 – 8.2-fold increase P = <0.05 siAC *vs* control).
Conclusion: Higher AC expression correlates with radioresistance in these colorectal cancer cell lines and through its inhibition we have conferred improved radiosensitivity. These results suggest AC expression as a novel potential mechanism of radioresistance through diminished apoptosis. AC inhibition could therefore serve as a potential radiosensitizer and a predictive biomarker of neoadjuvant response.

P374

Surgical anatomy of Denonvilliers fascia – technical implications in total mesorectal excision

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Aim: To define the optimal plane for low anterior dissection in rectal cancer surgery in order to maximize the functional and oncological results.
Method: A thorough literature review on the anatomy and surgical considerations of Denonvilliers fascia (DF) was undertaken, from the first mention until now. The videos of 35 cases of laparoscopic total mesorectal excision performed in our department between 2013–2018, were reviewed.
Results: We identified and depicted the anatomical and surgical landmarks of DF to find the optimal anterior dissection plane. We also took into consideration the anterior and lateral relationship of the fascia to the autonomic pelvic nerves. This fascia is a tension induced fascia and it is somewhat adherent to nearby structures. Histologically it has a multi-layered structure.
Conclusion: The anterior layer of DF covers the prostate-seminal complex, whereas its posterior layer is adjacent to the fascia propria of the rectum, the optimal dissection plane being between the two layers. In some cases, the two DF layers fuse after radiotherapy; the optimal plane is then in front of the anterior layer of the DF.

P375

Correlation between imaging patterns of response and long-term functional outcome in complete responders in rectal cancer patients assessed with MRI as part of a watch-and-wait programme

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Aim: Rectal cancer patients undergoing watch-and-wait are monitored every 3–6 months. On the MRI scan patterns of response can vary from a normalised rectal wall to various degrees of fibrosis. The aim was to study whether these morphologic patterns relate to long-term functional outcome.
Method: We analysed 68 watch-and-wait patients with a sustained complete response (median FU 34; range 16–62 months). Rectal wall morphology was assessed by two radiologists and classified as: [1] normalised wall, [2] minimal –, [3] thick – or [4] irregular fibrosis. Long-term functional outcome was assessed with the Vaizey-score (0–24 point score on bowel function/incontinence).
Results: 5 patients showed no fibrosis, 45 minimal, 15 thick and 3 irregular fibrosis. Mean Vaizey-score was 1.6 for the patients without fibrosis versus 4.5/3.9/4.0 for minimal/thick/irregular fibrosis (P = 0.24). No significant differences in Vaizey scores were observed amongst the different fibrosis patterns; there was a slight trend towards lower scores for patients with only minimal fibrosis where mean Vaizey-score was 4.7 versus 6.5 for the other fibrosis patterns (P = 0.198).
Conclusion: Patients with a clinical complete response who show a normalised rectal wall without any fibrosis on rectal MRI appear to have a better functional outcome compared to patients with visible fibrosis.

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P376

Sacral bone marrow changes and insufficiency fractures on MRI during long-term follow-up after chemoradiotherapy for rectal cancer

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Aim: To determine the incidence and evolution of sacral bone marrow changes and insufficiency fractures after chemoradiotherapy for rectal cancer.
Method: We included 112 rectal cancer patients with a complete response undergoing watch-and-wait after chemoradiotherapy. Patients underwent sequential follow-up MRIs, creating a unique opportunity to longitudinally study radiation-induced sacral bone marrow changes. MRIs were performed at baseline (±8 weeks post-CRT) and every 3–6 months. An experienced radiologist scored the presence and severity of bone marrow changes on 1 mm^3 MRI-sequences as none, minor or major. Concomitant insufficiency fractures were documented.
Results: Median follow-up post-CRT MRI was 33 months (range 12–80); patients underwent a median of 7 FU-MRI's. In 61% no bone marrow signal changes were observed over time. In 10% only minor and in 30% major changes occurred, after a median follow-up of 12 months (range 0–55). Concomitant insufficiency fractures occurred in 36% of patients with minor signal changes and in 97% of patients with major changes (33% in total); 81% of fractures occurred bilateral. Median time to fracture was 12 months (range 2–55).
Conclusion: Sacral bone marrow signal changes and insufficiency fractures occurred in ±1/3 of patients after a median follow-up of ±1 year following CRT.

P377

OX40+ and CD16+ predict improved overall survival in colorectal cancer patients

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Aim: Does OX40 (member of the TNF-receptor superfamily involved in T-cell response and suppressing apoptosis) and CD16 (receptor for the Fc portion of immunoglobulin G involved in the removal of antigen-antibody complexes) expression have synergistic effect on prognosis in colorectal cancer?
Method: CD16 and OX40 specific antibodies were used for immunohistochemistry analysis. Survival analysis was performed by Kaplan-Meier and log-rank tests. Multivariate Cox regression analysis was used to investigate association with overall survival.
Results: OX40 and CD16 expression were investigated in 441 primary CRCs. High levels of both OX40 and CD16 were associated with lower pT stage ($P = 0.003$), absence of peritumoral lymphocytic (PTL) inflammation ($P = 0.015$) and a positive prognostic impact on survival of CRC patients (HR = 0.58; 95% CI = 0.39–0.87; $P = 0.01$). High CD16+OX40+ CRC patients show a better overall survival than CD16-OX40- patients (test group $P = 0.030$; validation group $P = 0.002$). In the test group median overall survival was 36 (2–149) months for CD16-OX40- and 91 (0–150) months for CD16+OX40+.
Conclusion: The prognostic value of CD16+ is enhanced by OX40+ and the combination of both markers is an independent positive prognostic marker for improved overall survival in CRC patients.

P378

Retrospective review of outcomes of endoscopic submucosal dissection (ESD) versus laparoscopic surgery (LS) in the management of colonic lateral spreading tumors (LST)

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Aim: The aim of this study was to compare the clinical outcomes of ESD versus laparoscopic surgery in the management of colonic LST
Method: Patients diagnosed with colonic LST which were unable to be removed by standard endoscopic methods were recruited. They either underwent ESD or laparoscopic surgery including colectomy or colotomy and polypectomy. Patient's demographics, perioperative data were retrieved from a database for comparison. Patients with other concomitant procedures were excluded.
Results: From 2008 to 2018, 42 patients underwent ESD and 41 patients underwent laparoscopic surgeries. The two groups had no significant difference in the demographic data or mean sizes of the LST. ESD had a significantly longer procedure time (141 ± 43 mins *vs* 115 ± 44 mins, $P = 0.008$), but shorter hospital stay (4.7 ± 1.4 days *vs* 8.9 ± 5.4 days, $P < 0.005$) and a trend for a lower complication rate (2/42 vs 7/41, $P = 0.071$) than laparoscopic group. There was one postoperative mortality in the laparoscopic group with no mortality in the ESD group ($P = 0.31$). The local recurrence rates were comparable (1 in ESD vs 2 in laparoscopic, $P = 0.309$).
Conclusion: In the management of colonic LST, ESD was less invasive, had fewer morbidities and a shorter hospital stay when compared with laparoscopic surgery.

P379

Decreasing deep sleeping time may induce neutropenia in patients undergoing chemotherapy with 5-fluorouracil

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Aim: 5-Fluorouracil (5-FU) is a key drug for colorectal cancer, and a major adverse effect is neutropenia. The metabolism of 5-FU is affected by circadian rhythm and skeletal muscles mass. However, it is unclear whether physical exercise and sleeping time affects the incidence of neutropenia. Thus, we prospectively investigated the side effect in patients with colorectal cancer who were receiving chemotherapy.
Method: Patients who were receiving chemotherapy with 5-FU for colorectal cancer were included. The number of steps and sleeping time of patients were measured using a wearable activity meter. We identified risk factors for neutropenia by using machine learning.
Results: Forty-four patients were included. No differences in the average number of daily steps ($P = 0.50$) and total sleeping time ($P = 0.13$) were observed between the patients with and without neutropenia. It was interesting to note that shallow sleeping time was longer and deep sleeping time was shorter in the patients with neutropenia than in those without neutropenia ($P < 0.001$ and $P < 0.006$, respectively). Many factors related with the sleeping time were dominantly detected by machine learning as feature quantities that affect neutropenia.
Conclusion: Decreasing deep sleeping time may induce neutropenia in patients undergoing chemotherapy with 5-FU.

P380

FGF8: a candidate target in radioresistant rectal cancer

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Aim: Neoadjuvant chemoradiation is a well-established treatment modality in Stage II and III rectal cancers with curative intent. However, therapy response varies widely and the mechanisms of resistance are insufficiently understood. Fibroblast growth factor 8, a member of the FGF family, is up-regulated in colorectal cancer and may interfere with therapy response. This study explored its role as a candidate target mediating radio-resistance in colorectal cancer cells.
Method: We investigated the impact of FGF8 and its possible downstream target Surviving on neoadjuvant radiation response by analyzing protein levels in rectal cancer tissue specimens by immunohistochemistry. Irradiated cell lines were used to analyse the mechanistic pathways.
Results: FGF8 and Survivin staining intensity in pre-treatment rectal cancer biopsies of non-responsive patients was significantly higher compared to complete responders to neoadjuvant chemoradiation. A significant correlation was found when FGF8 and Survivin were blotted against each other. Survivin was significantly higher in high-FGF8-expressing tumours when compared with low-FGF8-expressing ones. Immunoreactivity scores for FGF8 and Survivin remained still higher in non-responders than in responders when analyzing surgical specimens.
Conclusion: FGF8 overexpression may predict neoadjuvant radiotherapy response in rectal cancer, serving as a tool to identify patients who will potentially benefit from neoadjuvant radiotherapy.

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P381

A retrospective study comparing the compliance of colorectal cancer follow up, with NICE guidance, in nurse-led versus consultant-led clinics

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Aim: Nurse-led clinics have been shown to provide improved outpatient follow up for many chronic conditions. This study assesses the compliance of specialist nurse-led and consultant-led clinics with NICE guidance, for the follow up of colorectal cancer after surgery.
Method: The study compared a sample of patients receiving colorectal cancer follow up, between March 2013 and 2017. 96 patients were followed up in consultant-led outpatient clinics and 75 were referred to nurse-led follow up. The study recorded the interval between discharge and follow up investigations (surveillance CT scans, CEA blood tests and surveillance colonoscopy).
Results: Patients referred to nurse-led clinics were significantly more likely to have had two CT scans within 3 years of discharge (88% *vs* 68%, $P < 0.01$) and 6 monthly CEA blood tests (61% vs 35%, $P < 0.01$), in accordance with NICE guidance. The proportion of patients undergoing a surveillance colonoscopy, within a year of discharge, was not significantly different in the consultant (25%) and nurse-led (28%) clinics.
Conclusion: Our results show referral to a specialist nurse-led clinic improves compliance with NICE guidance. This suggests routine follow up in a nurse-led clinic may be a more effective pathway, than consultant-only clinics, for the management of colorectal cancer after surgery.

P382

The learning curve in the Netherlands; results of the implementation of transanal total mesorectal excision (TaTME) with the training pathway

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Aim: Transanal Total mesorectal excision (TaTME) offers potential benefits compared to laparoscopic TME (LaTME) for rectal cancer. Safe implementation of this technically demanding new technique is essential. The learning curve of TaTME has shown to be accompanied by increased procedure specific morbidity including pelvic abscess, urethra or pelvic sidewall injuries. An implementation pathway in the Netherlands with education, hands on training followed by on-site proctoring has been developed to shorten the learning curve and prove safe implementation.
Method: Twelve centers which completed the training pathway including on-site proctoring provided data of their first 10 cases. Primary outcome was percentage of intraoperative complications and conversion rate. Secondary outcomes; postoperative morbidity and pathological outcomes. The results were compared with data from the registry and LaTME.
Results: A total of 112 patients were included. Intraoperative complication rate was 5.4%, conversion rate was 3.6%. Clavien-Dindo ≥3 complications occurred in 19.6% of patients. A complete mesorectum was found in 89.3%, negative DRM in 100% and involved CRM in 5.4% of patients.
Conclusion: This study shows that the nationwide TaTME training program provides safe implementation of TaTME in terms of intraoperative and pathology outcomes. The postoperative complication rate is comparable to national audit of laparoscopic TME.

P383

The role of extended D3 mesenterectomy anterior/posterior to the superior mesenteric vessels in patients with small bowel neuroendocrine tumors

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Aim: To investigate impact of D3 extended mesenterectomy on lymph node yield in the D2 and D3 regions of dissection and determine the pattern of disease dissemination.
Method: Patients diagnosed with neuroendocrine tumors (NET) who were subsequently operated on were included in this study. The surgical specimen was divided after removal by the operating surgeon into D2 and D3 volumes of mesenteric fat and sent separately to histopathology.
Results: 20 patients (14 men) mean age 62.2 (SD+11.6) years were operated. Procedures performed were right colectomy (11 patients, operating time 215.4+58.3 min) and small bowel resection (9, 203.2+48.2). T4 tumors were found in 11, T3 in 5, T2 in 2 and T1 in 2 patients. One patient had liver metastasis, 18 (90%) had positive nodes, of these 7 (35%) patients had metastasis to the D3 region, no skip metastases were found. The whole specimen contained 34.3+19.2 (range 11–75) nodes, of these 6.75+9.6 (0–39) with metastasis. D2 and D3 regions contained 20.0+12.6 (2–47) and 14.2+10.0 (3–36) nodes, of these 3.9+4.9 (0–23) and 2.8+8.3 positive, respectively.
Conclusion: Overall lymph nodes metastasis occurred in 90%, and 35% within the D3 region. This indicates a clear role for D3 extended mesenterectomy anterior and posterior to the superior mesenteric vessels in the treatment of small bowel NET.

P384

Personalized oncological resection of colon cancer with the use of Indocyanide green lymph node mapping: feasibility study

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Aim: To review the feasibility of ICG for lymph node mapping as an aid to lymph node dissection in colon cancer resection.
Method: Laparoscopic resection was carried in the standard manner. ICG injection was either done preoperatively via colonoscope just distal to the tumour at the submucosal level OR via a laparoscopic injection needle in the peritumoural subserosal area. The lymphatic drainage channels and sentinel drainage lymph node was visualized by a special laparoscope. This assessment helped determine whether any extra lymphatic dissection was necessary.
Results: Twenty consecutive and eligible patients were identified, including 13 male patients (65%) with a mean age of 71.4 years. Sensitivity of ICG in the detection and identification of lymphatic drainage channels and sentinel drainage lymph node was 90%. A total of four (20%) patients required a more extensive lymph node dissection then usual due to the ICG lymph node mapping results. Two patients had node positive disease. In 2 patients (10%) there was no lymphatic drainage map due to spillage during injection, which masked the field.
Conclusion: Real time ICG lymph node mapping for colon cancer surgery has a high sensitivity for the detection of lymphatic drainage. It possibly allows for better selection of patients for extended lymphatic dissection depending on the lymphatic drainage. The correlation of the drainage lymph nodes and metastatic lymph nodes will need further evaluation.

P385

Anterior resection for rectal cancer: Defunctioning stoma as a risk factor for a permanent stoma and relation to the extent of mesorectal excision

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Aim: To investigate whether defunctioning stomas independently contribute to the high stoma prevalence reported after anterior resection for rectal cancer, and if the above differs between total and partial mesorectal excision (TME/PME).
Method: Patients who underwent anterior resection during 2007–2013 were identified using the Swedish Colorectal Cancer Registry. Stoma outcome 2 years after index surgery was established through data from the National Patient Registry. Extent of mesorectal excision was defined using tumour height as a proxy (≤ 10 cm: TME vs 13–15 cm: PME); tumour heights of 11–12 cm were deemed unreliable for classification. The association between defunctioning stoma and a permanent stoma was evaluated with confounder-adjusted logistic regression, as well as stratified analysis for TME/PME.
Results: Of 4768 patients, 16.7% had a permanent stoma. Defunctioning stoma increased the risk for a permanent stoma with an adjusted odds ratio of 4.46 (95% CI, 2.95–6.75). The corresponding odds ratio for PME was 6.23 (95% CI, 3.48–11.14) and 2.83 (95% CI, 1.60–5.01) for TME.
Conclusion: Anterior resection with a defunctioning stoma independently increases the risk for a permanent stoma, particularly for high rectal cancer. Treatment without a defunctioning stoma should be considered for PME.

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P386

Outcomes after hepatic and pulmonary metastasectomies compared with pulmonary metastasectomy alone in patients with colorectal cancer

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Aim: The indication for surgical resection in patients with both hepatic and pulmonary metastases in not well established. We aimed to assess overall survival of patients with hepatic and pulmonary metastasis from colorectal cancer compared with pulmonary metastasis alone.
Method: Data was retrospectively collected from 287 patients who underwent pulmonary metastasectomy and 117 patients who underwent hepatic and pulmonary metastasectomy after colorectal cancer surgery from January 1991 through December 2016 were analyzed.
Results: There was difference in the 5-year overall survival between patients who underwent pulmonary metastasectomy which was 68.6% versus in patients who underwent both hepatic and pulmonary metastasectomy which was 58.8%($P = 0.03$).In all patients, surgery in the early period, elevated CEA (>5 ng/ml), size of lung metastasis (≧2 cm) and the number of lung metastasis (≧4) were predictors of poor prognosis in multivariate analysis ($P < 0.05$), and the most significant factor was the number of lung metastasis ($P = 0.014$).These factors were not significantly different between the hepatic and pulmonary metastasectomy group and pulmonary metastasectomy alone group. Patients with less than 4 lung metastasis who underwent hepatic and pulmonary metastasectomy had a 5-year overall survival of 62.3%, which is comparable to lung metastasis alone.
Conclusion: In selected patients, hepatic and pulmonary metastasectomy results in an acceptable long term outcome.

P387

Pressurised intraperitoneal aerosol chemotherapy (PIPAC) for colorectal peritoneal carcinomatosis

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Aim: To assess the efficacy of PIPAC in patients with peritoneal carcinomatosis (PC) arising from colorectal cancer (CRC).
Method: A search of PubMed was performed (March 2018) to identify studies investigating the outcome, safety and toxicity of PIPAC in PC secondary to CRC.
Results: 61 papers were identified with 10 included in final analysis. 79 patients with CRC were treated with a median age between 60–66 years old and mean peritoneal carcinomatosis index (PCI) of 12–17. PIPAC appears to confer a good tumour response (71%) and is associated with improved mean survival of 15.7 months compared to 5 months for best supportive care. There was no negative impact on quality of life. Moreover, it might be an alternative for patients not eligible for radical treatment (such as cytoreductive surgery and HIPEC) and in some cases seems to downgrade the tumour burden enough making them candidates for this.
Conclusion: PIPAC appears to be safe and have good initial results. PIPAC should be considered in patients not eligible for cytoreductive surgery (CRS) or to downstage disease burden prior to CRS. Future studies will further inform.

P388

The impact of ligation level on survival and recurrence in rectal cancer surgery

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Aim: The purpose of this study was to determine if high ligation of the inferior mesenteric artery during rectal cancer surgery improves oncological outcomes.
Method: All abdominal rectal cancer operations with curative intention, recorded in the Swedish Colorectal Cancer Registry in 2007–14, were included. Exclusion criteria were stage IV cancer, uncertain radicality or intestinal perforation. Exposure constituted high ligation of the inferior mesenteric artery. Primary outcome was cancer-specific survival, while secondary outcomes were overall and relative survival, as well as locoregional and distant recurrence. Results were adjusted for potential confounders with propensity score matching and Cox regression. Additionally, results were stratified by tumour height and T-stage, and analyzed for interaction with tumour height or T-stage. The Swedish Causes of Death Registry was used to ascertain the primary outcome.
Results: Some 8295 patients remained in the study, with a median follow-up of 1862 days. Cancer-specific 3-year survival was 90.7% (95% CI 90.1%–91.3%) overall. High ligation was not associated with cancer-specific survival in the multivariate analysis (HR 0.96, 95% CI 0.83–1.11), nor to any secondary outcome. Results were not altered in the interaction or stratified analyses.
Conclusion: In Swedish surgical practice, low ligation in rectal cancer resections seems oncologically justifiable.

P389

HPV-related anal precancerous screening in HIV infected MSM: it's possible? Initial results

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Aim: Investigate the feasibility of anal precancerous screening in HIV infected MSM patients.
Method: We performed a retrospective analysis on HIV data, proctological examinations and microbiological results of a cohort of 121 HIV-infected MSM patients who performed anal pap test between December 2015 and January 2018
Results: Of 121 swabs, 50 (41.3%) resulted in positive cytological analysis (pap test) for HPV-related lesions. Among negative results (71), 42 resulted positive for at least one HPV genotype. 65.2% of screened resulted eligible to HRA. ASCUS was found in 5 patients, LSIL in 42 cases, HSIL in 3 patients. Recently 19 patients underwent HRA (started in a later period), and 14 of these resulted positive (2 HSIL, one of them detected for the first time). We diagnosed one case of CIS in the follow up of one of these 2 patients previously treated for HSIL with DTC.
Conclusion: Comparing our data with the literature our results appear to be similar (41.3 vs 47.5% of positive cytology). Our rate of HRA eligibility is likely to be higher (85.6% in literature). The diagnosis of HSIL and CIS shows the importance of screening in subjects with no lesions and the importance of a short term follow-up in patients treated for HSIL.

P390

Increase in the peripheral lymphocyte-monocyte ratio after primary site resections is related to prolonged survival in unresectable synchronous metastases

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Background: A high pre-treatment lymphocyte:monocyte ratio (LMR) has previously been related to a better prognosis in patients with metastatic colorectal carcinoma
Aim: We assessed the relation between the LMR change and prognosis after the primary tumor excision in colorectal carcinoma patients with unresectable synchronous metastases.
Method: Thirty-two patients with LMR increase after primary tumor resection (LMR-increase) and 24 patients with LMR decrease (LMR-decrease) were compared, retrospectively.
Results: The preoperative lymphocyte population and LMR in peripheral blood of the LMR-increase group were significantly less than those of LMR-decrease group. There were no differences in any other patient characteristics and the extent of metastases between the 2 groups. The median survival times of the LMR-increase and LMR-decrease groups were 27.3 and 21.0 months, respectively ($P < 0.01$). Multivariate regression analysis identified LMR-decrease (hazard ratio, 1.8) as being associated with a poor prognosis, along with undifferentiated adenocarcinoma, the right side location of the primary tumor and preoperative LMR <3.5. When the resected specimen were assessed in available cases, there were significantly more $CD163^+$ and $CD8^+$ cells invading into tumor stroma ($n = 5$).
Conclusion: Increase of peripheral lymphocyte-monocyte ratio after primary site resections was related with a prolonged survival in patients with unresectable synchronous metastases.

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P391

A second primary rectal cancer following pelvic radiation therapy – a population based study

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Aim: To analyze the association between radiation therapy (RT) for a primary tumour in the pelvis and the development of second rectal cancer.
Method: Data on all pelvic cancer patients between 1989–2007 were retrieved from a nationwide cancer registry. To estimate the cumulative incidence of a second tumor, Fine and Gray's competing risk model was used. Cox regression was used for multivariable analysis.
Results: 192 658 patients were included, of which 62 630 patients (32.5%) were treated with RT for the primary cancer. Primary tumors were located in the prostate (50.1%), bladder (19.2%), uterus (13.9%), ovaries (10.0%), cervix (6.4%), and vagina (0.4%). Median follow-up was 6.8 years (range 0–27). A second rectal cancer occurred in 1.0% of RT patients and 0.6% of patients without RT (SHR1.72, 95% CI 1.55–1.91). Organ-specific analysis showed an increased risk in patients who received RT for prostate (SHR 1.89, 95%CI 1.66–2.16) and uterine cancer (SHR 1.50, 95%CI 1.13–2.00). RT for bladder cancer protected for rectal cancer (SHR 0.67, 95%CI 0.47–0.94).
Conclusion: Patients who received RT for a primary pelvic cancer were at increased risk for a second rectal cancer. However, the increased risk was modest and could not be confirmed for all primary cancer sites.

P392

Sentinel node in colon cancer

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Aim: To look at the sentinel node detection technique in colon tumors and to increase the sensitivity in the diagnosis of lymph node metastasis in colon cancer.
Method: 43 Consecutive colon cancer patients were selected, Once the specimen was removed, the *ex-vivo* methylene blue technique was performed. Methylene blue was injected into the tumour, Thereupon the tumour was massaged for five min. Afterwards the sentinel nodes were removed. Lymph nodes were subjected to the OSNA (One Step Nucleic acid Amplification) technique, This amplification method helps to identify copies of mRNA of the cythokeratin CK19, which are plentiful in tumour cells but absent in normal lymph nodes.
Results: The sentinel lymph node was positive for metastasis in 6 cases. The sentinel node was negative in 37 cases. As a result of that, a sensitivity of 42% and a specificity of 96% was concluded for our sample. The positive predictive value was 83% and negative predictive value was 81% in our sample.
Conclusion: This tested technique was simple and can be undertaken in any coloproctology unit as long as the OSNA procedure is available within the Pathology department. However the achieved results are insufficient to conclude the usefulness of this technique.

P393

Rectal washout does not increase the complication risk after anterior resection for rectal cancer

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Aim: To reduce local recurrence risk rectal washout (RW) is integrated in the total mesorectal excision (TME) technique when performing anterior resection (AR) for rectal cancer. RW is considered to be a safe maneuver although data on the complication risk are scarce. The aim of this study was to examine the association between RW and 30-day postoperative complications after AR for rectal cancer.
Method: Data from the population-based Swedish Colorectal Cancer Registry for patients undergoing AR from 2007–2013 were analysed. Differences in the complication risk were analysed with multivariable methods.
Results: A total of 4821 patients were included (4317 RW, 504 no RW). The overall complication rate was significantly lower in the RW group [37% (1578/4317) *vs* 41% (208/504); $P = 0.039$] as well as the surgical complication rate [20% (879/4317) *vs* 28% (140/504); $P<0.001$]. The 30-day mortality rate was significantly lower in the RW group [1.2% (50/4317) *vs* 2.4% (12/504); $P = 0.020$]. In multivariable analysis RW was neither a risk factor for overall complications [OR 0.749 (95% CI 0.611–0.919); $P = 0.006$] nor surgical complications [OR 0.640 (95% CI 0.513–0.799); $P<0.001$].
Conclusion: The 30-day postoperative complication risk was not increased after RW when performing AR with TME technique for rectal cancer.

P394

Sensitivity of evaluating modalities for predicting a pathologic complete response after preoperative chemoradiation therapy for locally advanced rectal cancer

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Aim: We investigated the sensitivity of evaluating modalities in predicting pathologic complete response (pCR) after preoperative chemoradiation therapy (PCRT) for locally advanced rectal cancer (LARC).
Method: We retrospectively analyzed 313 patients who showed pCR after surgery from a population of 2247 LARC patients who underwent PCRT followed by surgery from 2007 to 2016.
Results: Preoperative transrectal ultrasound (TRUS), magnetic resonance imaging (MRI), and abdominopelvic computed tomography (AP-CT) were performed in 283, 305 and 139 patients within 2 weeks prior to surgery, respectively. Among these three groups, a prediction of pCR of the primary tumor before surgery was made in 41 (14.5%), 51 (16.7%) and 27 (19.4%) patients respectively. A prediction of a clinical N0 stage was made in 204 (88.3%) patients by TRUS, 130 (52.2%) by MRI and 78 (65.5%) by AP-CT. Of the 209 patients who underwent endoscopy, 67 (32.1%) had mentions of clinical CR. A prediction of pCR was made in 122 (35.8%) patients through at least one diagnostic modality.
Conclusion: The various evaluation methods for predicting pCR after PCRT show a predictive sensitivity of 0.15–0.31 for primary tumors and 0.52–0.88 for lymph nodes. Endoscopy is a relatively superior modality for predicting pCR of the primary tumor of LARC.

P395

Incidental finding of appendiceal tumors

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Aim: Less than 3% of the appendectomy specimens detects a primary appendiceal tumour. Here we present our experience of appendiceal tumours.
Method: Between 01.01.2016 and 31.12.2017, 585 patients with acute appendicitis underwent either laparoscopic or open appendectomy. Five patients with appendiceal tumors were reported. Demographic characteristics, histopathology, clinical findings, surgical findings and follow-up of patients were retrospectively analyzed.
Results: There were three female and two male patients and the average age was 50. All the clinical findings were found to be consistent with an acute abdomen. The CRP value was high in all cases. In three cases, the ultrasound or CT reported acute appendicitis. Physical examination and imaging examinations and a diagnosis of acute appendicitis diagnosis was made. Histopathological examination revealed the pathology in two patients as well differentiated neuroendocrine and three patients as low grade appendicular mucinous neoplasia.
Conclusion: Less than 3% of the appendectomy specimens detect a primary appendiceal tumour. In our study it was 0.85%.

P396

Interventions used to improve compliance to colorectal cancer screening amongst ethnic minorities: a systematic review

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Aim: Despite colorectal cancer (CRC) screening demonstrating a reduction in mortality for CRC, there remains a disproportionate uptake across ethnic minorities as shown by international studies. Our study aimed to evaluate the effectiveness of different interventions in increasing participation in screening.
Method: A literature search was performed in order to identify studies evaluating interventions promoting the uptake of CRC screening. Data reporting on the average increase in participation was extracted.

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Results: Twenty-two studies from three countries were included, reporting on over 670 000 patients. Overall, the use of telephone intervention led to an increase in uptake by 9.53% (n = 11 686). Face-to-Face health promotion (n = 3172), GP endorsement letter (n = 404 525) and patient leaflet (n = 85 571) resulted in an increase of 7.27%, 4.63% and 3.15%, respectively. Duration of the interventions ranged from 20 days to 1 year.
Conclusion: Our review demonstrated that telephone intervention had the greatest influence on participation. This may be explained by enhanced clarity of CRC screening by providing verbal information in the participant's first language and direct targeting of participants in areas of high ethnic diversity. The majority of the interventions were run short-term. Further collaborative interventions to evaluate the long-term benefits and cost effectiveness of interventions are necessary.

P397
Impact of tumor depth and nodal positivity on 30-day operative outcomes following descending colectomy

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Aim: Anastomotic leak (AL) after colectomy is associated with worsened oncologic outcomes. We aimed to evaluate the impact of tumor grade and node involvement on outcomes following resection of descending colon malignancies.
Method: The ACS-NSQIP Colectomy database (2012–2016) was queried for descending colon malignancies, excluding disseminated/rectal cancers, preoperative chemoradiation and steroids. Patients were compared based on tumor/node classifications. Multivariate analysis adjusted for known predictors of AL.
Results: 12 234 patients underwent descending colectomy. Major complications occurred in 23.0%, AL 3.3%, 30-day mortality 1.6%. Compared to T0-3, patients with T4 lesions had increased major complications (33.4%vs21.9%, $P < 0.0001$) and mortality (2.9%vs1.3%, $P < 0.02$); AL rates were similar. Conversely, N1/N2 involvement had fewer AL than N0 (3.0% vs3.8%, $P < 0.03$). T4 increased likelihood of major complications (OR1.5;95%CI 1.140–1.961), minor complications (OR1.5;95%CI 1.200–1.929), and mortality (OR2.4;95%CI 1.317–4.246). Nodal disease was protective against AL (OR0.65;95%CI 0.471–0.908) and mortality (OR0.44;95%CI 0.240–0.806).
Conclusion: In our analysis of descending colon malignancies, T4 lesions were associated with increased complications and 30-day mortality. Interestingly, N1/N2 disease was associated with fewer AL and 30-day mortalities. Further research is needed to delineate interactions between tumor and node status on postoperative complications.

P398
Predictors of anastomotic leak in ascending and descending colon malignancies

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Aim: In colorectal malignancies, anastomotic leak (AL) is associated with increased local recurrence and reduced survival. Few studies have isolated predictors of AL to specific colon segments or controlled for tumor grade or node involvement.
Method: The ACS-NSQIP Colectomy database (2012–2016) was queried for ascending (AC) or descending (DC) colon malignancies. Disseminated and rectal cancers were excluded. Multivariate models adjusted for clinical confounders.
Results: 22 348 patients (45.3% AC, 54.7% DC) underwent colectomy. AL occurred in 2.2% AC and 3.3% DC malignancies. Fewer AL occurred in DC patients with pathologic nodes (N1/N2) compared to N0 (3.0%vs3.8%, $P < 0.03$). Nodal disease was independently associated with decreased AL in ascending (OR0.59;95%CI 0.358–0.964) and descending malignancies (OR0.65;95%CI 0.471–0.908). Minimally-invasive surgery conferred similar protective effects during right (OR0.60;95%CI 0.384–0.928) and left-sided colectomies (OR0.65;95%CI 0.477–0.880). Among DC malignancies, smokers (OR1.7;95%CI 1.168–2.43) and ASA≥3 (OR1.6;95%CI 1.160–2.277) had higher likelihood of AL.
Conclusion: In this analysis of AL predictors in colon malignancies, nodal involvement and MIS were associated with fewer AL in right and left-sided colectomies. Smoking and ASA≥3 increased AL risk after left colectomy only. Further studies are needed to determine interactions between nodal disease and other predictors of complications.

P399
Tetraspanin CD63 independently predicts poor prognosis in colorectal cancer

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Aim: CD63, a member of the tetraspanin family that participate in a variety of physiological processes. CD63 has been reported to have both protumorigenic and tumor suppressor properties. CD63 is found upregulated in breast cancer, astrocytoma, and melanoma. CD63′s effect on prognosis is unclear and there are no previous reports concerning colorectal cancer (CRC). The incidence of CRC is rising around the world and novel biomarkers are needed to better identify patients with increased risk of recurrence and who might benefit from adjuvant therapy.
Method: We applied immunohistochemistry with antibodies to human CD63 on tissue micro-arrays of 620 consecutive treated CRC patients.
Results: CD63 expression associated with advanced stage, poor differentiation and, mucinous histology. There was no association between CD63 expression and age, gender or tumor location. CD63 expression predicted unfavorable prognosis compared in CRC and in the subgroup of metastasized CRC, which also remained true in multivariable analysis.
Conclusion: We have shown that CD63 IHC expression is an independent marker of unfavorable prognosis in CRC and that it is associated with unfavourable clinicopathological parameters. Our results support the hypothesis that increased tissue expression of CD63 in CRC indicates an EMT-associated secretory phenotype associated with an adverse prognosis.

P400
The incidence of malnutrition in patients with colorectal cancer

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Aim: Malnutrition is well-known problem and prognostic factor in lower GI cancer patients undergoing major surgery. We aimed to undertake an assessment of nutritional status of GI cancer patients prior to surgery.
Method: A total of 272 patients with 112 (41.1%) rectum and sigmoid, 86 left colon (31.6%), 64 right colon (23.5%), 6 transverse (2.2%) and 4 anal (1.47%) cancers, between January 2009-January 2018 were enrolled. There were 166 (61.1%) male and 106 (38.9%) female patients with a mean age of 63.2 years (28–87). All patients were analyzed with NRS2002 and Subjective Global Assessment scales preoperatively.
Results: Malnutrition (moderate and severe) rates were 75% and 78.6% according to NRS2002 and SGA scales, respectively. NRS2002 scales indicated patients as well-nourished (0–2 points) (n = 68, 25%), moderate malnutrition (3–4 points) (n = 200, 72%) and severe malnutrition (≥5 points) (n = 4, 1.45%). SGA scales showed 58 (21.4%) patients with well-nourished (A), 166 (61%) patients with moderate malnutrition (B) and 48 (17.6%) patients with severe malnutrition (C). Morbidity and mortality rates were 14 (5.14%) and 5 (1.83%) patients. However, wound infection was the commonly seen morbidity whereas cardiopulmonary insufficiency was most common factor for mortality.
Conclusion: Preoperative nutritional status should be checked in colorectal cancer patients prior to surgery.

P401
Comparison of potential predictors of recurrence in local versus distant recurrent rectal cancers

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Aim: The aim of this study was to compare potential predictors of recurrence in two groups of patients with local and distant recurrent rectal cancer.
Method: A total of 57 patients with confirmed recurrence were included. All patients had undergone neoadjuvant chemoradiation followed by curative resection for non-metastatic primary rectal cancer. According to the location of the recurrence, the patients were categorized into local (A) and distant (B) recurrence groups.
Results: Mean age of patients was 50 ± 15 years (including 35 male, 22 female). Recurrence was recorded within an average of 533 ± 395 days after the primary operation (A = 402 ± 292, B = 622 ± 434, $P = 0.61$). Mean distance of the primary tumor was 6.4 ± 4.7 (A) and 7.7 ± 4.3 (B) centimeter from the anal verge ($P = 0.49$). Preoperative CEA serum levels were 5.22 ± 6.78 (A) and 10.54 ± 11.84 (B) ng/mL ($P = 0.14$). Vascular invasion of the tumor was detected in 56.5% and 46.1% of patients, respectively ($P = 0.47$). Neural invasion was also reported in 36.8% and 38.4% of patients, respectively ($P = 0.91$).
Conclusion: Although no statistical difference was found between the groups, patients with distant recurrence had higher preoperative CEA level and positive vascular invasion.

P402
Primary conclusion from TATME experience – the most benefit for "difficult" rectal cancer patients

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Aim: To compare mid-term results for "difficult" patients after transanal total mesorectal excision (Ta-TME) and laparoscopic (Lap-TME).

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Method: Patients with middle and low rectal cancer, cT1–4aN0-2M0 were included in a prospective nonrandomized trial. We identified 20 in TA-TME and 14 in Lap-TME group as "difficult" patients: male + BMI ≥25 kg/m2 and who had received preoperative therapy.
Results: the groups had comparable characteristics and perioperative results. Grade I of TME was 10% in Ta-TME group vs 28.6% in Lap-TME group; "positive" lateral margin 5% vs 14.3%, $P > 0.05$. Stapler anastomosis was done in 79% in Ta-TME and in 50% in Lap-TME group, $P = 0.086$. Median follow-up was 24 months. 1 patient developed local recurrence in Ta-TME group. Actuarial 3-years disease-free survival was 95.7% for Ta-TME and 93.9% for Lap-TME, $P > 0.05$.
Conclusion: Transanal TME may be an option for the "difficult" patient to obtain good oncological and functional results. Further multicenter RCTs with adequate power are required.

P403

Real-time near-infrared endoscopic probing of rectal cancer as a clinical diagnostic adjunct: pilot study

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Aim: Indocyanine green (ICG) with near-infrared (NIR) laparoendoscopy is used to enhance real-time tissue micro perfusion visualisation. Similarly, NIR-ICG should reveal neoplastic tumours as metabolically distinct from normal tissue with invasive cancer differentiating optically from dysplasia.
Method: Colorectal tumours of 28 patients were imaged sequentially intraoperatively (NOVADAQ PINPOINT) both *in situ* and *ex vivo* after resection following intravenous ICG (0.25 mg/kg). A rectal cancer subgroup ($n = 13$) was visualized continuously (30 min) transanally before resection and their videos analysed for texture and fluorescence (peak/persistence/intensity) patterns using Image J/Mat Lab software (NIH) scrutinising signaling differences between tumour/polyp and adjacent normal mucosa. Unstained tissue sections were studied by fluorescence microscopy.
Results: Colorectal tumours ($n = 7$) were seen in every case to selectively trap ICG, grossly and microscopically. Fluorescence analysis showed identifiable early differentiation of adenocarcinoma by delayed influx (>60 s) and distinctive signal concentration (>6 hrs) including *ex vivo* specimens. Graphical log-signal trend tracking proved more distinctive for malignant (divergent in every case) versus dysplastic ($n = 6$) lesions (convergent in every case), differentiating more than any other single point-in-time assessment.
Conclusion: NIR-ICG interrogation can allow *in-situ* visualisation of tumour metabolomics with characteristic signal patterns distinguishing invasive from non-invasive neoplasia. While passively distributed, ICG acts as a tumour-labeller.

P404

Oncologic safety of laparoscopic surgery after metallic stent insertion for obstructing left-sided colorectal cancer: a multicentre comparative study

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Aim: To compare the oncologic outcomes of laparoscopic *vs* open surgery after successful deployment of colonic stent for obstructing left-sided colorectal cancer.
Method: A multicenter study was undertaken. 181 (97 laparoscopic, 84 open) patients with obstructing left-sided colorectal cancer who underwent radical resection with curative intent after successful stent deployment were retrospectively reviewed. The short- and long-term outcomes between the two groups were compared.
Results: The two groups had similar demographics and tumor characteristics. Operation time was longer but blood loss was less in the laparoscopic group. There were 9 open conversions. There were no significant differences in stoma formation rate, in-hospital morbidity, post-operative hospital stay, 30-day readmission rate, and 30-day mortality. 5 year DFS (laparoscopic 68.9% *vs* open 57.0%, $P = 0.224$) and OS (81.6% *vs* 71.9%, $P = 0.195$) did not differ at a median follow-up of 50.5 months. Advanced stage (DFS:HR 1.825[1.072–3.107]; OS:HR 2.441[1.216–4.903]) and omission of post-operative chemotherapy (DFS:HR 2.529[1.481–4.319]; OS:HR 2.666[1.370–5.191]) were associated with worse long-term outcomes.
Conclusion: Stent insertion followed by laparoscopic surgery with curative intent is a safe and feasible option for patients after successful stent deployment for left sided obstructing colorectal cancers. Addition of post-operative chemotherapy should be considered for these patients after successful treatment.

P407

Prognostic significance of radial resection margin for colon cancer

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Aim: The negative resection margin for solid tumours is important in preventing recurrence after surgery. However, the prognostic impact of CRM has not yet been clearly evaluated in colon cancer. The aim of study was to evaluate the oncologic impact of CRM in locally advanced colon cancers.
Method: Between 2000 and 2014, the records of patients with T3/T4a colon cancers were retrieved from prospectively collected database. CRM was dichotomized using Contal and O'Quigley method. Cox proportional hazard models were performed for overall survival (OS), disease free survival (DFS), and time to local recurrence (TLR).
Results: A total of 135 patients were included, the cut-off of CRM was determined as 2.5 mm. In univariable analysis, the significant risk factors were tumour location, N classification, distal margin, CRM, venous invasion, angiolymphatic invasion, and perineural invasion for OS, tumor location, N classification, CRM, venous invasion, angiolymphatic invasion for DFS, and T and N classification, CRM, venous invasion for TLR. In multivariable analysis, CRM less than 2.5 mm was a significant risk factor for OS (HR = 2.7, $P = 0.016$), DFS (HR = 2.4, $P = 0.023$), and TLR (HR = 4.1, $P = 0.014$).
Conclusion: CRM less than 2.5 mm was associated with worse survival and high local recurrence in locally advanced colon cancer.

P408

Clinical effect of histological mixed type on prognosis of patients with colon cancer

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Aim: We defined colon cancer comorbid with poorly differentiated adenocarcinoma (por), mucinous adenocarcinoma (muc) or signet-ring cell carcinoma (sig) as mixed carcinoma (MC), in which the proportion of por, muc and sig doesn't matter. This study was designed to clarify whether prognostic outcome of MC differs when compared with well and moderately differentiated adenocarcinoma without MC (pure differentiated adenocarcinoma; PDA).
Method: Between 2007 and 2015, a total of 234 patients who underwent curative resection of Stage II/III colon cancer in our hospital were involved. Clinicopathological features and relapse free survival were compared between MC and PDA.
Result: In Stage II, MC showed worse relapse-free survival when compared with PDA ($P = 0.003$). Multivariate analysis revealed that infiltrative growth pattern ($P = 0.007$), massive venous invasion ($P = 0.027$), and MC ($P = 0.002$) were independent risk factors for cancer relapse. In Stage III, however, MC had no impact on prognosis in comparison with PDA ($P = 0.461$).
Conclusion: Our study has confirmed MC as one of the independent prognostic factors in Stage II colon cancer and might help selecting high-risk patients for adjuvant chemotherapy.

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P409

Risk of lymph node metastasis in patients undergoing radical surgery for T1 and T2 colorectal adenocarcinoma

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Aim: Determination of lymph node metastasis is extremely important to plan proper management treatment strategy for colorectal cancer. We aimed to evaluate the factors associated with lymph node metastasis in patients with early stage (T1-T2) colorectal cancer.
Method: Between June 2010-January 2018, patients who underwent radical surgery for T1 and T2 colorectal adenocarcinoma were included.
Results: There were 236 patients. 10 (12%) out of 83 and 26 (17%) out of 153 patients with T1 and T2 tumors had lymph node metastasis respectively. Lymph node metastasis was associated with younger age (<66 years, 64 vs 44%, $P = 0.03$), female gender (56 vs 37%, $P = 0.04$), poor tumour differentiation ($P = 0.02$), venous (17 vs 5%, $P = 0.01$) and lymphatic (64 vs 16%, $P < 0.0001$) invasion; while tumor location ($P = 0.69$), tumor size (3 vs 3, $P = 0.68$) and perineural invasion (14% vs 6%, $P = 0.1$) were comparable. In multivariate analysis age ($P = 0.046$), venous invasion ($P = 0.035$) and lymphatic invasion ($P < 0.0001$) were shown to be independent risk factors for lymph node metastasis.
Conclusion: The management strategy, radical surgery versus local excision, for patients with early colorectal cancer should be carefully calibrated by considering major risk factors for lymph node metastasis such as patients' age, presence of lymphatic and venous invasion.

P410

Preoperative anatomical road-mapping reduces variability of operating time, estimated blood loss and lymph node yield in right colectomy with extended D3 mesenterectomy for cancer

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Aim: To assess the impact of knowledge of individual patient anatomy in right colectomy with extended D3mesenterectomy where surgeons use 3-D reconstruction of the vascular anatomy. Data on the impact of patient vascular anatomy where surgeons have an anatomical road map as a guide is missing in the literature.
Method: Consecutive patients were classified into six groups using a 3-D vascular anatomy reconstruction derived from staging CTs. Outcome measures: operating time, EBL, vascular events, lymph node yield.
Results: 176 patients included. Mean operating time 200 ± 50 min. Type 4b required significantly longer operating time (mean 219 ± 59) compared to type 3 (mean 188 ± 43), ($P = 0.004$). Vascular events occurred most often in anatomy type 4b (20.0%) and 3 (19.2%). No difference in EBL and lymph node yield was found ($P = 0.102$ and $P = 0.803$).
Conclusion: Awareness of the individual anatomy before surgery leads to safer, cost-efficient and less time-consuming surgery. The 3-D reconstruction seems to even out differences in operating time, EBL and lymph node yield between anatomical groups, diminishing the effect of vascular events that occur in patients with complex anatomy. The results could have an impact in planning surgical procedures and distribution of hospital resources.

P411

Distal intramural spread of rectal cancer following neoadjuvant chemotherapy without radiotherapy

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Aim: To evaluate the distal intramural spread (DIS) of rectal cancer in patients following neoadjuvant chemotherapy.
Method: Patients with clinical stage II/III rectal cancer were administered six cycles of folinic acid, fluorouracil, and oxaliplatin (FOLFOX), followed by elective surgery. DIS was microscopically evaluated in surgical specimens. Post-neoadjuvant treatment stage (ypStage) and tumour regression grade (TRG) were assessed according to the TNM Classification and the TRG system of the Japanese Classification of Colorectal Carcinoma.
Result: Between January 2012 and December 2015, 30 patients with rectal cancer were enrolled. The completion rate of the scheduled 6-cycle FOLFOX was 93.3% (28/30). All patients underwent R0 resection following neoadjuvant chemotherapy. Median follow-up period was 41.6 months, and there were eight recurrences, which included six distant metastases. Seven patients (23.0%) were DIS (+), whereas six patients presented distal direct intramural extension of <10 mm. Additionally, another patient had extra-nodal cancer tissue located 12 mm from the distal tumor edge. Notably, DIS was not correlated with ypT, N category, and TRG. Three-year disease-free survival rate of DIS (−) and DIS (+) was 76.0% and 85.7%, respectively ($P = 0.56$).
Conclusion: Regardless of tumor shrinkage by neoadjuvant chemotherapy, distal margin ≤1 cm can adversely affect oncological outcomes.

P412

Systematic review of the impact of socioeconomic, demographic and religious factors on quality of life in ostomized colorectal cancer survivors

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Aim: Formation of a faecal stoma may be necessary in colorectal cancer (CRC) surgery but will substantially impact the health-related quality of life (HRQoL) in about 20% of patients. Little is known about patient-related risk factors for reduced HRQoL in ostomates and we decided to review the literature on socioeconomic, demographic and religious risk factors for reduced HRQoL in ostomized CRC survivors.
Method: The databases Pubmed, Embase, CINAHL, PsycINFO and Cochrane Library were systematically searched. Two independent reviewers extracted eligible publications. Studies assessing HRQoL with a validated questionnaire were included if statistical analysis was performed on the impact of socioeconomic, demographic and/or religious factors as primary or secondary outcome.
Results: Eligible studies were predominantly small retrospective cohorts. Several studies found that HRQoL was lower in women than in men. The impact of age showed equivocal results, subdivision into age groups differed widely. Most studies found that socioeconomic factors did not affect HRQoL while others found lower education and not being employed correlated to reduced HRQoL. How these factors were categorized also varied widely.
Conclusion: We found HRQoL was reduced more in women than in men but conclusions regarding other factors were difficult. Further research in this subject is needed.

P413

Outcomes between right- and left-side colon cancers following laparoscopic resection with radical lymphadenectomy

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Aim: Colon is originated from midgut and hindgut, which are differentiated to right- and left-side colon according to their locations. This study was designed to compare short- and long-term outcomes between right and left side colon cancers.
Method: A total of 966 patients were included in this study who underwent laparoscopic colon resection with radical lymph node dissection for cancers between December 2009 and December 2014 at a tertiary teaching hospital.
Results: Among the patients involved, 343 (35.5%) were classified as the right- and 623 as left-sided colon cancer group. Patients' characteristics had no differences between the groups: mean age, sex, BMI, ASA classification, past medical history, previous abdominal operative history, and preoperative carcinoembryonic antigen level. On analysis of histopathology, right-side colon cancer showed higher vascular ($P = 0.006$), lymphatic ($P = 0.004$), and neural ($P = 0.008$) invasion. Cancers in right side also had a tendency to be poorly differentiated ($P < 0.001$). The groups did not differ regarding postoperative parameters or disease-free, overall, and cancer-specific survivals.
Conclusion: Although oncologic outcomes had no different between right- and left-side colon cancers, right-side cancer showed histopathologically poor prognosis: vascular, lymphatic, neural invasion, and poor differentiation.

P414

The distal resection margin (DRM) in low anterior resection: laparoscopic TME versus taTME

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Aim: The use of transanal TME dissection for the management of rectal cancer has the advantage of direct visualization of the tumour and establishment of the distal resection margin (DRM).

We compared the DRM in our laparoscopic low anterior (TME) and taTME cohort in the management of low rectal tumours from a single centre.

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Method: Prospectively collected data. Histo-pathological assessment was performed in the same unit. All tumours were in the mid to low rectum.
Results: 36 taTME resections for rectal cancer were compared with 36 laparoscopic low anterior resections over a similar time period. There were no involved DRM. However, 19% of the laparoscopic group had a DRM under 10 mm compared to 8% of the taTME group ($P = 0.287$). The median DRM for the taTME group was 25 mm (range 3 – 72) compared to the laparoscopic TME group which was 20 mm (range 1 – 80) ($P = 0.218$).
Conclusion: Whilst not statistically significant, patients in the taTME group had a greater DRM and fewer close margins (<10 mm) than the laparoscopic group. Direct visualization of the tumour when placing the purse-string allows more control of the DRM avoiding blind stapling associated with the laparoscopic approach.

P415
Management of early anal squamous cell cancer: observational cohort study

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Aim: The efficacy of local excision in early anal squamous cell carcinoma has been demonstrated however the importance of resection margins and need for adjuvant therapy remains unknown.
Method: All patients undergoing curative treatment with local excision for T1 and early T2 (<3 cm), N0 tumours were identified over an 11-year period (Jan 2007 to Dec 2017) from a tertiary referral unit. Tumour site, resection margin, adjuvant therapy and disease recurrence were assessed amongst this group.
Results: Of 332 patients treated for ASCC, 42 (15%, median age 63 (38–4), 29F:13M) of these were primarily managed with local excision. 14 (34%) of tumours were located in the anal canal and had fewer R0 resections compared to anal margin tumours (14% vs 52%, $P = 0.02$). No recurrences were detected among patients with R0 resection. Of the 21 patients with an R1 resection, 29% experienced a local recurrence (LR). Fifteen of these patients had adjuvant chemoradiotherapy and 6 received no further treatment (27% LR compared to 33% LR respectively). The 5-year Overall Survival was 95%.
Conclusion: Early anal canal tumours are harder to adequately excise. Recurrence is high amongst those with an inadequate margin even despite adjuvant therapy. However overall survival remains good.

P416
Anal squamous cell carcinoma (ASCC): a tertiary referral unit 11-year review

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Aim: Anal squamous cell carcinoma (ASCC) remains an uncommon malignancy in the UK however incidence does appear to be on the rise.
Method: We performed a retrospective review of all patients managed through a single tertiary referral unit with primary ASCC from January 2007 to December 2017.
Results: In total 332 patients were identified (Age 64 range 33–95). 69% (229) were female and 91% (302) identified as white British. Only 2% ($n = 7$) were known to be HIV positive. The 22% of patients were current/ex-smokers. PR bleeding was the predominant presenting feature in this cohort (37%, $n = 123$).

278 (84%) patients underwent curative treatment. Of these 42 (15%) were managed primarily with local excision and the other 236 (85%) with chemo-radiotherapy with a median radiotherapy dose of 50.4 Gy. 8% (26/332) of patients had a de-functioning stoma pre-treatment and one (4%, 1/26) had this closed.

5-year overall survival for those undergoing treatment with curative intent was 78%. Recurrent disease was detected in 19% ($n = 54$) of those having curative treatment with a median length of detection of 12 months (range 7 to 117). 48% (26/54) were eligible for salvage surgery.
Conclusion: Recurrence is low and colostomy free survival is high amongst this cohort.

P417
Local excision of rectal cancer: The Basingstoke experience from 2005 to 2017

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Aim: To outline the outcomes of rectal cancer treated with local excision within Basingstoke Hospital from 2005 to 2017.
Method: Data were analysed retrospectively from a prospective database of all rectal cancer patients.
Results: 685 patients were diagnosed with rectal cancer between 2005 and 2017. 63 patients (10.6%) had local excision. The 26 patients (41.3%) had endoscopic polypectomy. 18/26 (69.2%) of these patients are alive and disease free (median follow up 58.4 months). Eight patients required further surgery, three of which contained evidence of residual tumour.

17 patients (27.0%) had transanal resection of tumour (2005–2010), and 20 patients (31.7%) had TEMS (2010–2017). The average size of the resected lesion was 20 mm (15–26) and 30 mm (22–45) respectively. Within these two operated groups, complete resections were seen in 94.1% and 100%. Further surgery (anterior resection) was carried out in 1 (5.9%) and 5 (25%) patients respectively, due to adverse histological features. Overall survival was 8.4 year (95% CI: 6.5–10.4) and 4.8 year (95% CI: 3.6–6.0).
Conclusion: Our 13 years experience of selected local excision for rectal cancer has good outcomes and falls within national standards.

P418
Ethnic disparities in the uptake of colorectal cancer screening: a systematic review

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Aim: Colorectal Cancer (CRC) screening has demonstrated a reduction in mortality for CRC. Our systematic review aimed to evaluate the impact of ethnicity on the uptake of CRC screening worldwide.
Method: A literature search was performed to identify studies reporting on participation of ethnic minorities in CRC screening. Outcome of interest was the odds of ethnic groups participating in the CRC screening programme with respect to the reference group as reported in the studies included
Results: Twenty-two studies were included in the review reporting on 4424020 patients, of which 40.2% were males. Overall, 17/22 studies reported a significant impact of ethnicity on participation in faecal occult blood test and/or colonoscopy. Majority of the studies used the "white" ethnic group as the reference group. "Asian" (OR range: 0.54 to 0.73) and "South Asian" (OR range: 0.6 to 0.75) ethnicities displayed poor participation in the programme, however, a study demonstrated that "Japanese" ethnicity (OR: 1.16) had significantly better participation compared to the "White" group.
Conclusion: Substantial variation in categorisation of ethnicities was observed across CRC screening worldwide. Recognition of ethnicity as a barrier to CRC screening is imperative, with international consensus on ethnicity classification across ethnicity data for colorectal screening worldwide.

P419
A retrospective analysis of the impact of socioeconomic deprivation on the uptake of colorectal cancer screening in London

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Background: Disproportionate uptake of Bowel Cancer Screening programme (BCSP) can widen health inequity. This study aims to evaluate the impact of socioeconomic deprivation on the uptake faecal occult blood test (FOBt) in an unselected population in London.
Method: A retrospective review of the "Vanguard RM Informatics" database was performed to identify eligible individuals for CRC screening across all general practices across London over 2.5 years (2014–2017). The postcodes of the general practices were used to obtain the deprivation data such as the index of multiple deprivation rank (IMDR), income rank (IR), employment rank (ER), education and skills rank (ESR), and health and disability rank (HDR), via the "Indices of Deprivation" database. A spearman's rho correlation was performed to quantify the impact of deprivation on FOBt uptake.
Results: Overall, 697020 individuals were eligible for screening across 1359 general practices. Of these, 48.4% (range: 13%–74%) participated in CRC screening. A significant negative correlation ($P < 0.001$) was demonstrated between IMDR (r = 0.525), IR (r = 0.457), ER (r = 0.426), ESR (r = 0.309) and HDR (0.449), and uptake of FOBt.
Conclusion: This is the largest study evaluating the impact of deprivation, education, income and employment on FOBt uptake. Further strategies are imperative to reduce socioeconomic inequalities in CRC screening.

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P420

Indocynine green-enhanced fluorescence angiography during robotic rectal cancer surgery: preliminary results from 25 cases at a single institution

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Aim: Anastomotic leak after colorectal surgery is a severe complication. The aim of this study was to evaluate the potential benefit of intraoperative assessment of vascular anastomotic perfusion in robotic surgery for rectal cancer using indocynine green-enhanced fluorescence.
Method: Indocynin green-enhanced fluorescence angiography (ICGFA) was performed from March 2017 to April 2018 in all consecutive rectal cancer patients undergoing robot-assisted rectal resection. Patient characteristics, perioperative parameters and postoperative morbidity were collected prospectively.
Results: Successful ICGFA was performed in all consecutive 25 (100%) rectal cancer patients with TME/PME. There was no changed resection strategy. In one case correct perfusion of the anastomosis led to the decision to leave the planned protective ileostomy. There were no intraoperative adverse events. Intracorporeal stapled anastomosis was performed in 25 (100%) cases. Anastomotic leak (Clavien-Dindo grade II) was identified in one case (4.0%). No side effects related to ICGFA have occurred. There was no conversion to open procedure.
Conclusion: Our experience confirmed that ICGFA is safe and technically feasible for robotic rectal cancer surgery. Our preliminary results certify that ICGFA may potentially contribute to reducing the anastomotic dehiscence rate.

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P421

Expression of RNA-binding Motif Protein 3 is associated with improved clinical outcome in colon cancer

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Aim: The role of the RBP family members has not been explored in colon cancer and their possible use as prognostic biomarkers is largely unknown.
Method: We examined the RNA expression of IGFBP2, RBM3, and CIRP in 94 human colon cancer samples along with matched normal tissue samples from each patient using quantitative real-time polymerase chain reaction (qRT-PCR).
Results: No significant associations were observed between RNA expression of RBPs and the studied clinical features. The estimated 5-year disease-free survival rate was significantly better for patients with higher expression of RBM3 and CIRP, while patient survival was not significantly correlated to IGFBP2 expression.
Conclusion: RBM3 and CIRP may be useful prognostic biomarkers of colon cancer.

P422

Outcomes of laparoscopic radical lymphadenectomy according to the position of metastatic lymph nodes for stage III colon cancer

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Aim: Colon cancers are staged by assessing more than 12 lymph nodes, but there is still a controversy over the lymph nodes. This study was designed to compare the survival according to the position of the lymph nodes following radical lymph nodes dissection for stage III colon cancers.
Method: This retrospective study evaluated data collected prospectively at a tertiary teaching hospital with patients who were treated laparoscopic colectomy from December 2009 to December 2014. The nodes were numbered and classified into D1, D2, and D3 groups and compared the short- and long-term outcomes.
Results: Among the 349 patients, D1, D2, and D3 group had 229, 94, and 26 patients respectively. The average harvested lymph nodes were identified 35, 32, and 40, and the metastatic nodes were 2.6, 5, and 9 ($P < 0.001$), which is proportional with the stage. The three groups did not show the difference in 5-year disease free survival, however, D3 group had the poorest rate for overall and cancer specific survivals.
Conclusion: Principal node metastasis showed the lowest overall and cancer specific survival. It is likely to predict the prognosis by depending on the location of metastatic lymph nodes for stage III colon cancers.

P423

Correlation analysis between ascites CEA and risk factors known as predictors of peritoneal metastasis of colorectal cancer

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Aim: The purpose of this study was to evaluate tumour markers in peritoneal ascites as the prediction markers of peritoneal carcinomatosis. Also, previously known risk factors and peritoneal fluid tumour markers level were compared as prognostic markers of peritoneal carcinomatosis.
Method: 558 patients who underwent colorectal cancer operation from January 2006 to November 2014 in St. Mary's Hospital, The Catholic University of Korea were included. Peritoneal fluid tumor markers were analyzed prospectively.
Results: T4 cancer, obstructed tumor, visible peritoneal metastasis, no complete resection, and ascites CEA level above 5 ng/dl had significant correlation with peritoneal metastasis. In hazard ratio analysis about peritoneal metastasis, obstructed tumour (HR 3.390, $P = 0.017$), no complete resection (HR 5.533, $P = 0.000$), and ascites CEA (HR 3.207, $P = 0.015$) had statistically meaningful hazard ratio. About recurrence or distant metastasis, obstructed tumour (HR 1.896, $P = 0.039$), no complete resection (HR 2.034, $P = 0.012$), and ascites CEA (HR 1.826, $P = 0.003$) have meaningful hazard ratio.
Conclusion: Ascites CEA was significantly correlation with peritoneal metastasis, and previously known risk factors of peritoneal metastasis, and had meaningful hazard ratio. Therefore, we conclude that ascites CEA is another risk factor for peritoneal metastasis.

P424

Necessity of genetic evaluation of metachronous metastases of colorectal cancer: Quantitative analysis of genetic discordance between metachronous metastases and radically resected primary colorectal cancers using next-generation sequencing

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Aim: To assess the necessity of genetic evaluation of metachronous metastases and radically resected primary colorectal cancer and to establish more effective therapeutic strategies, we performed a quantitative analysis of genetic discordance between metachronous metastases and radically resected primary colorectal cancers using next-generation sequencing.
Method: We enrolled 34 patients who underwent resection of metachronous metastases between January 2014 and December 2016, at least 6 months after radical resection of primary colorectal cancer, and whose tissue was available for analysis. Tumor samples were analyzed by next-generation sequencing using an Ion AmpliSeq™ Colon and Lung Cancer Research Panel.
Results: The most frequent mutation was in *KRAS* ($n = 9$). The mutant allele frequency (MAF) in metachronous metastases was higher in five cases (difference: mean 26.12%, 9.5 between 58%), and lower in three cases (difference: mean 9.3%, 8 between 10%), compared to each of their primary tumours. In one case, the *KRAS* mutant-type (MAF 22.6%) metachronous metastasis had developed from the *KRAS* wild-type primary tumor.
Conclusion: Quantitative discordance of genetic mutations existed between metachronous metastases and radically resected primary colorectal cancers. For appropriate target therapy in these cases, genetic evaluation of metachronous metastases needs to be considered.

P425

The significance of clinically abnormal pelvic side wall (PSW) nodes on MRI in rectal cancer patients following neoadjuvant chemoradiotherapy

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Aim: This study's aim is to investigate the rate of disease recurrence and overall survival (OS) in rectal cancer patients with clinically abnormal PSW nodes on MRI after neoadjuvant chemoradiotherapy without PSW node dissection.
Method: This is a retrospective review of patients who underwent surgery for rectal cancer between January 2009 and August 2015. Patients with metastatic disease, another pelvic malignancy, previous recurrence from colorectal cancer and synchronous cancer were excluded. Clinically abnormal PSW nodes were defined on pre-treatment MRI as: short axis size ≥ 7 mm/irregular border/heterogeneity. Disease free survival (DFS) rate and OS rate were analysed with Kaplan Meier analysis.
Results: 230 of 358 patients were included in the study. 16 patients (7.0%) had clinically abnormal PSW nodes, all of whom received long course chemoradiotherapy. Worse DFS was noted in patients with clinically abnormal PSW nodes versus patients without (37.5% vs 17.8%, $P = 0.026$). There was no significant difference

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in OS between groups (31.2% vs 18.7%, $P = 0.192$). Of patients in the PSW who recurred, 2 patients (12.5%) developed local recurrence and distant metastasis while 4 patients (25%) developed distant metastasis only.
Conclusion: Rectal cancer patients with clinically abnormal PSW nodes have significantly worse DFS rate despite neoadjuvant chemoradiotherapy.

P426
The significance of clinically abnormal lymph nodes at the circumferential resection margin (CRM) on MRI in rectal cancer patients

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Aim: Threatened CRM (≤1 mm from CRM) by tumour in rectal cancer is a predictor of poorer prognosis. Our aim is to determine whether clinically abnormal nodes threatening the CRM on MRI are a predictor of survival in rectal cancer.
Method: This is a retrospective review of patients who underwent surgery for rectal cancer with MRI between January 2009 and August 2015. Patients with metastatic disease, CRM threatened tumour, another pelvic malignancy, recurrence from colorectal cancer and synchronous cancer were excluded. Clinically abnormal lymph node is defined as size ≥10 mm on short axis/heterogenous appearance/irregular border. Disease free survival (DFS) and overall survival (OS) were analysed with Kaplan Meier analysis.
Results: 202 of the 358 patients were included. 18 patients (8.9%) were found to have threatened CRM by lymph node while 184 patients (91.1%) had unthreatened CRM. 33 patients (17.9%) with unthreatened CRM and 3 patients (16.7%) with threatened CRM by lymph node developed disease recurrence ($P = 0.847$). The OS rate in patients with unthreatened CRM and by lymph node was 18.5% and 16.7% respectively ($P = 0.866$).
Conclusion: Rectal cancer patients with unthreatened CRM have no significant difference in their DFS and OS rates than patients with threatened CRM by lymph node.

P427
Outcomes of surgery for colorectal cancer patients in patients 85 years and older

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Aim: Incidence rates of colorectal cancer (CRC) increase with age, reaching its highest values in patients 85 years and older. The aim was to identify factors associated with early postoperative mortality in these patients.
Method: We performed a retrospective analysis of 120 consecutive patients subjected to curative resection for CRC between 2010 and 2017. A regression analysis was done to determine which factors influenced the early mortality rates.
Results: Seventy patients were male; 52 with right-sided colon-cancer, 35 left-sided lesions and 33 rectal cancer. Major complications occurred in 23 patients (19.2%); early mortality rate was 8.3%. Independent risk factors for early mortality were older age (≥90 years) (HR = 5.33; $P = 0.021$), ASA score ≥3 (HR = 5.99; $P = 0.014$), chronic obstructive pulmonary disease (HR = 8.55; $P = 0.003$), occurrence of postoperative complications (HR = 14.01; $P = 0.000$), postoperative respiratory tract infection (HR = 10.35; $P = 0.001$); postoperative fistula (HR = 12.11; $P = 0.001$), locally advanced tumours (T4) (HR = 5.63, $P = 0.018$). The mean survival time was 47.6 ± 3.8 months. Patients with stage I/II CRC and ASA score of 1/2 had a 5-year survival rate of 64.5%.
Conclusion: Older CRC patients, particularly those with early-stage disease and fewer risk factors have postoperative survival rates that match the life expectancy for people of the same age group.

P428
TaTME for low rectal cancer: short-term outcomes and specimen quality

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Aim: This study shows the short-term clinical outcomes and specimen quality with taTME in one institution.
Method: All consecutive patients with rectal cancer within 0–6 cm of anal verge treated by taTME were prospectively included from October 2013 to November 2017.
Results: A total of 34 patients were analyzed. 76% had neoadjuvant chemoradiotherapy. The Gelpoint was used in all patients with a previous intersphincteric approach in 53% of the patients. In one patient a lesion of the ureter occurred which was corrected intraoperatively after conversion. Another conversion was due to failure of adequate pneumopelvis. Postoperative morbidity was 23.5%, 6 small bowel occlusions, one pelvic abscess and one anastomotic failure all medically treated. The median length of stay was 9 (4–30) days. A complete or near complete TME specimen was delivered in 92.8% (26/28) of the cases and R1 resection in one (3.5%) with positive circumferential and distal margins. The median number of lymph nodes found per specimen was 14. After a median follow-up of 16 months, there was no local recurrence and two (5.9%) have developed hepatic metastases.
Conclusion: This study confirms that taTME appears feasible and facilitating the difficult lower pelvic dissection, with low morbidly rate and with good specimen quality.

P429
Cytoreduction and hyperthermic intra-peritoneal chemotherapy for colorectal peritoneal carcinomatosis: results of the association of oxaliplatine with a closed abdominal technique

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Aim: Assess the oncological results of the combination of oxaliplatin with a closed abdominal hyperthermic intra-peritoneal chemotherapy (HIPEC) for the treatment of peritoneal carcinomatosis (PC) of colorectal origin.
Method: Demographic, pre-, intra- and post-operative data extracted from a prospective registry of consecutive patients undergoing cytoreduction and HIPEC for colorectal PC were analyzed retrospectively.
Results: Between October 2007 and December 2015, 64 patients underwent cytoreduction with HIPEC using oxaliplatin and a closed abdominal technique. The median age was 57.5 years. Sixteen patients (25%) underwent simultaneous liver resection for metastases. The median peritoneal carcinomatosis index (PCI) was 6. Severe morbidity rate was 20% and the mortality was 1.6%. Twenty-nine patients (45.3%) received neoadjuvant chemotherapy and 42 (65.6%) received adjuvant chemotherapy. Forty-six patients (71.9%) developed recurrence, of which only 12 (18.8%) were isolated PC. Five year Overall survival and recurrence-free survival were 43.5% and 16.1%, respectively. A PCI<6 improves overall survival ($P = 0.01$).
Conclusion: Closed abdominal oxaliplatin HIPEC for the treatment of colorectal PC provides acceptable oncologic results. The recurrence rate remains high, mainly due to distant metastases.

P430
Predictors of readmission after beyond total mesorectal excision operations

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Aim: Unplanned readmissions heavily affect the cost of health care and are used as an indicator of performance. Colorectal Surgery readmission rate has been estimated between 6 and 25%, but no clear data are available regarding beyond-TME procedures for CRC. Aim of the study is to identify patients and surgery related factors influencing the 30-day readmission after beyond-TME operations.
Method: Retrospective data were collected from 220 patients who underwent beyond-TME procedures in the Royal Marsden Hospital, between the 2006 and 2017. Odds ratio was used for nominal variables and Student's *t* tests for continuous variables.
Results: The readmission rate was 8.18%. No association was found with BMI>25, ASA, LOS, ITU days, primary or recurrent tumour, metastatic disease or blood transfusions. Not quite statistically significant was found the association with PSW dissection (OR 3.32, $P = 0.054$) and with any re-intervention during the first recovery (OR 2.9, $P = 0.054$). Statistically significant factors were: preoperative stage >IIIb (OR: 4.77, $P = 0.002$), neo-adjuvant therapy (OR: 0.13, $P = 0.0006$), ages over 60 (OR: 7.37, $P = 0.0007$) and any post-operative morbidity (OR: 9.01, $P = 0.004$).
Conclusion: The readmission rate after beyond-TME procedure is influenced by patient related factors as well as post-operative morbidity.

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P431

Thymidine phosphorylase and CD163$^+$macrophages in relation to MSI status in colorectal cancer stage II

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Aim: An evaluation of the gene expression of thymidine phosphorylase (TYMP), an enzyme with several tumour promoting properties, and CD163$^+$, a macrophage specific receptor, as prognostic markers in relation to MSI status in stage II CRC.
Method: Stage II CRC patients, radically resected with relapse ($n = 104$), were matched by stage, differentiation and age to patients with a 5-year relapse free follow-up ($n = 206$). The gene expression was analyzed in snap-frozen tumour tissue (fTYMP, fCD163) and in micro dissected formalin-fixed tumour tissue separated into tumour epithelial cells (tecTYMP, tecCD163$^+$) and stromal cells (sTYMP, sCD163$^+$).
Results: Higher gene expression of TYMP, tecCD163$^+$ and sCD163$^+$ was seen in low, compared to highly differentiated tumours ($P < 0.05$). Only high tecCD163$^+$ correlated with T4 tumours ($P < 0.05$). TYMP and CD163$^+$ did not correlate to recurrence. In MSI-H tumors, low tecTYMP was associated with longer DFS ($P < 0.05$). MSI-H tumours had higher expression of fTYMP, tecTYMP, fCD163$^+$ and sCD163$^+$ than MSI-L/MSS tumours ($P < 0.05$).
Conclusion: The high gene expression of tecCD163$^+$ in T4 tumours may indicate a higher incidence of tumour-associated macrophages nearby the tumour cells. In MSI-H tumours, tecTYMP may be of prognostic value.

P433

Therapy of colorectal neoplasias – are there limits for endoscopic interventions?

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Aim: Evaluation of endoscopic resectability of giant colorectal polyps.
Method: Polyps > 3 cm included in a prospective study. Exclusion criteria: proofed malignancy, fixed polyp Follow-up after 6, 24, 60 months.
Results: EMR of 789 colorectal polyps (mean size 4.8 cm, max 18 cm, 84% flat). The 22 post-interventional bleeding treated endoscopically 2 microperforation during endoscopic were clipped. 4 late perforations on day 2–6 (2× antibiotics, 2× laparoscopy). 33 carcinoma (32× T1, 1×T2): 9 low risk cancers (r0- resection, g1–2, no blood- or lymphovascular invasion) with follow up. 3 of high risk polyp not fit for operation 21 with operation: Endoscopic CR found in 12, 2 remaining intramural cancer and 7 lymph node involvement. Follow up (mean 74 months, 6–144 months): 16 polyp recurrences on first and 2 on second endoscopy, all treated by EMR. After circular mucosectomy ($n = 6$) a stenosis was found. No complication or cancer related mortality.
Conclusion: Endscopic removal of polyps and early cancers are feasible to polyps > 3 cm. Complications are less likely than after operation. Most complications or recurrences are treatable by conservative treatment or endoscopy. EMR primary curation ratio in polyps > 3 cm is 96.7%, endoscopy without mortality. We suggest EMR/ SD as primary treatment modality for non malignant neoplasias without limitations of size.

P434

Assessment of remaining tumour involved lymph nodes with MRI in patients with complete luminal response after neoadjuvant treatment of rectal cancer

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P435

Diagnosis of extranodal tumour deposits on staging MRI scan in rectal cancer; description of an under utilised prognostic marker

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Aim: Extranodal tumour deposits (TD) are a marker of poor prognosis in rectal cancer and are strongly associated with the development of early distant metastases. As such they are a potential indication for neoadjuvant therapy and/or heightened surveillance. TD are not commonly reported by radiologists and the diagnostic criteria have not been formalized. We aim to set out our criteria for diagnosing TD on MRI
Method: TD have been reported at our institution for over 5 years (with prognostic accuracy confirmed on follow up) using the criteria set out below.
Results: TD are defined as nodules of tumour which directly interrupt the course of a mesorectal vein. They are distinguished from EMVI as they are discontinuous from the primary tumour and from involved mesorectal nodes as they cannot be seen separate to the vein on two orthogonal views.
Conclusion: mrTD status is an underutilized prognostic marker which is far superior to nodal status in predicting early distant relapse. Radiologists should routinely report this information as with EMVI. Work is ongoing to directly match MRI and pathology findings in a clinical trial. Future trials are needed to assess mrTD status as in indication for neoadjuvant therapy.

P436

MRI-diagnosed extranodal tumour deposits and extramural venous invasion predict poor prognosis

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Aim: Extranodal tumour deposits (TD) are gaining recognition as poor prognostic marker, possibly more important than nodal status. On MRI they are visible as discontinuous nodules closely related to extramural venous invasion (EMVI) however the prognostic accuracy is currently unknown. We hypothesise that mrEMVI and mrTD are the main predictors of recurrence and survival and may be an indication for neoadjuvant therapy. We aim to assess the effect of mrTD/mrEMVI on survival.
Method: Consecutive patients having MRI rectal cancer staging from 2011–2015 were included. Data was extracted from clinical records. Survival analysis was carried out in SPSS.
Results: Of 362 patients, 74% had mrEMVI and 52% mrTD. Only 3 had mrTD without mrEMVI. 5-year OS was 53% if mrTD/mrEMVI positive vs 84% if negative (HR 3.02 (1.56–5.84) $P = 0.001$). DFS was 34% if mrTD/mrEMVI positive vs 55% if negative (HR 3.09 (1.7499 to 5.4693) $P = <0.001$). Median follow up was 35 months (range 1–82).
Conclusion: mrEMVI and mrTD are associated with poor survival. It is likely they should be an indication for neo-adjuvant therapy, rather than MRI-predicted nodal involvement, which is inaccurate. Evaluation in clinical trials is needed to separate these features and improve pre-operative risk prediction.

P437

MRI-diagnosed extranodal tumour deposits are a better predictor of synchronous metastasis than MRI-predicted lymph node status

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Aim: Extranodal tumour deposits (TD) are gaining recognition as a poor prognostic marker, possibly more important than nodal status. On MRI they are visible as discontinuous nodules related to extramural venous invasion (EMVI) however the prognostic accuracy is currently unknown and they are not commonly reported. Given their access to the circulation we hypothesise they will be predictive of synchronous distant metastases. We aim to assess the relationship between mrTD/mrEMVI and synchronous metastases compared with mrLN status.
Method: Consecutive patients having MRI rectal cancer staging from 2011–2015 were included. Data was extracted from clinical records. Analysis was carried out in Excel and SPSS.
Results: 93/362 (26%) patients presented with synchronous distant metastases (at presentation or within 12 months). 75% of patients had mrTD/mrEMVI at baseline and 46% had mrLN. Odds ratio (OR) of synchronous metastases was 21.75 (5.24–

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90.35) $P = <0.0001$ if mrTD or mrEMVI were present. If mrLN were present at baseline the OR was only 1.86 (1.15–2.99) $P = 0.011$.
Conclusion: mrTD/mrEMVI status is a far better predictor of synchronous metastatic disease than mrLN status. This feature should be reported routinely by radiologists and is a potential indicator for neoadjuvant therapy and/or enhanced staging investigations or follow up imaging.

P438
10 Year regional experience of salvage surgery for anogenital squamous cell carcinoma

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Aim: Review of unit outcomes after salvage surgery for anogenital squamous cell carcinoma (SCC) following regionalisation of anal cancer management.
Method: Data on consecutive patients undergoing salvage surgery for SCC between May 2008 – March 2018 were analysed. Patients treated with local excision were excluded. Survival was calculated using Kaplan-Meier method.
Results: 43 patients underwent 44 potentially curative resections. 37 had chemoradiotherapy prior to salvage surgery, and 7 had prior history of pelvic radiotherapy. 31 (70%) required multivisceral resection and/or nodal dissection. 39 (89%) patients underwent plastic reconstruction of perineal defect. R0 resection was achieved in 40 (91%) patients. Median length of stay was 25 (6–129) days. Morbidity occurred in 31 (70%) patients with 18 (46%) patients requiring re-operation for flap-related complications. 90 day mortality was 2.3%. 5 year survival was 43% with median 40 months. Lack of quality of life data is a limitation.
Conclusion: Salvage surgery for anogenital SCC often requires complex multivisceral resections and wide perineal excision in a prior radiotherapy field necessitating plastic reconstruction of perineum. The multidisciplinary surgical expertise of a regional centre ensures high R0 rates and reasonable 5-year survival. There is a cost of significant morbidity, particularly from flap-related compilations, resulting in lengthy inpatient stay.

P439
A systematic review and meta-analysis of prognostic biomarkers in anal squamous cell carcinoma treated with primary chemoradiotherapy

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Aim: Recent studies suggest that outcomes from head and neck tumours can be stratified according to HPV status and p16 expression, but the evidence for predictive biomarkers in anal squamous cell carcinoma (ASCC) remains limited. This study aimed to determine which biomarkers were associated with locoregional recurrence (LRR) and disease free survival (DFS) in ASCC
Method: A systematic search was undertaken of Medline and Embase databases using validated terms for ASCC, biomarkers and prognosis. The inverse variance method was used to meta-analyse survival outcomes.
Results: 55 unique studies were included (54 cohort studies and one randomized controlled trial) that reported the prognostic effect of 46 biomarkers. HPV status, p16, p53, tumour infiltrating lymphocytes and epidermal growth factor receptor expression were the most frequently assessed biomarkers. HPV positivity and p16 expression had a protective effect on LRR [pooled HR 0.28 (95% CI 0.14–0.53) and HR 0.28 (0.14–0.57), respectively] and DFS [HR 0.35 (0.16–0.76) and HR 0.82 (0.68–0.99), respectively]. p53 overexpression was associated with worse DFS [HR 1.63 (1.33–2.01)].
Conclusion: HPV status, p16 and p53 expression are of prognostic utility in ASCC. Routine testing of ASCC for these biomarkers should be instituted with future prospective studies focusing on response to chemoradiotherapy in addition to survival outcome.

P440
Differential gene expression profile of the aquaporin (AQP) gene family components in rectal cancer

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Aim: In this study, we aimed to investigate the gene expression profile of aquaporins (AQPs) in patients with rectal cancer, along with the effect of radiotherapy.
Method: Gene expression data of AQP1–12A were analyzed from the PubMed GEO database comprising of $n = 22$ rectal cancer specimens ($n = 9$ irradiated, $n = 13$ non-irradiated) and $n = 20$ normal specimens. Genes were considered differentially expressed when their fold change was significantly higher or lower between groups ($P < 0.05$).
Results: We found that the AQP7, 8, 11, 12A genes were significantly under-expressed in rectal cancer samples compared to healthy tissue ($P < 0.05$). However, AQP6,9 were over-expressed in tumor. The expression level of AQP1-5,10 was not significantly different between the two groups. Furthermore, the AQP3 gene was over-expressed in irradiated tumor specimens compared to non-irradiated. The gene expression level of AQP1,2,4-12A was similar between the irradiated and non-irradiated tumor specimens. We found a significant negative correlation between the gene expression level of AQP6-AQP8, AQP7-AQP9, AQP8-AQP9, AQP9-AQP11, AQP9-AQP12A and positive correlation between AQP7-AQP8, AQP8-AQP11, AQP8-AQP12A, AQP11-AQP12A. Further deming regression analysis revealed the equations describing those correlations.
Conclusion: These results are suggestive of the potential utility of certain AQP gene family members as biomarkers for rectal cancer.

P441
Transcriptomic analysis of the tight junction proteins in rectal cancer

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Aim: In this study, we aimed to investigate the gene expression profile of tight junction proteins in patients with rectal cancer, along with the effect of radiotherapy.
Method: Gene expression data of claudins (CLDN1-12,14-18,20), occludin (OCLN), tight junction proteins (TJP1,2) were analyzed from the PubMed GEO database comprising of $n = 22$ rectal cancer specimens ($n = 9$ irradiated, $n = 13$ non-irradiated) and $n = 20$ normal specimens. The gene expression data were log-transformed. Genes were considered differentially expressed when their fold change was significantly higher or lower between groups ($P < 0.05$).
Results: We found that the CLDN3,4,7,8, OCLN genes were significantly under-expressed in rectal cancer samples compared to healthy tissue ($P < 0.05$). However, CLDN1,2 were over-expressed in tumor. The expression level of CLDN5,6,9,10,11,12,14,15,16,17,18,20, TJP1,2 was not significantly different between the two groups. Furthermore, the CLDN1,3,4,7,15,16, OCLN, TJP2 genes were under-expressed in irradiated tumor specimens compared to non-irradiated, while CLDN5,20 were over-expressed.
Conclusion: These results are suggestive of the potential utility of certain tight junction proteins as biomarkers for rectal cancer. Further investigation of the role of these proteins in the pathogenesis of rectal cancer is necessary.

P442
Prognosis of patients with obstructive colon cancer : multivariate analysis from a series of 2325 patients

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Aim: Patients with obstructive colon cancer (OCC) have a poorer prognosis than patients with uncomplicated cancer. The aim of this study was to identify prognostic factors for overall survival (OS) and disease-free survival (DFS) in patients with OCC.
Method: From 2000–2015, 2325 patients were treated for OCC (58 centers). Univariate and multivariate models for survival analysis were computed using Cox proportional hazards regression.
Results: Lymph node involvement was observed in 61% of patients and 35% had metastatic disease. Adjuvant chemotherapy was given to 51% of patients. Median follow-up was 13 months. During follow-up, 33% of patients died, and 57% of the non-metastatic patients were alive without disease. In multivariate analysis, age >75, ASA score ≥3, ECOG performance status ≥3, right-sided tumors, synchronous metastases and no adjuvant chemotherapy were independent predictors of decreased OS. Age >75, ASA score ≥3, right-sided tumors, stage III tumors, presence of lymphovascular or perineural invasion, <12 lymph nodes examined and no adjuvant chemotherapy were independent predictors of decreased DFS.

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Conclusion: Management of patients with OCC should consider pejorative prognostic factors related to the patient (age, comorbidities) and tumor. The strategy including diverting stoma followed by neoadjuvant chemotherapy could be proposed, particularly in patients with right-sided tumor.

P443

Management of obstructive colon cancer surgery in the oldest old: results of a multicentre study

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Aim: To describe management of obstructive colon cancer (OCC) in the oldest old (>85 years) and to report short- and long-term outcomes.
Method: From 2000–2015, 2325 patients were treated for OCC (58 centers). Patients with supportive care, those with unknown date of birth and those for whom the tumor location was not specified were excluded. Three age groups were defined: <75 years, 75–85 years and >85 years.
Results: There were 2294 patients. Elderly patients had more right-sided tumors (31% *vs* 39% *vs* 41%, $P < 0.0001$). The type of surgery performed was identical. However, absence of tumor resection (3% *vs* 7% *vs* 12%, $P < 0.0001$) and risk of definitive stoma increased with age (26% *vs* 32% *vs* 37%, $P < 0.0001$). Postoperative mortality and morbidity were significantly higher in elderly patients, but not surgical morbidity. In patients with resected tumor, elderly patients had less metastatic disease (39% *vs* 34% vs 27%, $P < 0.0001$). Five-year overall survival was lower in elderly patients (57% *vs* 46% vs 28%, $P < 0.0001$), but not relative survival (40% *vs* 45% *vs* 39%, $P = 0.09$).
Conclusion: This study suggests that a curative management should be applied in patients with OCC, regardless of age. Despite lower postoperative results, elderly patients maintain satisfactory long-term outcomes.

P444

Postoperative mortality of emergency surgery for obstructive colon cancer: multivariate analysis from a series of 2000 patients and proposal of a specific score

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Aim: Emergency surgery is a recognized factor of postoperative mortality in colorectal surgery. The purpose of this study was to define risk factors for postoperative mortality in patients undergoing emergency surgery for obstructive colon cancer (OCC) and to propose a specific score.
Method: From 2000–2015, 2325 patients were treated for OCC (58 centers). Of these, 2000 underwent surgery. Patients treated with colonic stent and those who received supportive care were excluded. Postoperative mortality was defined as in-hospital mortality. A multivariate analysis was performed for variables with *P*-value <0.10 in univariate analysis.
Results: Postoperative mortality rate was 8.6%. In univariate analysis, significant factors were: ASA score ≥3, pulmonary, neurologic and liver comorbidities, malnutrition, age >75 years, hemodynamic failure, tumor location, invasion of neighboring organ, colonic ischemia, peritonitis and intraoperative complication. Multivariate analysis found 4 independent factors: age >75 years (OR = 2.20, $P = 0.0004$), pulmonary comorbidity (OR = 1.95, $P = 0.0063$), ASA score ≥3 (OR = 1.97, $P = 0.0023$) and hemodynamic failure (OR = 3.49, $P = 0.0003$). Risk of death was: 2.3% (0 factor); 6.8% (1 factor); 15.3% (2 factors); 26.7% (3 factors) and 44.4% (4 factors).
Conclusion: Postoperative mortality after emergency surgery for OCC is correlated with age, ASA score, pulmonary comorbidity and hemodynamic failure, with a specific score ranging from 0–4.

P445

Colorectal cancer in patients under 50: a retrospective multicenter study on behalf of Y-sico–preliminary results

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Aim: CRC in patients under 50 years can be distinguished in hereditary and sporadic forms. The vast majority of patients with CRC have sporadic disease. We want to evaluate if these cases have a different oncological behavior than colorectal cancer in elderly.
Method: Multicenter international retrospective study comparing patients <50 years with patients >50 years stratified by TNM classification.
Results: Nowadays we have enrolled 2925 patients with colorectal cancer operated in the last 10 years. 338 (11%) are young patients: 233 with colon cancer and 105 with rectal cancer. Mean follow up is 42 months. In this series, we have noticed a higher rate of T4 in patient <50 years (27% vs 12.4% $P = 0.000$) and a higher rate of lymph node metastases (N+ 59.4% vs 39.5%, P 0.03) and distant metastases (M+20.2% vs 17.7%, p0.000). However, the recurrence free survival and the overall survival were significantly better in group under 50 years. (respectively 25.94 months old vs 41.22 young, P 0.03 and 14.76 months old vs 21.98 young, P 0.01).
Conclusion: In our series young patients with sporadic colorectal cancer seem to have more advanced disease, especially patients with age between 20 and 40 years.

P446

Robotic pelvic multiorgan resection in 23 patients with rectal cancer: analysis in a specialized robotic colorectal surgery center

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Aim: the present study evaluates oncological viability and operative safety of surgical robot for pelvic multiorgan resection in rectal cancer.
Method: an observational and descriptive study was performed to analyze the surgical, perioperative and oncological results of 23 patients undergoing robotic pelvic multiorgan resection in rectal cancer.
Result: the most frequent location of tumor was in the lower rectum ($n = 14$, 61%). In 19 cases neoadjuvant therapy was administered. The median BMI was 20.7 (13.3) kg / m2. The vaginal wall 8 (34%) and the prostate 5 (21%) were the structures most frequently resected in an en bloc fashion. No cases conversion to either laparoscopy or open surgery was performed. The median operative time was 435 (575) min. There was 1 case (4%) of postoperative complication Clavien IIIb. The median hospital stay was 14 (67) days. The median lymph nodes examined were 26 (50). The circumferential margin was found affected in 2 (8%) cases. The locoregional recurrence rate was 13%. The median follow-up is 16 (107) months with a 91% survival.

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Conclusion: robotic approach is a safe and feasible alternative to open procedure when a multiorgan resection is needed in rectal cancer patient, with providing acceptable operative and oncologic outcomes.

P447
Transanal abdominoperineal resection for recurrent rectal cancer by two-teams approach

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Aim: The transanal approach for rectal pathologies has been spreading over the last few years, mainly for low anterior resection. Here we present a transanal abdominoperineal resection video for recurrent rectal cancer.
Method: A 73-year-old male initially presented with a cT4N1 at 3 cm from the anal verge, ypT3N0 after a transanal intersphincteric resection (ypT3N0) with no adjuvant treatment. Three years later, a positive perianal nodule below the anastomosis was detected. An abdominoperineal resection by a two-team approach (Cecil approach) was then indicated.
Results: Anus is closed, perianal skin is scored circumferentially, and a purse-string is created along the skin border. A plastic flexible platform is placed and the purse-string is tied around it. Transanal dissection progresses cephalad under the supervision of the transabdominal team. Specimen is extracted transanally and a definitive colostomy is created. Operative time was 150 min. Patient was discharged on 4th post-operative day. Final pathology was a 1 cm positive nodule at the level of the anastomosis.
Conclusion: In conclusion, the transanal approach for abdominoperineal resection is a safe and feasible technique in our experience. The two-teams approach offers an excellent tool in order to safely resect the rectum.

P448
Primary tumour sidedness is important prognostic factors in patients with colorectal peritoneal carcinomatosis

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Aim: Purpose of this study is to assess whether the tumour sidedness is the prognostic factor or not in colorectal peritoneal carcinomatosis (CPC).
Method: 153 primary CPC treated at Wakayama Medical University Hospital (WMUH) and its teaching hospital between 1998 to 2007 (early period) and 36 CPC treated at WMUH between 2008 to 2014 (late period) were analyzed. 1. Analysis of characteristics of tumour sidedness (right or left), 2. Analysis of the prognostic impact of modern systemic chemotherapy.
Results: 1. Diffused CPC was more frequent in right side ($P = 0.062$), elderly patients were more common in right side ($P = 0.039$), performance of postoperative chemotherapy was less frequent in right side ($P = 0.038$) and median survival time (MST) was significantly shorter in right (10 months vs 16 months, $P = 0.013$). When we focused on macroscopically complete resected cases, MST was significantly longer in left side compared to right side (73 months vs 24 months, $P = 0.011$). In late period patients, MST was improved in left side, however, there was no improvement in right side.
Conclusion: Complete resection of CPC was most important. Recent chemotherapy improves survival rate even in left sided CPC. Sidedness may be useful marker in addition to the several biomarkers in CPC.

P449
Influence of needlescopic surgery on long-term prognosis after laparoscopic colon cancer surgery

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Aim: Needlescoic Surgery (NS) for colon cancer have been performed and reported in our institution as a further less invasive technique. (Int J Colorectal Dis 2014) In this study, we investigated long-term outcomes of NS comparing to the conventional laparoscopic surgery (CS).
Method: 1122 patients without distant metastasis to whom laparoscopic surgery (NS; 241, CS; 881) performed between 2011 and 2014.were retrospectively analyzed. NS is defined a technique of mainly using 3 mm and one 5 mm trocars with small incision on the umbilicus.
Results: There was no significant difference of 5-year recurrence rate/5-year total mortality rate. (NS: 10.0%/5.4% vs CS: 10.3%/3.5%, $P = 0.86/0.23$). In multivariate analysis, NS was not an independent prognostic factor. However, in cases with a tumor diameter of 7 cm or more, prognosis of the NS were significantly worse than those of CS. (NS: 21.1%/15.8% vs CS: 8.5%/1.7%, $P = 0.03/0.02$) There was no significant difference of prognosis classified other tumor status and patient characteristics between the 2 groups.
Conclusion: Long-term outcomes of the NS to colon cancer were favorable to CS meaning becoming another less invasive surgery. However, it may not be useful for large tumors.

P450
Obesity affected the number of lymph node retrieval

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Aim: In obese patients, it is difficult to find out lymph node retrieval due to excessive fat. The objective of this study is to clarify the relationship between obesity and lymph node retrieval in Colon cancer patients.
Method: Patient inclusion criteria were as follows; curatively resected colon cancer between 2006 and 2013, their feeding artery ligated at its origin. Body mass index (BMI) was calculated as obesity index and patients with BMI>25 kg/m^2 were defined with obesity. The correlation between the number of lymph node harvest and BMI was evaluated.
Results: Among 320 patients, 175 were right-sided colon cancer and 145 were left-sided colon cancer. The mean number of lymph node retrieval was 24.0 ± 14.0 in obese population whereas they was 28.6 ± 14.8 in normal population ($P = 0.0073$). Considering tumor location, this relationship was more evident in left-sided colon (19.2 ± 10.0 vs 24.8 ± 12.3 $P = 0.018$) than in right-sided colon (28.7 ± 15.5 vs 32.2 ± 16.2 $P = 0.149$).
Conclusion: Obesity significantly affected the number of lymph node retrieval. For these patients, further attention should be paid to avoid underestimation of tumor staging.

P451
The significance of arterial bifurcation position when operating splenic flexure cancer. A 3D analysis of the vascular anatomy

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Aim: To determine the bifurcations of the middle colic artery (MCA) and the inferior mesenteric artery (IMA) position in relation to known landmarks.
Method: Position of MCA and IMA bifurcations and difference in level of vessel origins were analyzed on 3DCT vascular anatomy reconstructions. Distances from origin to bifurcation and calibers were measured. The position of the MCA bifurcation was determined towards the underlying SMA, SMV or to the pancreatic head. Accessory vessels were noted.
Results: 30 3DCT reconstructions of patients (12 male, age: 67.2+7.9 years), operated with right colectomy were analyzed. Distance to bifurcation: MCA 3.9+2.1; IMA 3.6+0.9 cm.Distance in level between MCA and IMA origin: 7.5+1.1 mm.The MCA bifurcation was positioned anterior to the superior mesenteric artery in 3 (10%), superior mesenteric vein in 16 (53%) and pancreatic head in 11 (37%) patients. An accessory MCA running to the left flexure was found in 10 (33.3%). Left flexure irrigation came from the MCA in 5 (17%), left colic artery in 13 (43%) and both in 12 (20%).
Conclusion: the position of arterial bifurcations should dictate surgical strategy for lymphadenectomy. A 3D vascular anatomy reconstruction can provide precise data on bifurcation location.The difference in level between MCA and IMA origins represents a challenge for lymphadenectomy.

P452
How to decrease time to colorectal cancer diagnosis? – The results of a dedicated patient pathway

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Aim: Increased time to diagnosis (TTD) of colorectal cancer is known to be associated with poorer survival outcomes. The aim of the study was to determine whether a dedicated pathway (DP) for the diagnosis of colorectal cancer could decrease TTD.
Method: Between May 2016 and December 2017, all patients calling the gastroenterology department for a positive colorectal cancer screening test were prospectively included. In the DP, gastroenterology and pre-anesthesia appointments and the colonoscopy were planned during the 3 weeks following the phone call. TTD was defined as time from the first phone call to diagnosis. TTD was compared between the DP and the traditional pathway (TP).

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Results: A total of 142 patients (89 males, mean age: 63 ± 8 years) called for a positive screening test, including 111 patients in the DP and 31 patients in the TP. Groups were similar in terms of age, gender and comorbidities. TTD was 28 days and 86 days respectively ($P < 0.001$). Polyp and cancer detection rates did not differ between groups (65.8% vs 68.8% diagnosis of benign polyp(s), $P = 0.92$; 9.9% vs 9.3% diagnosis of cancer, $P = 0.93$).
Conclusion: A DP for colorectal cancer diagnosis decreased TTD in patients with positive colorectal cancer screening test.

P453
Rates of obesity in colorectal cancer patients from a deprived community

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Aim: The national prevalance of obesity has increased from 15% to 26% in the last decade. We aimed to investigate whether this had impacted our patients with right sided colon cancer, who come from a community that includes areas amongst the 10% most health deprived in the country.
Method: Review of prospectively maintained cancer database, additional retrospective medical note review and comparison against the latest national obesity statistics.
Results: Forty-four patients underwent elective right hemicolectomy for right-sided cancer between 2014 and 2017 (18 male, mean body mass index (BMI) 27.4). Obesity was seen in 34% of patients (national prevalence 26%) and 2 patients (5%) were morbidly obese (BMI>40). Eleven out of 14 men (79%) age over 45 were overweight or obese. Six patients (14%) had palpable abdominal mass. There was no difference in detection rate of abdominal mass ($P = 0.46$) or performance status ($P = 0.36$) between those who were obese or not.
Conclusion: In a community with health-deprived areas, obesity is highly prevalent even in cancer patients. Although obesity did not impact on detection rate of abdominal mass or performance status, it may pose various challenges during perioperative care of patients.

P454
Prognosticators, patterns and outcome of disease recurrence after curative rectal cancer resection

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Aim: Local (LR) and distant recurrences (DR) after curative rectal cancer resection are difficult to treat and often fatal. This study aimed to evaluate incidence, determine prognosticators and assess outcomes in recurrence.
Method: Retrospective analysis of 100 consecutive curative rectal cancer resections over from 2007–2012 in a district general hospital.
Results: 4% LR (equally axial and lateral) 26% DR, median age at diagnosis 61:70 (LR:DR). Median time to recurrence from resection 1.8 years for both. Median survival 8:15 months (LR:DR). No correlation between operative method and recurrence. All LR had neoadjuvant chemoradiotherapy. 75% LR had EMVI positivity, 0% CRM positivity and no correlation with Dukes' stage. The 25% LR had mucinous tumours. 50% DR had EMVI positivity, 15% CRM positivity, 69% Dukes C or above. Lung metastases accounted for 46% DR.
Conclusion: This study demonstrates satisfactory recurrence rates as in most series. Factors significantly affecting LR were EMVI and younger age. Although time to recurrence equal for LR and DR, median survival was twice as high after DR. Negative CRM and neoadjuvant treatment did not influence LR in this series emphasising importance of tumour biology. Results have limitations as small patient subset, prompting importance of larger cohort analysis.

P455
Surgical management for obstructive right-sided colon cancer at a national level results of a multicentre study of the French Surgical Association in 776 patients

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Aim: To report on postoperative results after surgery for obstructive right colon cancer (ORCC) and to identify risk factors associated with worse outcomes
Method: All patients operated on for ORCC from 2000 to 2015 were retrospectively included.
Results: 776 patients were analyzed, including primary tumor resection ($n = 716$) with primary anastomosis ($n = 582$), primary anastomosis with loop ileostomy ($n = 21$), resection with double end stoma ($n = 113$), defunctioning stoma without resection ($n = 48$) and ileocolic by-pass ($n = 12$). Postoperative mortality, morbidity and anastomotic leak rates were 10%, 51% and 10% respectively. At multivariate analysis, age >70, ASA score >3 and hemodynamic instability were predictors of postoperative mortality whereas ASA score >3, hemodynamic instability and intraoperative complications were predictors of severe morbidity. No factor was correlated to anastomotic leak. After a median follow-up of 16 months 8% of patients were alive with a permanent stoma. Five-year overall, disease-free and cancer-specific survivals were 42%, 42% and 62%. At multivariate analysis, peritonitis, synchronous metastases and chemotherapy were predictors of overall survival.
Conclusion: Emergency surgery for ORCC is associated with high mortality and morbidity. Although 75% of patients with ORCC can be managed with resection and primary anastomosis, a stage surgical management may represent a safe option for high-risk patients.

P456
Transperineal retropubic approach in total pelvic exenteration for advanced and recurrent colorectal and anal cancer involving the penile base: technique and outcomes

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Aim: Complete pathological resection of locally advanced and recurrent anorectal cancer is considered the most important determinant of survival outcome. Involvement of the retropubic space and penile base pose challenges due to the potential for margin involvement and blood loss from the dorsal venous plexus.
Method: We describe a new transperineal approach to excision of anterior compartment organs involved or threatened by cancer facilitating exposure of the bulbar urethra and the deep penile vein caudal to the retropubic space and penile base.
Results: 10 male patients with tumour extension into the penile base were identified (2 with recurrent anal cancer, 6 with locally advanced primary rectal cancer and 2 with recurrent rectal cancer). All patients underwent exenterative surgery with R0 excision of the penile base utilising the transperineal approach. No local recurrence developed after a median follow up period of 15 months.
Conclusion: The transperineal approach to the penile base and retropubic space allows for high rates of R0 resection margin status with direct visualisation of the dorsal venous plexus, thereby minimising blood loss. This technique is the preferred approach to excision of cancers threatening and involving the penile base and also for most male patients requiring total pelvic exenteration.

P457
An assessment of the accuracy of CT staging of colonic neoplasia in a district general hospital in the United Kingdom

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Aim: CT staging of colonic neoplasia is the standard investigation and we wished to ascertain the accuracy of pre-operative CT staging compared to histological results in our unit.
Method: Patients undergoing colonic resection over a 1 year period were identified and their pre-operative staging was compared to histological results. We separated Tx/1-2 tumours from T3-4 tumours and N1-2 from N0 in our analysis as this has an impact on counselling the patient for potential adjuvant treatment.
Results: Ninety-five patients undergoing colonic resection for cancer were staged with CT during the study period. On CT thirteen patients had Tx staging, four T1 tumours (accuracy 100% compared to histology), ten T2 (accuracy 50%), thirty-nine T3 (accuracy 76.9%) and twenty-nine T4 (accuracy 75.8%). Combining T3-4 patients and comparing to T1-2 provided an accuracy of 84.8% with sensitivity of 91%, specificity of 68%, positive predictive value (PPV) of 88.4% and negative predictive value (NPV) of 73.9%. Assessing N1-2 compared to N0 showed sensitivity 82.5%, specificity 75%, PPV 71.7%, NPV 84.8% and accuracy of 78.2%.
Conclusion: The results from our unit are comparable to larger studies. CT staging was able to provide us with a reliable tool to differentiate early from more advanced tumours.

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P458

Laparoscopic approach is equal in short-term oncosurgical markers and provides potential long-term oncological benefit comparing to open surgery in rectal cancer patients

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Aim: Single-center retrospectively analysis providing data to verify the safety and potential benefit of laparoscopic rectal surgery compared to open procedure in the National Institute of Oncology, in Hungary.
Method: 394 consecutive rectal cancer patient's data were analyzed retrospectively operated with curative intent between 2013 and 2017 (cM0). 171 laparoscopic operation (LP) were compared to 223 open procedures (OP). Short-term onco-surgical quality measures, as circumferential resection margin (CRM), distal resection margin (DRM), number of harvested lymph nodes (LN), tumor perforation rate (PR), quality of total mesorectal excisio (TME) were compared with Mann-Whitney and multiparametric ANOVA-test. QoL measures and 3-years long OSS, DSF and local recurrence (LR) were also compared.
Results: LP were associated with longer operation time (150 min vs 120) and shorter hospital stay (7 *vs* 9 days). There were no differences between harvested lymph nodes (15/14), completeness of TME (78%/83%) CRM positivness (4%/7%) and negative DRM (0%/0.5%), Clavien-Dindo complications (7.5%/8.3%), anastomotic leaks (6%/8.8%) and QoL. LR was 2.12%. OS and DFS is favorable in LR group compared to OP.
Conclusion: Laparoscopic technique provides equal oncological safety and radicality in rectal cancer patients with potential long-term oncological benefit and equal long-term quality of life.

P459

What are the factors that influence a patient's decision on whether to undergo treatment/resection for colonic cancer? A qualitative analysis

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Aim: Given the increasing pick of malignant polyp cancers a number of patients are face with the dilemma to undergo colorectal resection for the risk of residual disease. A significant number of patients opt to undergo a conservative approach. This study aims to explore factors effecting patient decision making with regard to undergoing treatment for colorectal cancer.
Method: A systematic pubmed search was performed. Studies were included in they were English Language, included treatment of patients with colorectal disease and included a patient perspective of factors influencing their decision to undergo treatment. A thematic approach was used to analyse reported patient perspectives with respect to factors influencing their decision to pursue a conservative vs active treatment
Results: 3 qualitative papers matched the inclusion criteria. Three key themes were highlighted in each group. Conservative treatment: Time, anxiety and transport difficulties. Active treatment: Trust in physician, education and understanding of treatment / complications. Trust in physician, physician guidance was identified as a key factor in all 3 studies.
Conclusion: The key theme identified as influencing a patient's decision to undergo cancer treatment was physician opinion. This study highlights the importance of physician recommendation despite the growing information available to patient.

P460

Role of magnetic pelvic resonance in rectal cáncer after chemoradiotherapy

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Aim: To analyze the results of nuclear magnetic resonance after chemoradiotherapy in locally advanced rectal cancer.
Method: Retrospective observational study based on a serie of 73 patients operated for locally advanced rectal cancer treated with preoperative chemoradiotherapy between January 2009 and December 2014. The patients were operated on at our center 8 weeks after completing the treatment. A pelvic magnetic nuclear resonance was performed as a tumor staging protocol and another after completing the neoadjuvant treatment.
Results: In 31 patients (42.5%) there was a decrease in tumor size. Complete radiological response was seen in 9 patients (12.3%). Complete anatomopathological response was found in 14 cases (19.1%). In 28 cases (38.3%) an overstaging of the tumor size (T) seen by MRI was observed. In 23 (31.5%) lymph node involvement was reported, which was not confirmed in the anatomopathological study. In 16 patients (22%), MRI did not correctly identify early stages of the disease (T0-T2).
Conclusion: The MRI presents only a moderate precision to predict tumor staging in patients who have received a long cycle of preoperative chemoradiotherapy. Most of the mistakes are related to a marked fibrosis of the rectal wall and of the tumor itself caused by radiotherapy.

P461

Early recal adenocarcinoma T1. A new pathological classification after Transanal Endoscopic Microsurgery based in the residual normal submucosa

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Aim: Rectal adenocarcinoma T1treatment is discussed between local exeresis or total excision of mesorectum (ETM). The most important parameter related to this factor is the degree of submucosal invasion. Current classifications are inaccurate. Objective: present a new classification of submucosal invasion through the measurement of healthy residual submucosa (Sm_r) .
Method: Observational study, prospective data collection. T1 adenocarcinoma operated on by transanal endoscopic microsurgery (TEM). Measures: Submucosal invasion (measuring healthy Sm_r), morphological forms, presence of muscular mucosae, muscular propia, normal submucosae adjacent/separate to lesion. Compared with Haggitt, Kickuchi, Kitajima and Ueno classifications.
Results: Eighty T1 operated on by TEM. Polipoid formation: 17 (21.3%). Resection in block: 77 (96.3%). Presence of muscular mucosa: 28 (35%), muscular propia: 77 (96.3%) ($P < 0.001$). Submucosal measurement adjacent/separate to lesion: 7.130 ± 3.380 μm/2.350 ± 1.1650 μm ($P < 0.001$). Remaining healthy submucosal invasion: 2.343 ± 1.869 μm. Invasion by methods of Kitajima and our Method 67.6% ± 21% and 67.8% ± 21.1%. Match with Kikuchi classification moderate (Kappa 0.58), very good with Kitajima-Kudo classification (Kappa 0.87).
Conclusion: A new method of measuring invasion of the submucosa is described in T1. Allows precise measure and make decision between local treatment or a radical ETM operation.

P462

Signet cell colorectal cancer signals very poor overall survival

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Aim: Signet cell colorectal cancer (SCCRC) is associated with poor survival but reasons remain unclear.
Method: SCCRC patients were identified in a prospective surgical pathology database (1998–2016). Stage, extramural vascular invasion, apical node status, discontinuous tumour nodules, MMR and BRAF status, overall survival (OS) were compared to non-SCCRC patients.
Results: There were 4183 patients and 41 (1%) SCCRC patients. No sex, age differences. SCCRC patients had advanced disease (ST III/IV: 80.2% vs 48.1%, $P < .001$), higher lymphnode ratio (.42 vs .22, $P < .001$), positive apical nodes (56% vs 22%, $P < .001$), discontinuous tumour nodules (57.2% vs 21%, $P < .001$), extramural invasion (33% vs 17.2%, $P = .004$), and often MMR deficient +/- BRAF mutation (53% vs 19.6%, $P < .001$). SCCRC patients had poor overall survival (22.3% vs 67.2%, $P < .001$), St I and II (43.7% vs 77.8%) and St III and IV (16% vs 53.8%)
Conclusion: SCCRC patients are rare and clinical outcome, even in Stages I and II, is poor due to more advanced tumour stage at presentation and negative histological features. A new finding is that paradoxically SCCRC patients often appear to be MMR deficient/ BRAF mutated, features usually associated with improved outcomes. This finding needs further investigation.

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P463
Disease free survival in malignant colonic polyps – a long term follow up

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Aim: BRAF mutation and MMR deficiency are usually associated with good prognosis in colorectal cancer. However their association with 5 year disease free survival (DFS) in malignant colonic polyps is unclear.
Method: We searched a multi-centre centralized pathology service database in Sydney, Australia for a 5 year period from 2010 to 2015, for polypectomies at colonoscopy that contained adenocarcinoma. To our knowledge, this is the largest series to date that reports 5 year DFS and MMR status in malignant colonic polyps.
Results: 110 malignant colonic polyps were identified, of which 44 patients underwent subsequent colectomy. Among these 6 patients had nodal disease and 4 had residual mural disease only, for a 23% positive resection rate. 12% of malignant polyps were BRAF mutant (16% of those patients resected), and 17% were MMR deficient (16% of those patients resected). There was no difference between the groups with BRAF and MMR markers (MLH1, MSH2, MSH6, PMS2). Of those patients with lymph node metastasis, 17% were BRAF mutant and 8% were MMR deficient. The overall 5 year DFS was 96.3%.
Conclusion: BRAF and MMR status does not affect 5 yr DFS in patients with malignant colonic polyps.

P464
Colorectal surgery in octogenarians . . .is there a threshold!

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Aim: To assess outcomes after colorectal resections in patients above 80 years of age.
Method: Retrospective analysis from 2005–2015. Data included patient demographics, ASA status, comorbidities, staging, operative procedure and postoperative complications.
Results: 174 patients (79 males and 95 females) with a median age of 88 (range 80–94). ASA status was grade 2 in 83 patients and grade 3 in 91 patients. 129 (77%) of resections were open procedures and the remaining 39 (23%) were laparoscopic. Overall anastomotic leak rate was 3% (6/174), 4 in open surgery (3 anterior resection, 1 right hemicolectomy) and 2 in laparoscopic surgery (1 anterior resection, 1 right hemicolectomy). Other complications included chest infections (4%), cardiac events (7%), wound infection (6%) and postoperative bleeding (3%). 30-day mortality was 4% (6 in open surgery with 5 of them with ASA of 3 and with >3 comorbidities and 1 in laparoscopic group with ASA score of 3 and with >3 comorbidities).
Conclusion: Colorectal resections can be done with acceptable morbidity and mortality in this select group of patients. ASA grade and number of comorbidities seem to be determining factors of the outcome.

P465
The surgical and oncological safety of laparoscopic colectomy in colon cancer patient with bulky tumor

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Aim: The surgical and oncological safety of laparoscopic colectomy for colon cancer patients with bulky tumors has never been evaluated.
Method: Bulky tumor was defined as tumor larger than 8 cm, and 112 patients with stage II/III colon cancer with bulky tumors who underwent curative resection from July 2004 to July 2014 were included. Outcomes were compared between patients undergoing resection by laparoscopic colectomy (n = 61) and by laparotomy (n = 51).
Results: Operation time was significantly longer (219 *vs* 169 min, $P < 0.001$), but estimated blood loss was significantly smaller (30 *vs* 55 ml, $P = 0.0049$) in the laparoscopic group than in the open group. One (1.6%) patient needed conversion to laparotomy. The period of hospitalization was significantly shorter (10 *vs* 13 days, $P < 0.001$) in the laparoscopic group than in the open group. Five-year cancer-specific survival and relapse-free survival by pathological stage were similar for the two groups, and no patient developed local recurrence in either group.
Conclusion: Laparoscopic colectomy for colon cancer patients with bulky tumors was feasible because of its short-term benefits, oncological safety, and the equivalence of its long-term outcomes compared with laparotomy.

P466
The impact of underweight status on clinical and oncological outcomes after curative surgery for Stage I-III colorectal cancer

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Aim: This study evaluated the impact of preoperative underweight status on short- and long-term outcomes in colorectal cancer (CRC) patients after curative resection.
Method: This study included 553 consecutive patients who underwent curative resection for CRC from 2007 to 2012. Patients were divided into two groups according to the WHO classification:underweight group (BMI<18.5 kg/m^2, n = 75) and non-underweight group (BMI≥18.5 kg/m^2, n = 478). Clinicopathological features and prognosis were compared between two groups.
Result: Underweight status had no influence on perioperative complications and duration of hospitalization. The 5-year overall survival (OS) was 77.4% in underweight group and 86.5% in non-underweight group (log-rank: $P = 0.026$). In each stage, the OS was significantly poor in underweight group than in non-underweight group in stageI (79.1%vs93.8%, log-rank: $P = 0.009$), tended to be poorer in stageII (75.0%vs88.1%, log-rank: $P = 0.055$), although there was no significant difference in stageIII ($P = 0.736$). The disease-specific survival had no difference between two groups in each stage. The Cox regression analysis revealed that underweight status was one of the independent prognostic factors of OS in stageI (HR:4.86.95% CI:1.31–14.9, $P = 0.020$).
Conclusion: Underweight status might be one of the promising predictors of a worse prognosis, and also would be a risk for non-cancer-specific death especially in early stage of CRC patients.

P467
Clinicopathologic analysis of lateral margin of rectal cancer with whole-mount section

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Aim: Sufficient lateral margin is a significant prognostic factor in rectal cancer. Whole-mount section can provide exact lateral resection margin (CRM) without distorsion. Taking advantage of whole-mount section, we analyze clinicopathologic results according to CRM measured by whole-mount section.
Method: Medical records of 243 patients who had radical operation for rectal cancer from 2005 to 2015 were reviewed retrospectively. Total 164 patients with T3 cancer were included. The pathologic results were re-reviewed by single pathologist.
Results: To find out proper cut-off value for survival, we analyzed with 1 mm intervals from 1 mm to 20 mm and there was no significant cut-off value for survival except 1 mm ($P < 0.001$). The CRM≤1 mm group (n = 18) had significantly more male (16 (88.89%) *vs* 91 (62.33%), $P = 0.033$) and upper rectal cancer (9 (50%) *vs* 50 (34.25%), $P = 0.022$). Other demographic and clinicopathologic factors did not significantly different. The CRM≤1 mm group showed significantly poorer outcome. On multivariate analysis, risk factor for poor survival outcome revealed as CRM≤1 mm, female, old age, poor differentiation and presence of micrometastasis.
Conclusion: Whole-mount section is important and meaningful to measure precise lateral resection margin. In this study, it is safe to secure sufficient lateral margin of at least 1 mm.

P468
Therapeutic strategy for elderly patients with colorectal cancer

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Aim: The aim of the study is to determine the management and outcomes of surgical resection and adjuvant chemotherapy for elderly patients with colorectal cancer.
Method: This study is retrospective cohort study. Patients were divided into 2 groups according to their age at operation; elderly group (EG, ≥80 years) and younger group (YG, ≤79 years). Clinical characteristics and short and long-term outcomes were compared between the EG and YG. We performed a retrospective analysis of 1144 patients with colorectal cancer treated surgically at our institution between 2008 and 2016.
Results: The EG had more comorbidities and a worse performance status. The EG tended to have right-sided, larger, and more advanced cancer. The short-term outcome in the EG was acceptable and comparable to the YG. The EG tended to have a smaller number of dissected lymph nodes and were less likely to be prescribed adjuvant chemotherapy, potentially leading to a poorer overall and relapse-free survival.

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Conclusion: Surgical resection for elderly patients with colorectal cancer was asafe and acceptable approach. However, oncological long-term outcomes stillneed to be improved. The range of lymph node dissection and indication for chemotherapy might need to be further considered in the EG to improve long term outcomes.

P469

Increasing incidence and advanced stage of presentation of colorectal cancer in the under 50s: improving awareness and lowering the age of screening is crucial

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Aim: To determine the incidence, stage of presentation and treatment outcome in patients with colorectal cancer (CRC) under the age of 50 years.
Method: Between January 2006 and December 2016, data were collected prospectively on all patients under the age of 50 years who had a diagnosis of CRC in central Scotland. Patients' sociodemographic factors, tumour stage at presentation, treatment and survival were recorded.
Results: 2078 patients were diagnosed with CRC, of whom 88 (4.23%) were between 20 and 49 years old. From 2006 to 2008, 548 patients had CRC, of whom 18 patients (3.28%) were under 50, compared to 33 patients out of 551 (5.99%) diagnosed between 2014 to 2016. Rectal cancers accounted for 40.9%. 36.3% of this patient group had Duke C and 25% had Duke D cancer at presentation. 11.4% had tumour recurrence after primary surgery. The 25% died within 3 years of diagnosis.
Conclusion: Whereas the overall incidence of CRC has remained relatively constant, the incidence of CRC in the under 50s has been steadily increasing. Patients in this young age group present with a more advanced stage of the disease. Increasing symptom awareness and lowering the screening age should be considered a priority.

P470

Anatomical and surgical consequences of right colectomy with extended (D3) mesenterectomy for cancer

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Aim: is to evaluate the extent and quality of lymphadenectomy after right colectomy with extended D3 mesenterectomy anterior/posterior to the mesenteric vessel.
Method: Residual vascular stumps were measured and quality of central lymphadenectomy evaluated using 3D reconstructed anatomy from follow up CT datasets and images taken during surgery.
Results: Thirty-one patients (15 females), age 65.5 SD7.0. Average lengths (±SD) of residual vascular stumps measured on 3D reconstructed CTs / on images taken during surgery were: right colic artery:0.6 ± 1.0 mm/0.4 ± 0.6 mm, ileocolic artery:0.9 ± 1.6 mm/0.4 ± 0.8 mm, ileocolic vein:0.3 ± 1.4 mm/0.0 ± 0.0 mm, middle colic artery (MCA):3.5 ± 6.0 mm/1.8 ± 2.4 mm and right branch of MCA:3.5 ± 6.0 mm/0.2 ± 0.6 mm. There was no significant difference between average lengths measured by means of the two techniques. The extent of lymphadenectomy was deemed acceptable in all patients.
Conclusion: The results demonstrate very short residual vascular stumps and together with operative photographs provide objective evidence for superior lymphadenectomy in right colectomy with D3 extended mesenterectomy. Future trials evaluating survival rates after surgery for colon cancer based on extended lymphadenectomy should employ both methods to validate the quality and extent of the surgery.

P471

Evaluation of the Virtual Clinic concept for suspected colorectal cancer referrals

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Aim: As a participant of Accelerate, Coordinate, Evaluate (ACE) programme, we aim to analyse our "Virtual Clinic" (VC) pathway for rapid access colorectal referrals.
Method: Between July 2015 and December 2017, specifically designed GP referral proforma were assessed by a colorectal consultant or nurse specialist daily. Suitable patients were referred for investigations.
Results: We received 2406 referrals, mean age 68.8 (SD = 12.29), 5:6 male to female ratio. Patient distribution was 61.5% straight to test (STT), 38.2% clinic and 0.4% excluded (5 deaths, 4 inpatients). 88% patients reported very satisfied with VC pathway. Median time for VC assessment 1 day (IQR = 2) and to outpatient review 9 days (IQR = 6).

99.8% STT attended investigation. 84.9% clinic patients had investigations, 11.4% no further investigation and 34 (3.7%) failed to attend. 28-days from referral, 97.2% of STT had investigation versus 66.6% from clinic (x^2 (1)= 427.614, $P < 0.05$). This represents 98.6% cancer diagnosed among STT and 88% from clinic (x^2 (1)=6.0385, $P < 0.05$).
Conclusion: VC enables rapid assessment and referral for investigations with high patient satisfaction and low dropout. This is in-line with the 28-day standard being implemented by 2020 as seen in over 97% of STT patients and 98% of STT-detected cancers.

P472

Systematic review on blood/tissue diagnostic markers in colorectal cancer

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This abstract has been accepted for publication.

P473

A review on the prognostic and therapeutic role of hormones in colorectal cancer

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Aim: Colorectal cancer (CRC) is a major health burden worldwide and metastatic disease responds rather poorly to current therapeutic regimes. It is essential we explore further molecular targets to tailor treatments to improve survivals. This review discusses which hormones have been investigated as prognostic and/or therapeutic targets in colorectal cancer.
Method: A systematic review of the literature was performed over the last 10 years to include papers describing the use of hormones as prognostic or therapeutic targets in colorectal cancer. All human and animal *in-vitro* and *in-vivo* studies were included.
Results: We identified 42 relevant papers (18 discussing hormones as prognostic markers and 23 as therapeutic markers). The hormones most investigated in CRC are adiponectin, leptin and oestrogen, along with their receptors. All of the therapeutic studies have been performed in animal or cultured cells and the results need further validation.
Conclusion: Hormonal therapy has changed the prognosis of breast and prostate cancer. In CRC, however this area is far less well explored and although there are a few promising preliminary studies for a few limited markers, these need to be further validated.

P474

Four-level concept based on three-dimensional muscular structure to facilitate the understanding of surgical anatomy for anterior dissection in trans-anal ISR/APR of male

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Aim: Anal canal consists of smooth and striated muscles. It is difficult to distinguish these two muscles in an anterior anorectal wall. Aim of this study is to create three-dimensional muscular structure to navigate the anterior dissection in trans-anal ISR/APR of male.
Method: Nine male cadaveric pelvises were sliced horizontally, coronally or sagittally at 5 mm intervals. Serial histological sections were made at 250 μm interval and stained with Elastic van Gieson. Three-dimensional muscular structure was reconstructed by the segmentation of smooth and striated muscle in two serial histological sections.
Results: The muscular structure of the anterior anorectal wall was divided into four levels for its easy understanding; i) subcutaneous external anal sphincter (scEAS), ii) superficial and deep EAS, iii) levator ani muscle (LAM), iv) prostate. At LAM level,

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smooth muscle fibers continuing from longitudinal layer of the rectum extended to the posterior aspect of the rhabdosphincter. Three-dimensional image showed that the smooth muscle fibers occupied the space encircled by the prostate and the EAS, bilateral lavator ani muscle, the rhabdosphincter and rectal wall.
Conclusion: Our four-level concept based on the muscular structure can facilitate the understanding of the surgical anatomy for anterior dissection in trans-anal ISR/APR of male.

P475
Our experience with colorectal cancer rate, Three years post colonoscopy

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Aim: Post-colonoscopy colorectal cancer (PCCRC) rate of <5% is a quality indicator for colonoscopy outlined by the Joint Advisory Group on GI Endoscopy, the British Society of Gastroenterology and the Association of Coloproctology. Our aim was to establish the PCCRC rate for our unit and the investigation which led to colorectal cancer (CRC) diagnosis.
Method: A retrospective analysis of 206 consecutive CRC cases between April 2015 and March 2017 at a district general hospital. Data involved polyp pathological features and completeness of excision were noted. PCCRC rate was calculated using the le Clercq method.
Results: PCCRC rate was 2.6% (6/206). Of the 206 cases of CRC identified, 54.9%(113) were diagnosed using colonoscopy, 23.8%(49) computed tomography (CT) abdomen and pelvis, 11.7%(24) flexible sigmoidoscopy, 5.3%(11) CT colonogram and 4.4%(9) with another method.
Conclusion: 2.6% of patients with newly diagnosed CRC had a colonoscopy within the last 3 years. Increased ADR of endoscopists, ensuring adenomas are completely excised and appropriate surveillance were the key elements in achieving this result. Lack of standardization in methodologies, however, makes comparison amongst centres for PCCRC difficult. Colonoscopy, the gold standard method, was the primary method of diagnosis in just over half of CRC cases.

P476
The accuracy of CT scan in predicting tumour and nodal staging in colon cancer

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Aim: The aim of our study was to determine the accuracy of colon cancer local disease staging by computed tomography (CT) scan.
Method: 238 patients were operated electively for colon cancer in our tertiary centre between September 2014 and October 2017. Preoperative CT scan reports and histological findings were compared.
Results: All 238 patients had a preoperative CT scan. Only 66 out of 238 (28%) patients had both their tumour (T) and nodal (N) staging documented on their CT report. 14 of 66 (21%) patients were staged correctly with regards to TN staging. 31 out of 66 (47%) patients were under-staged; 5 patients (8%) were under-staged both for T and N staging, 18 (27%) were under-staged for T stage and 8 (12%) were under-staged with regards to nodal status. Twenty-one of 66 (32%) patients were over-staged; 6 (9%) were over-staged both for T and N stage, 5 (8%) were over-staged for T stage and 10 (15%) were over-staged in respect of nodal staging.
Conclusion: Preoperative tumour and nodal staging in colon cancer remains challenging. This has implications for the introduction of novel treatments such as neoadjuvant chemotherapy.

P477
The management of involved pelvic side wall lymph nodes in patients with primary rectal cancer

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Aim: The management of prospectively determined lateral pelvic nodes (LPNs) as involved remains controversial in rectal cancer. We aimed to determine the incidence of LPNs and assess their management.
Method: Our prospectively maintained database included 139 patients (92 male, 47 female) with primary rectal cancer operated between October 2014- August 2017.
Results: 19 of 139 patients (13.7%) had prospectively determined LPNs as involved at magnetic resonance imaging, including 6 with bilateral LPNs (4.3%). 15 patients received long course chemoradiotherapy, 2 patients had short course radiotherapy and 2 patients went straight to surgery. Median follow-up following surgery was 14 (IQR 10, 18) months. 9 of 19 patients underwent LPN clearance. 4 of these 9 patients had tumour metastases within LPNs at histology; one had brain metastasis at 10 months and another patient had lung metastasis at 15 months. Of the 5 patients with histologically negative LPNs, one had pulmonary metastases at follow-up and one died at 6 months. Of the 10 patients with involved LPNs who had no clearance, two died from distant metastatic disease 10 and 11 months.
Conclusion: The role of LPN clearance in advanced pelvic malignancy is unclear. Prospective data is essential to enhance future clinical decision making.

P478
Elevated preoperative HbA1c is an independent risk factor for major postoperative complications in men following surgery for colorectal cancer

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Aim: Elevated pre-operative HbA1c has been suggested to be a risk factor for postoperative adverse events (AE). The aim was to assess the sex-specific predictive value of HbA1c for major AE in patients operated for colorectal cancer.
Method: Retrospective analysis of 396 patients who underwent surgery for colorectal cancer stage I-III from 2010–2013 at a tertiary centre. Data was retrieved from the Swedish Colorectal Cancer Registry and medical records to complete information regarding smoking, co-morbidity, preoperative HbA1c and albumin levels. Major AE were defined as Clavien-Dindo exceeding grade 2.
Results: The HbA1c level was above 47 mmol/l in 69 of 396 patients. Major AE occurred in 16 (23%) patients with elevated HbA1c compared to 49 (15%) patients with normal HbA1c ($P = 0.11$). Men with an elevated HbA1c developed major AE in 33% compared to 7% in women, $P = 0.008$. The multivariable logistic regression model, adjusted for ASA, age and albumin showed an OR of 2.46 (95% CI 1.17–5.18; $P = 0.018$) for men and 0.35 (95% CI 0.08–1.61; $P = 0.180$) for women with elevated HbA1c versus patients with normal HbA1c to have major AE.
Conclusion: The predictive value of elevated preoperative HbA1c regarding major AE seems to be more important in men than in women.

P479
Two regimens of intraperitoneal chemotherapy after cytoreductive surgery improved survival of patients with colorectal peritoneal metastases

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Aim: The aim of this study was to investigate the survival benefit of the two types of intraperitoneal chemotherapy after cytoreductive surgery for patients with colorectal peritoneal metastasis.
Method: An institutional database was researched for patients with colorectal peritoneal metastasis who were treated with cytoreductive surgery (CRS) with or without intraperitoneal chemotherapy (IPCT) between 1999 and 2017. Either early postoperative intraperitoneal chemotherapy (EPIC) or hyperthermic intraperitoneal chemotherapy (HIPEC) was used. The main endpoint was cancer-specific survival.
Results: The study included 138 patients; 49 patients underwent CRS only (surgery group), and 89 patients underwent CRS and IPCT (IPCT group). Both peritoneal carcinomatosis index and remnant disease were significantly greater in the IPCT group than in the surgery group. Median CSS was 22.9 months in the surgery group, and 37.6 months in the IPCT group ($P = 0.005$). Multivariate analysis revealed that IPCT was an independently better prognostic factor of survival outcomes. When patients in the IPCT group were compared between two types of IPCT, there was no difference in the survival outcomes between EPIC and HIPEC.
Conclusion: IPCT was associated with improved survival outcomes compared with surgery alone, while we could not find different outcomes between the two types of IPCT.

P480
Is there any difference in long-term cancer recurrence between laparoscopic and robotic surgery in mid/low rectal cancer?

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Aim: The aim of this study is to investigate the long-term oncologic outcomes of robotic total mesorectal excision for mid/low rectal cancer.
Method: An institutional database was reviewed for all consecutive patients who underwent laparoscopic or robotic surgery for stage I–III mid/low rectal cancer

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between January 2009 and December 2013. Propensity score analyses were performed to compare oncologic outcomes between robotic and laparoscopic surgery.
Results: 118 patients were included in each group. The 5-year disease-free survival rate was 87.5%% in the laparoscopic group, and 86.6% in the robotic group ($P = 0.772$). Multivariate analysis revealed that preoperative chemoradiation, pT3-4 tumors, and pN2 were independently related to disease-free survival. In patients who had preoperative chemoradiation and pT3-4 tumors, the 5-year disease-free survival rate and 5-year distant recurrence rate were 60.0% and 40.0% in the laparoscopic group and 85.2% and 5.6% in the robotic group ($P = 0.102$ and $P = 0.014$, respectively).
Conclusion: Robotic surgery for mid/low rectal cancer showed similar long-term oncologic outcomes with laparoscopic surgery. It is warrant to further investigate whether patients with risk factors of disease recurrence can be considered as an appropriate candidate for robotic surgery.

P481
Oncologic outcomes of colorectal cancer patients with infrarenal paraaortic lymph node metastasis: results of selective surgical treatment at a single tertiary hospital

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Aim: The aims of this study were first to compare the oncological outcomes of patients with colorectal cancer according to the level of lymph node metastasis (regional lymph node and PALN) and second to evaluate clinical factors associated with outcomes after PALN dissection.
Method: Data of patients who underwent treatment of stage III/IV colorectal cancer at our institution between June 1999 and December 2012 were reviewed. The survival outcomes of patients were compared according to the level of lymph node metastasis. Cox proportional hazard model was created to define prognostic factors of disease-free survival (DFS).
Results: During the study period, 48 patients underwent PALN dissection according to the criteria. Patients with apical lymph node metastasis showed higher 5-year overall survival (OS) rate than patients with PALN metastasis (62.9% vs 24.5%, $P = 0.016$). The 5-year DFS rates were significantly different according to the adjuvant systemic chemotherapy. The other factor having impact on survival outcomes was number of metastatic PALN.
Conclusion: Although PALN metastasis of colorectal cancer could not be cured by only surgical resection, PALN dissection can be considered as the part of a multidisciplinary approach for patients with the infra-renal PALN metastasis.

P482
Defining CT-derived sarcopenia to inform trials of targeted lifestyle intervention in patients with colorectal cancer

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Aim: Loss of muscle mass, sarcopenia, is associated with increased surgical complication rates and reduced survival in patients with colorectal cancer (CRC), and is a promising target for lifestyle intervention. However, in the cancer literature, sarcopenia is defined by risk stratification (Prado, Martin) rather than an age-related (x2 SDs below mean) 'penic' (Kim) criteria.
Method: To inform the control 'arm' of lifestyle intervention trials in the pre-resection and survivorship settings, we measured abdominal muscle parameters from routine CT scans in 38 patients with rectal cancer pre- and post-chemoradiotherapy (CRT) and 25 patients with CRC in follow-up (years 2 through 5). Primary outcome was change in proportions of sarcopenia defined by different criteria.
Results: There was no decline in muscle parameters following CRT. Risk stratification criteria overestimated the proportion of sarcopenia in the pre-CRT setting (Prado: 71%; Martin: 63% versus Kim: 18%); and failed to capture a relative decrease in sarcopenia with time among CRC survivors (year 2 to 5 Prado: 36% to 48%; Martin: 44% to 48% versus Kim: 8% to 4%). Similar patterns were noted for muscle volume and density.
Conclusion: These pilot data will inform the determination of muscle-related parameters in lifestyle intervention trials in patients with CRC.

P483
Indications and outcomes for pouch excision in patients with familial adenomatous polyposis (FAP)

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Aim: Restorative proctocolectomy is a surgical option in FAP. Pouch excision may be required for progressive neoplasia or complications. We aimed to investigate indications for pouch excision and post-operative outcomes in this group.
Method: Patients were identified from a prospectively maintained database. Data were collected on indications for pouch excision and post-operative complications.
Results: 38/413 patients underwent pouch excision. Median age of the pouch at excision was 11 years (range 0 – 25). The 28/38 patients had their pouch excised at our institution; of these 18 were formed at our centre. Common reasons for pouch excision were: neoplasia ($n = 16$, 42%; 12 for high polyp burden, 3 with cuff cancer and one pelvic cancer recurrence), 5 (13%) for poor pouch function; and 7 (18%) patients for pouch fistula. Two patients underwent pouch excision due to immediate post-operative complications. Post-operative records were available for 25/28 patients. Twenty-three (92%) experienced complications, 14 (56%) within 30 days (10 Clavien-Dindo grade 1–2 and 4 grade 3–4). 17 patients (68%) experienced complications after 30 days. 8/25 patients (32%) required further surgery. One-year mortality was zero.
Conclusion: Pouch neoplasia is the most important indication for pouch excision in patients with FAP. Pouch excision is associated with significant morbidity.

P484
Variation in compliance of ethnic minorities to bowel cancer screening in West London

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Aim: West London is one of the most of the ethnically diverse populations within the UK, exhibiting some of the lowest compliance with the Bowel Cancer Screening Programme (BCSP) nationally. This study aimed to evaluate the impact of ethnicity on the uptake of BCSP in West London.
Method: A retrospective analysis was performed of all BCSP results from the CWHHE collaborative 5 Clinical Commissioning Groups between 2012–2017. All SystemOne GP practice data was collated and compliance with the BCSP was analysed according to ethnicity categorised according to the '2011 Census analysis in England and Wales: Ethnicity'. Logistic regression analysis was performed to assess the effect of ethnicity on compliance with the BCSP.
Results: Overall, 155 038 individuals were invited to take part in the BCSP across 238 general practices. A compliance of 46.5% was demonstrated. A significantly lower compliance to faecal occult blood test screening was demonstrated across ethnic groups compared to the 'White' group. 'Asian-Bangladeshi' (OR = 0.376), 'Asian-Indian' (OR = 0.630), 'Asian-Pakistani' (OR = 0.451) and 'Black African' (OR = 0.653) noted the lowest participation rates.
Conclusion: Significantly disproportionate uptake of the BCSP across ethnicities has a detrimental effect of furthering health inequity. It is imperative to identify vulnerable ethnic groups for focused health promotion.

P485
Short-term outcomes of exenterative pelvic surgery for primary and recurrent malignancies in different age groups

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Aim: The role of exenterative procedures in elderly patients needs to be elucidated. We compared short-term outcomes of patients before versus after 70 years of age.
Method: We collected data on patients undergoing surgery beyond the total mesorectal excision plane and pelvic exenteration between 2011 and 2016. Patients were excluded if sacrectomy was performed and if the quality of data was unsatisfactory. Two groups were compared (<70 vs ≥70 year-of- age).
Results: 218 patients underwent surgery for either primary ($n = 175$) or recurrent ($n = 43$) malignancies, 151 <70 years and 67 ≥70. There was no 30-day mortality. Complications occurred in 58 (38.4%) and 22 (32.8%) patients ($P = 0.45$). No differences were observed in rates of urinary tract infections (7.9% vs 5.9%, $P = 0.78$), SSIs (14% vs 14.9%, $P = 0.84$), intra-abdominal collections (9.2% vs 16.4%,

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$P = 0.17$), chest infection (11.2% vs 11.9%, $P > 0.99$), cardiac complications (2% vs 5.9%, $P = 0.2$), DVT/PE (5.3% vs 2.9%, $P = 0.72$). ASA>2 was associated more chest infections (10.8% vs 34.7%, $P = 0.03$) and cardiac events (2.6% vs 9.7%, $P = 0.09$), irrespective of age.
Conclusion: Extra-anatomical procedures can be safely performed in adequately assessed, selected and optimised elderly patients. Morbidity is common, suggesting the need for centralization. ASA and age are inadequate prognosticators of surgical.

P486
Unusual behavoir of rectal neuroendocrine carcinoma with single metachronic metastasis in the breast

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Aim: Present a clinical case of a woman with single metastasis in her breast from rectal neuroendocrine carcinoma (NC).
Method: A 75-years-old woman diagnosed with rectal NC poorly-differentiated in 2016. After neoadjuvant therapy, an anterior low-rectal resection with primary anastomosis and protective ileostomy was performed. Histological sample confirmed a big cells NC, grade 3 (Ki67 70%) and was treated with adjuvant chemotherapy. After 18 months of follow-up, a left breast lesion was detected with high level of chromogranin A. Mammography, Octreoscan, TAC and PAAF were performed and they confirmed metastasis. Nowadays she continues to receive ratio-chemotherapy.
Results: Metastasis in the breast from extramammary malignancies are infrequent, being normally confused with primary breast tumour. Rectal NC is also very unusual and it has an aggressive behaviour, with disseminated disease at diagnosis and low survival rates. Liver, peritoneum, bone and lung are the main organs affected. Our case is singular because the tumour behaviour and its evolution is very exceptional, with a single metastasis in the breast.
Conclusion: Breast metastasis from rectal tumours are very rare. Also NC tumour is very unusual. In our knowledge, no other cases in the literature are described.

P487
Analysis of our experience in preoperative staging of rectal cancer through the use of magnetic resonance

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Aim: Study the correlation between preoperative staging of rectal cancer by magnetic resonance (MR) and histological outcomes in patients without neoadjuvant therapy.
Method: All patients undergoing rectal cancer surgery without neoadjuvant therapy during the period 2009–2016 were analysed to determine the correlation of tumour stage by MR with histological outcomes. A descriptive analysis of our sample was also made.
Results: Of 492 patients included in the colorectal cancer database, 175 (35.6%) without neoadjuvant therapy were identified. 64.4% were males and mean age was 68.8-years. High-anterior rectal resection (45.3%) was the main procedure used. 51.1% of correlation between T-stage by MR and histological size of the sample was found, while N-stage was correlated in 61.1%. Kappa index between tumour stage by MR and histological stage was 0.953. Specificity of MR for T-stage and N-stage was established between 73–94% and 76–87% respectively.
Conclusion: In our series, MR is the technique for local staging of rectal cancer. Although our outcomes are similar than published in literature, it is necessary to increase the accuracy of MR to contribute a better onco-surgical approach of our patients.

P488
Is it really robotic surgery for rectal cancer non superior to the laparoscopic approach, in expert hands? Our experience from a tertiary care university hospital

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Aim: This study aims to compare robotic and laparoscopic rectal resections, in expert hands.
Method: A prospectively collected robotic and laparoscopic database of an experienced laparoscopic colorectal surgeon, was reviewed. The data were analyzed for short term outcomes (non-parametric tests)
Results: A total of 146 patients were reviewed. Groups were matched for distance from anal verge, 90% of the resections were for cancer. The robotic group included more male, obese, with low rectal tumour patients ($P < 0.001$). Median age was 63 year old (39–82) for the robotic and 69 year old (33–86) for the laparoscopic group. There were no intraoperative complications and no mortalities. Our conversion rate was 1.16% in the robotic and 0% in the laparoscopic group. LoS was lower in all subgroups analysis in the robotic group however, due to the sample size it did not reach statistically significance. The rate of serious complications (Clavien-Dindo IIIA or IIIB) was not different between the groups. (8.1% for the robotic and 10% for the laparoscopic). The percentage of APR within the robotic group was 11.8% whereas this percentage in the laparoscopic group was 23.1%
Conclusion: Robotic surgery for rectal cancer is safe and feasible, with favorable short term outcomes than laparoscopic surgery.

P489
Effect of age and comorbidities on short and long-term results in patients undergoing Laparoscopic Curative Resections of Rectal Cancer: a cohort study

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Aim: To evaluate the effects of age and comorbidities on short/long-term results of patients undergoing laparoscopic curative resection for rectal cancer (LCRRC).
Method: We retrospectively evaluated all consecutive LCRRC patients (June 2005-September 2015). Patients were divided into two groups: <75 and ≥75 years. Comorbidity status was evaluated using ASA score, Charlson Comorbidity Index (CCI), age-related Charlson Comorbidity Index (ACCI). Follow-up was updated at December 2016.
Results: Tumor characteristics/location were similar in the two groups. Comorbidity status (ASA, CCI, ACCI) was worse in elderly patients. Surgery performed was similar in the two groups. Medical complications were significantly higher in elderly (10.7% vs 29.4%, $P = 0.006$), surgical complications were similar. Post-operative stay was longer in older patients (13 *vs* 9 days, $P = 0.0007$). Pathological characteristics were similar in the two groups. Multivariable analysis revealed older age, higher CCI and longer operative time as independent predictors of morbidity. 5-years overall/disease-free survival was 49%/43% in older group and 84%/77% in younger group ($P < 0.0001$). Multivariable analysis identified age, CCI, TNM stage and postoperative morbidity as independent risk factors for overall/disease-free survival.
Conclusion: LCRRC achieves excellent short-/long-term results, but age/comorbidities may significantly affect postoperative morbidity/survival. Appropriate selection of patients is crucial.

P490
Laparoscopic curative resection for rectal cancer: a cohort study on long-term outcome

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Aim: To evaluate the short-/long-term results of laparoscopic curative resection for rectal cancer, focusing on predictors of 5-year survival/recurrence.
Method: This retrospective cohort study included all laparoscopic curative resection for rectal cancer patients (June 2005-September 2015) with follow-up updated December 2016. Metastatic patients were excluded.
Results: 159 patients were included; 33.9% received neoadjuvant chemo-radiotherapy. 30-day mortality and morbidity rates were 0.6% and 26.4%, respectively. Pathological stage was: 0 12%, I 39%, II 24.5% and III 24.5%. The median number of lymph node harvested was 16. In 5% of patients mesorectal excision was incomplete. Median follow-up was 59 months. Overall 5-year survival was 80%; by stage: 0 74%, I 87%, II 82%, III 66%. Disease-free 5-year survival was 74%; by stage: 0 77%, I 83%, II 79%, III 52%. Multivariable analysis identified older age, higher Charlson Comorbidity Index, advanced tumor stage and postoperative morbidity as independent risk factors for overall/disease-free survival. Local recurrence was 4.4% (median 32 months post-op). Distant recurrence was 17.6% (median 23 months post-op). Deaths during follow-up were 33/159 (20.8%): cancer-related in 54.6% and non-cancer-related in 45.4% of patients.
Conclusion: Laparoscopic curative resection for rectal cancer can yield prolonged survival and low recurrence.

P491
Platelet-to-lymphocyte ration and neutrophil-to-lymphocyte ratio are not prognostic biomarkers in rectal cancer patients with curative resection

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P492

Is prognostic nutritional index a useful tool to predict short-term complications after laparoscopic curative resection for rectal cancer?

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Aim: We evaluated the prognostic relevance of preoperative Prognostic Nutritional Index (PNI) on post-operative complications in patients undergoing laparoscopic curative resection for rectal cancer (LCRRC).
Method: PNI data and clinico-pathological characteristics from LCRRC patients in a 10-year period (2005–2015) were evaluated; metastatic patients were excluded; 30-day postoperative complications were evaluated using Dindo-Clavien classification.
Results: 120 patients were included. Median preoperative PNI was 45.5 (IQR 39.4–52). Lower PNI was associated with females, older age and neoadjuvant treatment. Median hospital stay was 9 days (IQR 8–13) and was not correlated with PNI. Post-operative complications occurred in 33 patients (27.5%), by Dindo-Clavien classification 24 grade I-II, 9 grade III to V. Median preoperative PNI was 44.6 (IQR 38.7–53) in complicated and 45.7 (IQR 39.4–51.9) in uncomplicated patients ($P = 0.84$). At multivariable analysis, PNI was not associated with postoperative morbidity (OR 1.01; 95% C.I. 0.96 to 1.06). Median preoperative PNI was 45.7 (IQR 39.4–51.9) in uncomplicated patients, 45.8 (IQR 40.4–53.6) in Dindo-Clavien grade I-II patients and 40.4 (IQR 33.4–49.3) in Dindo-Clavien grade III-V patients ($P = 0.39$).
Conclusion: PNI status in rectal cancer patients undergoing curative resection, in our experience, was not associated with postoperative morbidity, although a lower PNI was observed in patients with severe complications.

P493

Late results of colon cancer resections for obese patients

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Aim: To compare and analyze the clinical outcomes of applying the laparoscopic approach to colorectal surgery for obese patients in a single center.
Method: Retrospectively analysis identified 107 patients from a hospital database who underwent colorectal surgery – laparoscopic (group A – 35 patients (32.7%)) and open (group B – 72 (67.3%)) with BMI ≥ 30 kg/m²- between 2013 and 2015. Main measures was included preoperative, intraoperative, and postoperative outcomes.
Results: The group B had significantly higher surgical site infection rate, shorter operative time and longer average hospital stay ($P = 0.03$). BMI has decreased for 11 (40.8%) patients of group A and 31 (52.5%) patients of group B. Complications rate 3-year after primary surgery was higher in group B – 20 (27.7%) patients versus group A – 4 (11.4%) patients. Incisional hernias were more common in the laparotomy surgery group compared with laparoscopic surgery group. Patients were satisfied the operation 92.6% and 47.6% in group A and B, respectively. Overall survival was group A – 77% and in group B – 71%.
Conclusion: This study among for obese laparoscopic group patient found a better prognosis, lesser postoperative morbidity rate after 3 year of surgery.

P494

Transanal endoscopic microsurgery for rectal tumors: single clinic experience

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Aim: To evaluate the experience with TEM as radical organ-preserving surgical method of treatment.
Method: March 2007–September 2017 162 patients underwent TEM for rectal tumors. 89 women, 73 men, age 44–76 years. 60 had rectal cancer (23 – G1; 35 – G2; 2 – G3; 4 – Tis; 38 – T1; 18 – T2). 99 had adenomas (1 lower to upper ampulla, 4–13 cm, 90% circumference tumor). 3 had neuroendocrine tumor. 4 had primary multiple cancer of colon and rectum. They underwent combined TEM-resection with colon resection.
Results: Median postoperative follow up was 77 months. Complications: rectal bleeding 1.85% (3 patients), stopped conservatively. Total recurrence rate was 5.56% (9 patients). 3.33% (2 patients) with rectal cancer had local recurrence, both underwent chemoradiotherapy and surgery. Local recurrence with adenomas is 7.07% (7 patients), 5 underwent repeated TEM – procedure, 1 – endoscopic polypectomy, 1 – transanal tumor excision.
Conclusion: TEM-excision of rectal adenoma and adenocarcinoma in the early stages is a radical operation with observance to the selection criteria for it. TEM procedure has low complication and recurrence rate. TEM-operations can be successfully combined with abdominal operations in synchronous tumor lesions of the rectum and colon. It is possible to use repeated TEM-resection in recurrence of adenomas.

P495

Perineal herniation following extralevator APER for rectal cancer- a single center experience

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Aim: Prevalence of perineal herniation following abdomino-perineal excision of rectum (APER), requiring repair, have been reported historically from <1% to 7%. The purpose of this study was to investigate the modern incidence of postoperative perineal hernias with respect to different surgical closure methods at a single center.
Method: Retrospective analysis of prospectively recorded data of patients who underwent APER for rectal cancer from Jan 2013 to Dec 2017 was carried out at a single center.
Results: During 4 years' time period 45 patients underwent APER for rectal cancers. Out of those 12 had skin closure, 16 had muscle closure, 8 had mesh closure and 6 had flap reconstruction. The mean age was 60 years (33–85). Two patients who had primary closure (4.4%) and one patient (2.2%) in mesh closure group developed perineal herniation. The average time from operation to develop this hernia was 192 days following skin closure group and 89 days for mesh closure group.
Conclusion: In our study, primary skin or mesh closure was associated with occurrence of perineal herniation. However, it is a single centre study with a small number of patients; the finding warrants establishing a registry to record APERs and incidence of perineal hernias.

P496

Oncological outcomes after left and right sided surgery in the over-80s

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Aim: There are recent papers suggesting worse oncological outcomes after surgery for right-sided colon cancer. This study looks at the outcomes of left and right-sided cancer in octogenarians.
Method: A retrospective analysis of prospectively collected data was undertaken of all patients over 80 who were diagnosed at our hospital between April 2007 and April 2016. Data including co-morbidities, histological staging, complications, overall survival and disease free survival were recorded.
Results: A total of 261 patients were included, and 197 patients had right-sided surgery. The two groups were homogenous in relation to age, ASA, BMI, CACl score, cancer stage and operation distribution. Rectal cancers were excluded from the study. Kaplan-Meier and Wilcoxon Log Rank analyses of overall survival showed no statistical difference between the two groups ($P = 0.789$), nor were there any differences in disease free survival ($P = 0.981$). Stratifying the groups into the stage of cancers also showed no difference (Stage 1 $P = 0.163$, Stage 2 $P = 0.435$, Stage 3 $P = 0.846$) in overall survival.
Conclusion: There is no difference in the overall and disease-free survival data between left and right-sided colonic resections in the octogenarian patient group, even when stratifying for the staging of cancer.

P497

Treatment and survival among Danish patients with colorectal synchronous peritoneal metastases

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Aim: To describe treatment and survival among patients with synchronous peritoneal metastases (S-PM).
Method: A population-based study of patients diagnosed with S-PM and identified between 2014–2015 using the Danish Colorectal Cancer Group database, the Danish National Patient Registry and the Danish Pathology Registry.Treatment was categorized into 4 groups based on specific algorithms. One-and 2-year survival rates were computed using Kaplan-Meier survival analysis for patients surviving 180 days after colorectal cancer diagnosis.
Results: Among 468 patients with S-PM, 102 (22%) received 'no treatment', 210 (45%) received 'alleviating surgery and/or systemic chemotherapy', 127 (27%) had a 'colonic/rectal tumour resection +/- systemic chemotherapy' and 29 (6%) received

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'cytoreductive surgery (CRS) + hyperthermic intraperitoneal chemotherapy (HIPEC)'. Preliminary estimates show 1-and 2-year crude survival rates of 53% *(95 CI:29;72)* and 24%*(8;45)* after 'no treatment', 65% *(95 CI:57;73)* and 24% *(17;33)* after 'alleviation', 69% *(95 CI:59;77)* and 36% *(26;46)* after 'resection' and 100% *(95 CI:NA)* and 95% *(68;99)* after 'CRS+HIPEC'.
Conclusion: Treatment of S-PM is heterogenic even though CRS+HIPEC is a well-known treatment with favourable outcome. One can expect an increased population-based survival once CRS+HIPEC is performed in a larger proportion of these patients.

P498
Incidence and prevalence of peritoneal metastases among Danish patients with colorectal cancer

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Aim: To determine the incidence and prevalence of peritoneal metastases (PM) among Danish colorectal cancer (CRC) patients.
Method: In a register-based population study, CRC patients were identified between 2006–2015 in the Danish Colorectal Cancer Group database. PM was identified using the Danish National Patient Registry and the Danish National Pathology Registry. Patients were excluded if another cancer was recorded within 5 years prior to CRC diagnosis. Synchronous PM (S-PM) was defined as the presence of PM within -/+ 180 days from CRC diagnosis. The cumulative incidence (risk) of metachronous PM (M-PM) was defined as the occurrence of PM 180 days after curative CRC surgery, thus estimated among patients free of distant metastases and survivors 180 days after CRC diagnosis. Another cancer and death were treated as competing risks.
Results: During 2006–2015, 37 734 patients were included. The prevalence of diagnosed S-PM increased from 2% in 2006 to 5% in 2015. In total, 22 582 underwent curative CRC surgery. The 1-year risk of M-PM was 0.9%(95% CI:0.8;1.1) increasing to 3.1% (95% CI: 2.8;3.4) after 9 years.
Conclusion: The prevalence of PM seems to have increased over time, which may be due to an increasing awareness and better registration rather than to change in biology.

P499
Does pelvic radiation increase rectal cancer incidence? – a systematic review and meta-analysis

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Aim: To analyse the incidence of RT-induced rectal cancer following primary pelvic cancer.
Method: A literature search was conducted using the PubMed and EMBASE libraries. Original articles that reported on second rectal cancer after previous RT for a primary pelvic cancer were included. Sensitivity analyses were performed by correcting for low number of events, high risk of bias, and outlying results.
Results: A total of 5171 citations were identified and 23 studies were included in the meta-analyses after screening. A pooled analysis, irrespective of primary tumour location, showed an increased risk for rectal cancer following RT ($N = 232\ 120$) compared with non-irradiated patients ($N = 487\ 703$) with a relative risk (RR) of 1.45 (95% confidence interval [CI] 1.23–1.70). Organ specific meta-analysis showed an increased risk for rectal cancer after RT for prostate (RR 1.36, 95%CI 1.10–1.67) and cervical cancer (RR 1.61, 95% CI 1.10–2.35). No relation was seen in ovarian cancer patients. The modality of RT did not influence the incidence of rectal cancer.
Conclusion: This review demonstrates an increased risk for second primary rectal cancer in patients who received RT to the pelvic region. This increased risk was modest and could not be confirmed for all primary pelvic cancer sites.

P500
Preoperative local tumour staging in patients with locally advanced colon cancer improves overall survival

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Aim: To investigate if preoperative staging of the primary tumour affects overall survival in patients with locally advanced colon cancer.
Method: Data on patients diagnosed with colon cancer between 2007 and 2014 were extracted from the Swedish Colon Cancer Registry. The registry covers 97–99% of all patients diagnosed with colon cancer in Sweden during this period.
Results: A national cohort of 2797 patients without metastatic disease and having had an elective resection of a locally advanced colon cancer, assessed as pT4 at histopathology, was included in the study. The median age was 74 years (19–97 years) at the time of diagnosis and 53% were females. Local tumour stage before surgery was evaluated with CT scan in 1688 (60.4%) of the patients and 706 patients were staged as having a locally advanced tumour (cT4). The 5-year overall survival was 56.4% for patients having had a preoperative local tumour staging and 50.0% for patients without preoperative tumour staging.
Conclusion: Local staging of the tumour before surgery improves prognosis in patients with locally advanced colon cancer.

P501
What is the best surgical approach for pure splenic flexure tumours?

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Aim: Pure splenic flexure tumours are infrequent, and surgical decision-making regarding type of colonic resection can be challenging. We aimed to identify pathological results, recurrence, and survival of patients with these tumours related to the surgical technique performed.
Method: We analysed all patients with splenic flexure tumours operated with a curative intention from 2011–2016 in a tertiary care university hospital.
Results: A total of 58 patients were studied, 69% male, mean age 69.8 years. Colectomies performed were 14 segmental, 21 left, 10 extended-right and 13 subtotal. Segmental colectomy patients had lower T and N stages ($P < 0.05$). The number of lymph nodes for pathological analysis was higher in subtotal and extended-right colectomies ($P < 0.001$), but the incidence of positive nodes was higher in left colectomies ($P < 0.001$). Patients with no initial metastases but progression of disease had undergone either left or extended-right colectomies ($P < 0.05$). Patients with segmental resections had a longer progression-free survival ($P < 0.05$), compared with all other techniques.
Conclusion: Patients with segmental colectomies presented lower T and N stages and overall a better progression-free survival, thus more economic resections can be an option in these cases. There was no statistical difference in overall survival among all the analysed surgical techniques.

P502
What is the best surgical option for right hemicolectomy for right colon cancer in ASA 3–4 patients (one-stage vs two-stages procedure)?

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Aim: To evaluate the best strategy (the one-stage and the two-stages strategy) in the management of right colon cancer in ASA 3–4 patients.
Method: From January 2003 to December 2013, all ASA 3–4 patients operated on for a right colon cancer were included in this retrospective, single centre study comparing one stage procedure (right colon resection and anastomosis during the same procedure) (1S group) and two-stages procedure (right colon resection and ileocolostomy) (2S group). The primary endpoint was the comparison of the rate of textbook outcome defined as patients without any postoperative major morbidity, no postoperative day 90 mortality, no postoperative readmission and who returned home at 3 months.
Results: A total of 90 patients (56 men) were included in this study (62 in the 1S group and 28 in the 2S group). The textbook outcome was higher in the 1S group (39% vs 14%, $P = 0.02$). The rate of definitive stoma was lower in the 1S group 22% vs 75%, $P < 0.0001$). In multivariate analysis, the two-stages procedure was a risk factor for definitive stoma and failure of the textbook outcome.
Conclusion: Two-stages procedure is a risk factor to increase the risk of definitive stoma and to avoid a textbook outcome.

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P503

Neoadjuvant long-course chemoradiotherapy (ChemoRT) improves short-term outcomes in rectal cancer

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Aim: Neoadjuvant chemoradiotherapy (CRT) has been shown to improve outcomes in locally-advanced rectal cancer in Europe and America. There is little published data in Asia and this study aims to review outcomes over the last 5 years in Singapore.
Method: Patients in Singapore General Hospital were referred for ChemoRT if they met criteria set out in the European guidelines. Consecutive patients undergoing neoadjuvant CRT followed by curative surgery from January 1st 2013 to December 31st 2017 were assessed for outcomes including MRI-features, radiologic tumour-regression-grade (TRG). Mandard-TRG, sphincter-preservation, and local recurrence.
Results: 143 patients (105 male, 38 female) were reviewed. CRT resulted in significant tumour-regression in 50% of patients. Pathological-complete-regression occurred in 8.5% of patients on histological analysis. Median distance from the tumour to the top of the anal increased by 20% in cases of attempted sphincter-preservation. Median duration from completion of CRT to surgery was 9.4 weeks (IQR 6.8–11.9 weeks). Twenty-three patients (16.1%) required an abdominoperineal-excision-of-rectum. Post-operative morbidity including wound breakdown and infection was not significantly different.
Conclusion: Neoadjuvant CRT is safe and effective before surgery in the treatment of locally advanced rectal cancer. Longer-term outcomes are still awaited.

P504

Robotic surgery for rectal cancer; 607 consecutive cases in a single institute

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Aim: The Aim of this study was to assess the short-term and oncological outcomes of robot-assisted laparoscopic surgery (RALS) for rectal cancer, including robotic, autonomic nerve-preserving, lateral lymph node dissection (RALLD), a new, technically challenging procedure.
Method: A retrospective study of 607 consecutive patients.
Results: There were 403 males and 204 females; 220 (36.2%) had cT3, and 65 (10.7%) had cT4 tumor. The types of procedures performed were: 453 anterior resections, 93 intersphincteric resections, and 61 abdominoperineal resections. RALLD was performed in 202 patients (33.3%). Neoadjuvant chemoradiation was performed only for 5.6% of all cases.

The overall median operative time was 257 (109–683) min. None of the cases was converted.

There was no mortality. The overall complication rate for Clavien-Dindo classification grade III-IV was 3.3%.

The 3-years local relapse free survival for pStage I-III was 98.5% and 3-years relapse free survival was 98.2% for pStage I, 89.6% for pStage II, and 79.6% for pStage III.
Conclusion: RALS can be performed with low morbidity, low conversion rate, and good oncological results. In the future, well established prospective studies will need to be demonstrated to justify the widespread use of this expensive approach in patients with rectal cancer.

P505

Risk factors and emergency visiting of stoma-related complications after laparoscopic rectal surgery with temporary loop stoma

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Aim: The goals were to evaluate the incidence of stoma-related complications of laparoscopic surgery with temporary loop stoma and to identify risk factors by analyzing post-discharge status.
Method: The subjects were 303 patients who underwent this surgery between January 2014 and December 2016. Onset of stoma-related complications, and emergency visits, readmissions, and emergency operations were surveyed retrospectively.
Results: The most common complications were peristomal skin disorders (78.5%), followed by parastomal hernia (39.9%) and high output stoma (24.1%). Peristomal skin disorders caused emergency visits (6.6%), high output stoma caused readmission (3.6%), and stoma prolapse caused emergency operations (0.7%) most frequently. A cranial position of the stoma in the afferent limb was associated with a low incidence of stoma outlet obstruction and high incidences of mucocutaneous separation and peristomal skin disorders. Not passing the middle of the rectus abdominis muscle was associated with parastomal hernia, and early parastomal hernia affected the incidence of stoma prolapse.
Conclusion: The incidence of stoma-related complications was similar to that in previous studies. Peristomal skin disorders, high output stoma, and stoma prolapse caused an unfavorable post-discharge status. Our identification of risk factors may allow these complications to be avoided in future procedures.

P506

Are departmental guidelines of carcino embryonic antigen assay levels being adhered to for pre-therapeutic decision making? An audit of current practice

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Aim: Carcinoembryonic antigen (CEA) is a glycoprotein raised in blood serum of colorectal cancer patients. CEA gauges treatment responses and surveillance for relapse after curative treatment. There are no national guidelines when CEA measurements should be taken. We aim to audit departmental guidelines where all patients should have CEA levels taken before initial treatment is started.
Method: Prospective data collection of 96 patients (51F:45M) with an MDT diagnosis of colorectal cancer during 1-year. All patients were reviewed for the presence of an initial measurement and the value after treatment was noted.
Results: 96 patients were diagnosed with colorectal cancer. 66/96 (68.8%) had a recorded and documented CEA value at MDT. 33/96 (32.2%) had CEA measurements performed after treatment was instigated.
Conclusion: This study shows that 32.3% of patients did not have CEA assays measured according to departmental policy. This large number of patients demonstrated a missing clinical information not available to the colorectal MDT members. Thus a large numbers of treatment decisions are being made without appropriate investigations being performed in the pre-therapeutic period. Specific recommendations include, better staff education, CEA values to be documented on MDT outcome sheets and the responsibility being the referring clinician.

P507

Narrow-band imaging improves detection of colorectal peritoneal metastases: a clinical study comparing advanced imaging techniques

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Aim: Advanced imaging techniques potentially improve detection and resection of colorectal peritoneal metastases (PM) in HIPEC patients. This study assessed four techniques for detection of colorectal PM: conventional white light imaging, narrow-band imaging (NBI), near-infrared indocyanin green fluorescent imaging (NIR-ICG), and spray-dye chromoendoscopy (SDCE).
Method: This prospective clinical study included patients with colorectal PM. During exploratory laparoscopy prior to cytoreduction and HIPEC all abdominal regions were inspected with (1)conventional white light imaging, (2)NBI, (3)NIR-ICG, and (4)SDCE. Primary endpoints were sensitivity and specificity for detection of PM, using pathological examination as reference standard.
Results: Between May 2016 and January 2018, 28 patients were analyzed with four different techniques, resulting in 169 biopsies. Sensitivity for detection of PM was 80.0% with conventional white light imaging, and increased to 96.0% ($P = 0.008$) and 85.7% ($P = 1.000$) with NBI and SDCE, respectively. Lesions were not fluorescent using NIR-ICG. Specificities for white light, NBI, and SDCE were 74.8%, 71.4% and 79.5%, respectively (not statistically significant). No adverse events occurred related to the imaging techniques.
Conclusion: Narrow-band imaging substantially and significantly increased detection of PM. This method is safe and feasible for improving detection of metastatic lesions and optimizing cytoreduction in patients with PM.

P508

Factors determining comparative survival in young and non-young colorectal cancer patients

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Aim: Young patients with colorectal cancer tend to present with more locally or generally-advanced-stage disease and also worse tumour pathomorphology. The impact of similar age characteristics on the comparative survival of young and non-young patients remains vague.
Method: Retrospective single-institution analysis of surgically treated CRC patients followed for 10 years. Comparative end-points as disease stage, tumour

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characteristics, multidisciplinary approach and treatment modalities, postoperative complications and survival rate were compared between younger group (≤45 years) and middle-aged group (46+ years). Relative excess risk models were used in order to perform uni- and multivariate survival analyses.
Results: A total of 1302 patient were included (yonger group – 49 patients). The latter were more likely to have stage III (39.6%vs24.6%) and IV (33.1%vs20.2%) disease ($P < 0.001$). Mucinous, signet-ring cell and poorly differentiated tumours are presented frequently in the younger group. The treatment in stage I-III did not differ between the two grops, except regarding adjuvant chemotherapy, more often given to young patients, which was associated with improved survival.
Conclusion: Young CRC patients with more advanced disease and more unfavourable tumour characteristics compared with middle-aged group. Adjuvant chemotherapy is more applicable to younger ones. Therefore, despite those characteristics, survival rates are comparatively equal.

P509

Long-term survival and quality of life following pelvic exenteration

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P510

Sacrectomy functional outcomes following pelvic exenteration for primary and recurrent pelvic malignancy

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Aim: To determine lower limb, quality of life (QOL) bowel, bladder and sexual functional outcomes following high (L5 to S2) and low (S3 and below) sacrectomy.
Method: Patients undergoing en bloc sacrectomy as part of a pelvic exenteration from 2008 to 2015 were included. Outcomes assessed, included lower limb (MSTS), QOL (SF-36), bowel, bladder (EORTC QLQ-CR29 and QLQ-C30) and sexual function (SHIM-male and FSFI-female). The difference in outcomes between high and low sacrectomy was analysed using t tests.
Results: Of the 143 sacrectomies identified, 55 were eligible and 30 were included. Most patients were males (60%) presenting mean (SD) age of 59.6 (11.9) years and underwent low sacrectomy (77%). High sacrectomy patients had significantly worse lower limb motor function (MSTS, High: 56.7 ± 25.1 vs Low: 77.5 ± 20.43; $P = 0.03$), physical (SF-36 PCS, High 36.1 ± 9.2 vs Low 43.0 ± 11.0; $P = 0.001$), and mental health scores (SF-36 MCS, High: 47.1 ± 10.3 vs Low: 51.0 ± 9.6; $P = 0.04$). There was no difference between bowel, bladder and sexual function scores ($P > 0.05$).
Conclusion: Patients undergoing high sacrectomy have significantly worse lower limb function and QOL, but comparable bowel, bladder and sexual functional outcomes.

P511

Fast-tracked competency through an externally mentored program. Early experience of a single tertiary centre with management of peritoneal malignancies

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Aim: Cytoreductive Surgery (CRS) and Hyperthermic Intraperitoneal Chemotherapy (HIPEC) is gaining acceptance for selected patients with peritoneal malignancies (PM). As with any high risk procedures, it is important to address learning curve issues and demonstrate acceptable clinical and oncological outcomes. This study describes the early experience of a newly established PM centre in Australia under the guidance of an experienced mentor from Basingstoke, United Kingdom.
Method: Retrospective review of a prospectively maintained database of the first 50 patients who underwent CRS and HIPEC between April 2017 and April 2018 at a newly established PM centre in Sydney.
Results: A total of 136 patients had been referred. All were reviewed at a dedicated multidisciplinary meeting. 50 (37%) patients (26 male) underwent CRS and HIPEC. Of these, 47 (94%) patients underwent complete cytoreduction.Main indications for surgery were appendiceal neoplasms and colorectal peritoneal metastases (22, 44% each). Median duration of surgery was 7.5 hours (IQR: 5.8–10). Median length of stay was 13.5 days (IQR: 10.3–21.5). There was no 30-day mortality. 12.5% experienced a grade III or IV Clavien-Dindo complication.
Conclusion: This study demonstrates the safety and feasibility of establishing a new PM unit under the guidance of an experienced PM mentor.

P512

Quality of life after cytoreductive surgery and HIPEC. Short term outcomes from a prospective cohort study

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Aim: Cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) is an established treatment for peritoneal malignancies (PM). However, it can also adversely affect patients' quality of life (QoL). This study reports short term QoL outcomes following CRS and HIPEC.
Method: Patients undergoing CRS and HIPEC at a single referral centre between April 2017 and April 2018 were prospectively recruited. QoL was measured using short-form 36 version 2. Physical (PCS) and mental component scores (MCS) were scored according to the manual (higher scores reflect better QoL). Data was collected at baseline, pre-discharge, 3 and 6 months post-operatively. PCS and MCS trajectories were described.
Results: Of 50 patients, 46 (92%) entered the study. Median PCS and MCS decreased from baseline (43.1 [IQR 35.3–55.8] and 50.5 [IQR 43.7–55.7] respectively) to pre-discharge (34.25 [IQR 28.1- 41.0] and 48.6 [IQR 37.8–55.5] respectively). Both PCS and MCS returned to baseline within 3 months (43.0 [IQR 37.6-51.3] and 52.5 [IQR 45.4–58.2] respectively). At 6 months, PCS remained unchanged (40.3 [IQR 37.9- 51.1]) while MCS continued to improve (52.3 [IQR 41.0–57.0]).
Conclusion: Short term QoL after CRS and HIPEC is acceptable. QoL returned to baseline quicker than anticipated. Further studies are needed to describe the long-term QoL.

P513

Oncologic risk of unintended organ preservation after chemoradiotherapy for mid or low rectal cancer: the double-edged sword of intended organ preservation

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Aim: Organ preservation as a paradigm shift after chemoradiotherapy in patients with rectal cancer may increase uncertainty in the oncologic outcomes. This study aimed to compare oncologic outcomes of local excision, watch-and-wait, and organ preservation against medical advice.
Method: Organ preservation after chemoradiotherapy for rectal cancer was included during periods I (2005–2010; $n = 1208$) and II (2011–2017; $n = 1588$). The study population comprised local excision (group A, $n = 28$), watch-and-wait (group B, $n = 13$), and the unintended (group C, $n = 101$) organ preservation. The primary endpoint was 3-year overall survival.
Results: Tumor distance was similar between each group. Group C increased from 3.3% to 3.8% from period I to II, in parallel with those in group A or B from 1.1% to 1.8%. During the median follow-up of 34 (range 3–155) months, the 3-year overall survival in group C was worse compared with those in groups A and B (59.7% *vs* 87.7% *vs* 100%, P<0.01). No evidence of disease was noted in only 19.8% of patients in group C.
Conclusion: This study confirms that unintended organ preservation increases oncologic risk after chemoradiotherapy for rectal cancer, despite short-term follow-up. Therefore, these findings should inform patients with rectal cancer against medical advice.

P514

Supplementation with omega-3 fatty acids and survival after colorectal cancer surgery – a randomised controlled trial

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Aim: To assess the effects of treatment with oral nutritional supplements (ONS) of omega-3 fatty acids (FA) on survival in patients undergoing colorectal cancer (CRC) surgery.

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Method: 148 CRC patients were randomised to either an omega-3 FA enriched ONS (200 ml Supportan®) or a standard ONS twice daily, 7 days before CRC surgery. Each patient was followed until death or 5 years after surgery. The Kaplan Meier method calculated the 5-year survival. The effect of treatment was assessed using a Cox model.
Results: The 5 year survival for patients treated with omega-3 FA ONS was 69.2% (95%CI[56.5;78.9]) and 81.7% (95%CI[69.4;89.4]) in the placebo group. Treatment with omega-3 FA ONS affected the survival of patients treated with adjuvant chemotherapy when adjusted for patient age, sex, ASA-score, and disease stage. The hazard ratio for patients in the treatment group was 7.54 (95%CI[1.45;39.32]) compared with 0.56 (95%CI[0.15;2.07]) in the placebo group ($P = 0.016$).
Conclusion: Survival was highly similar in the two treatment groups. However, in patients receiving adjuvant chemotherapy, treatment with omega-3 FA increased the mortality. Pre-treatment with omega-3 fatty acids before CRC surgery cannot be recommended.

P515
Trends of evolution of kirwan score after perineal pseudocontinent colostomy for ultra-low rectal adenocarcinoma

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Aim: To evaluate the evolution of functional results of the perineal pseudocontinent colostomy (PCPC) after abdominoperineal resection (APR) for low rectal adenocarcinoma using the kirwan score.
Method: From January 1999 to January 2011 47 patients with PCPC were reviewed. Functional results were assessed at 6 months, 1 year, 2 year and the last visit according to the kirwan classification scale. A median follow up of 61 months. The results were good for Kirwan A-B and the cochrane Q test was used to assess the overall curse and changes over time of kirwan score and colic irrigations and correct benferoni *post hoc* to determine the significant cut off.
Results: both kirwan score and colic irrigation rhytme among the 4 kinds period retrospectively ($Q = 56.7$, $P < 0.001$ and $Q = 41.9$, $P < 0.001$) using correct Benferoni *post hoc* $P = 0.008$ showed that at 6 months functional results were poorer than all the other 3 check point and that patients at that time used daily colonic irrigation.
Conclusion: this study showed that functional results (using kirwan score) of PCPC after APR for low rectal adenocarcinoma improves from 6 months to 1 year and remain stable over time.

P516
Three years functional and oncological resultsafter low rectal adenocarcinoma surgery -Moroccan Cohort Study

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Aim: The aim of this study was to evaluate the 3 year oncological and functionnal results after low rectal adenocarcinoma management in a Moroccan teriary cancer center.
Method: Between 2011 and 2015, a total of 81 rectal resections with total mesorectal excision for low rectal adenocarcinoma were performed. In case of abdominoperineal resection (APR) patients were offered a reconstruction using perineal pseudocontinent colostomy (PCPC). Long term follow up was used to analyse predictive factors for overall survival. Patients alive at 3 years were questioned for functional results (Wexner score) and Quality of life (EORTC CR29 and C30 questionnaire)
Results: The rate of 5 year OS was 72.5%. in a Multivariate analysis OS was significantly impaired in elderly patients and locally advanced tumor (pT3and PT4) ($P = 0.03$ and $P = 0.01$).At 3 years 36 patients agreed to functional and QOL evaluation. Median wexner score of anterior resection and APR with PCPC were satisfiying respectively 7 and 10. Overall QoL scores (QLQ C-30 and QLQ CR29) were equivalent for colorectal anastomosis and PCPC
Conclusion: In moroccan population, for very low rectal tumors, both sphincter saving technique and APR followed by PCPC provide equivalent results. The choice of procedure shoud be based only on oncological criteria.

P517
Does robotic TME for rectal cancer lead to improved survival at 3 years?

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Aim: Although robotic platform gives enhanced views and better access yet high costs have remained a concern. In the recently concluded ROLARR trial there was no oncological differences between laparoscopic and robotic arms. We aim to analyse prospective data for robotic TME from a high volume single centre with particular focus on 3 year disease free and overall survival (DFS, OS)
Method: All rectal cancers operated using the Da Vinci Si Surgical platform at our institute between 5/2013–5/2017 were included in the study. Data for patient demographics, tumour staging, operative time, length of stay, postoperative complications, pathology, morbidity and mortality was collected from a prospective database.
Results: 201 patients underwent robotic rectal cancer surgery (130 male, median age 70, BMI>30: 62). Operating time: 240 min, no conversions, R1 in 14 patients, leak 3; no stoma in 37. Median LOS 6 days (3–48). One patient had local recurrence and 3 patients both local and distal metastases. Overall 3 year survival: 94.5%; 3 year DFS: 87%. COLOR II trial showed OS 86.4% and DFS of 74.8% in comparison.
Conclusion: Robotic TME surgery is showing promising results with improved outcomes and a trend towards better 3 year overall and disease free survival.

P518
Utility of circulating tumor DNA to assess tumor dynamics for anorectal malignant melanoma

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Aim: Anorectal malignant melanoma (ARMM) is a rare tumor, which does not have biomarkers; it is difficult to monitor disease status. In this study, we investigated whether circulating tumor DNA (ctDNA) can be used as a biomarker in ARMM.
Method: We included two subjects of stage III ARMM patients who underwent abdominal perineal resection + lateral lymph node dissection. We identified cancer specific mutations by comparing cancer tissue and lymphocyte using Next-generation DNA sequencing (Ion Ampliseq Cancer Hotspot Panel v2). The quantification of ctDNA in 2 ml of plasma was performed by digital PCR system.
Results: In case 1, ctDNA (two types of KIT mutant genes) were detectable from plasma samples before surgery (① 35.4 copies / ml, VAF 1.20%, ② 49.5 copies / ml, VAF 1.69%). The ctDNA decreased from 887 copies / ml to 32 copies / ml after administration of nibormab to lung metastasis that appeared at 12 months after surgery. In case 2, NRAS mutant gene was detectable from the plasma sample at surgery (22.9 copies / ml, mutation rate 0.66%), ctDNA was not detected from the plasma sample after curative resection.
Conclusion: Even in ARMM, a rare tumor, ctDNA is useful for therapeutic monitoring.

P519
The role of RAS and BRAF mutation as prognostic factor depending on tumor sidedness in stage III colorectal cancer

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Aim: RAS/BRAF mutation poorly influences survival in stage III colon cancer. It is controversial whether the gene mutations relevant to the prognosis of colorectal cancer by tumor location. This study aimed to clarify the prognostic role of RAS/BRAF depending on tumor location in stage III colon cancer.
Method: The study population comprised patients in stage III colon cancer from 2007 to 2015. Dividing into two groups by tumor location, the association between RAS/BRAF mutation and 5-years disease free survival (5-ys DFS), 5-years overall survival (5-ys OS) were assessed.
Results: Among the 275 patients with full molecular data analyzed, 132 (48%) had a right-sided tumor. 81 (61%)/52 (36%) were mutated for RAS or BRAF in the right-sided/left-sided group respectively. In the right-sided group, RAS or BRAF mutation was not a prognostic factor for 5-ys DFS (66% vs 71%, $P = 0.67$) and 5-ys OS (78% vs 78%, $P = 0.85$) However, in the left-sided tumor, RAS/BRAF mutation was a worse 5-ys DFS (72% vs 88%, $P = 0.018$) and a similar 5-ys OS (83% vs 89% $P = 0.39$).
Conclusion: It seems in only left-sided colon cancer RAS/BRAF is independent prognostic factor for DFS.

P520
Therapeutic effect of neoadjuvant chemoradiotherapy for locally advanced lower rectal cancer; sphincter preservation and function

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Aim: Neoadjuvant chemoradiation (NACRT) for advanced lower rectal cancer has been done for the purpose of preventing local recurrence and preserving sphincter function. We explored the sphincter preservation and function in rectal cancer patients with NACRT.

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Method: cT3 or cT4 lower rectal cancer patients received NACRT (42.6 Gy radiation and oral chemotherapeutic agent). All patients underwent NACRT followed by mesorectal excision+ lateral lymph node dissection.
Results: We analysed 47 cases. As the pathological response by NACRT, 27 cases (57.4%) were classified into Gr2 (viable tumor cells remain in less than 1/3 of tumorous area) or more including 2 pCR. Thirty two sphincter preserved procedures with diverting stoma (DS) were performed. Sphincter preservation rate was 68% (Grade 2 or more; 77.8%, less than Grade 2; 55%). In DS patients, 21 cases were performed stoma closure. Re-colostomy after stoma closure was required in 4 cases, and all of which were ISR cases and 2 cases of which were suffered from sphincter dysfunction.
Conclusion: NACRT for cT3 or cT4 lower rectal cancer contributed to sphincter preservation surgery such as ISR in especially effective cases. In spite of sphincter preservation, permanent stoma was often required due to postoperative complications, recurrence, and sphincter dysfunction.

P521
Propensity score analysis of short and long terms outcomes following curative surgery for rectal cancer in elderly

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Aim: The aim of this study is to compare surgical and oncological outcomes between elderly and non-elderly patients treated for rectal cancer.
Method: We retrospectively divided the cohort into two groups: patients with an age at presentation of <75 years old versus >=75 years old. After propensity score analysis 160 patients were correctly matched, 80 for each group.
Results: No difference was seen in term of post-operative complications, particularly anastomotic leak rate was comparable. 30-days mortality was similar between groups. Patients under 75 years old were significantly most treated with adjuvant chemotherapy or radiotherapy after rectal cancer surgery ($P = 0.0001$) independently from tumor staging that was balanced between two groups. We did not discover the same difference analysing proportion of neoadjuvant radiotherapy and chemotherapy. OS was significantly lower for elderly patients when compared with younger patients while considering DFS and cancer specific mortality we don't find any difference between groups.
Conclusion: This study suggests that major rectal cancer surgery with curative intent should not be denied to the elderly population on the basis of high age alone.

P522
Impact of new 2-weeks wait suspected colorectal cancer referral proforma on caseload, colorectal cancer and other body site cancers pick up rate

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Aim: National Institute of Clinical Excellence (NICE) introduced new 2-weeks wait suspected colorectal cancer referral (2WW CRR) proforma in January 2016 within NHS. The aim of this study is to examine if this implementation had any impact on the number of referrals and subsequent colorectal cancer (CRC) pick up rate in our local trust.
Method: The number of 2WW CRR and pick up rate for CRC was obtained from prospectively maintained cancer database. These figures were compared prior (April 2011 to December 2015) and after (January 2016 to September 2017) the introduction of new 2WW CRR.
Results: From April 2011 to Dec 2015, the mean 2WW CRR was 1170 per year. From January 2016 to September 2017, the mean 2WW CRR increased to 1666 per year. Colorectal cancer pick up rate was 301 (5.4%) and 138 (4.7%) respectively. The pick up rate for other body site cancer was 13 (0.2%) and 19 (0.6%) respectively.
Conclusion: Increasing number of patients are being referred via the 2WW CRR pathway without any yield in colorectal cancers diagnosed from this pathway. However, it yielded higher pick up rate for cancer of other body sites.

P523
Transanal total mesorectal excision for rectal cancer: a single centre experience

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Aim: Transanal total mesorectal excision (TaTME) offers a promising alternative to standard abdominal approach for rectal cancer. The aim of this study is to report on experiences from a single centre performing TaTME for rectal cancer.
Method: Forty-two consecutive patients with histologically proven rectal adenocarcinoma underwent TaTME between November 2015 and March 2018 in a single centre. A retrospective analysis of a prospective database was undertaken.
Results: 93% of patients were male. The mean BMI of patients was 27.8 kg/m^2. The mean tumour distance from the anal verge was 7.2 cm. The rate of conversion to open surgery from planned minimally invasive approach was 7.2%. Mean operating time was 6 hours. The median lymph node yield was 21 (10–65). R0 resection was achieved in 92.9% of patients (39/42). Complete or near complete TME specimen was delivered in 100% of cases. 7 patients had a significant post operative morbidity (Clavien-Dindo grade III ≤). Median length of stay was 7 days (3–18).
Conclusion: This data suggests that TaTMe is a feasible, safe operation for patients with rectal cancer with an acceptable pathological outcome. Further studies are required to investigate the long term oncological outcomes of TaTME and to optimise patient selection.

P524
Systematic review of postoperative mortality following colorectalresection for cancer in low- and middle-income countries

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Aim: To determine 30-day mortality following colorectal cancer (CRC) resection in low- and middle-income countries (LMICs).
Method: A systematic literature search was conducted to identify studies reporting 30-day postoperative mortality rates (POMR) following of CRC resection. Secondary outcomes included 30-day major complications (Clavien-Dindo grade III-V) and anastomotic leak.
Results: A total of 89 studies were identified from 14 middle-income countries (MICs). No studies were identified from low-income countries (LICs). This study included 9 randomised-controlled trials, 8 prospective cohort studies, 68 retrospective cohort studies and 2 retrospective case-control studies. Overall POMR was 1.4% (254/18309). POMR was significantly higher in emergency compared to elective surgery (odds ratio: 13.40, 95% confidence interval 4.33–41.48, $P < 0.0001$). However, it was not significantly different between lower and upper MICs (OR: 1.44, 95% CI 0.96–2.17, $P = 0.0807$). The overall 30-day major complication rate was 6.3% (185/2936) and anastomotic leak rate was 3.4% (462/13596).
Conclusion: Low morbidity and mortality following CRC resection have been reported in MICs, however, this may reflect selective reporting from the best-resourced centres. The lack of data from LICs highlights the need for high-quality multicentre studies to identify real world outcomes and targets for improvement.

P525
Preoperative chemotherapy for locally advanced rectal cancer

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Aim: The aim of this study is to verify the outcome of preoperative chemotherapy for patients with locally advanced rectal cancer.
Method: From 2006 to 2014, 23 cases of primary locally advanced rectal cancer patients received preoperative chemotherapy. The chemotherapy regimen, therapeutic effect, surgical procedures, and survival were analyzed.
Results: Oxaliplatin-based chemotherapy was introduced in 22 patients (95.7%). Bevacizumab and Cetuximab were combined in 12 and 3 cases, respectively. The average cycles of the chemotherapy were 8.2 courses for mFOLFOX6 regimen and 4 courses for XELOX or SOX regimen. PR was obtained in 22 cases according to the therapeutic effect on the image, except for one case of SD. Sphincter preserving operation rate was 56.6%. Grade 2 or higher histopathological effects were obtained in 6 cases (26.1%) and RM0 was confirmed in 18 cases (78.3%), with one pCR patient (4.3%). Postoperative complications occurred in 8 cases, such as 4 cases of pelvic infection (17.4%) and 4 cases of anastomotic leakage (17.4%). The recurrence was observed in 5 cases (21.7%).
Conclusion: The neoadjuvant chemotherapy including Oxaliplatin for locally advanced rectal cancer could achieve relatively good local control. Although, complication rate and recurrence rate needed to be improved.

P526
Low rate of local recurrence detection by rectoscopy in follow-up of rectal cancer

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Aim: The main goal of this study is to examine the effectiveness of rectoscopies to detect local recurrences in patients operated with low anterior resection for rectum or rectosigmoid cancer.
Method: In this retrospective study 201 patients, who were operated with low anterior resection for rectal or rectosigmoid cancer in 2007–2009 and followed up

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with rectoscopies and imaging, were included initially. 91 patients were excluded from the analysis for various reasons, making 110 patients eligible for analysis.
Results: 613 rectoscopies were performed, 48 biopsies taken. 6 local recurrences were detected amongst the 110 patients. 3 of these were first detected by rectoscopy and 3 by computed tomography (CT). Two of the local recurrences were detected outside the follow-up programme because of symptoms, 1 by rectoscopy and 1 by CT. 3 out of 613 (0.5%) rectoscopies led to detection of local recurrence. Sensitivity and specificity of rectoscopy to detect local recurrence was 0.50 and 0.93 respectively.
Conclusion: The effectiveness of rectoscopy is poor. Only 3 out of 613 rectoscopies (0.5%) detected local recurrences. Due to extramural growth of some recurrences, also the sensitivity is very low. Based on our results, routine rectoscopy in surveillance of asymptomatic patients cannot be recommended.

P527
The management of pelvic hemorrhage due to oncological surgery

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Aim: To analyse the causes, management, and outcomes of intraoperative hemorrhage in patients undergoing complex pelvic surgery.
Method: Patients who had intraoperative hemorrhage during complex pelvic surgery at 11 tertiary referral centers between 1997–2017 were included.
Results: There were 120 patients (75 males) with a mean age of 56 years. Major bleeding sites were presacral venous plexus (75%) and internal iliac veins (14%). Although hemorrhage was managed simultaneously in 114 patients. Electrocautery use (23%), pelvic packing (22%), suturing (6%), thumbtacks application (6%), muscle welding (4%), energy device use (2%), topical hemostatic agents (2%) were the management strategies while as combined techniques were used in the remaining (36%). Morbidity and mortality rates were 40% and 2%, respectively. Surgical site infection (12%) was major complication. Preoperative high CRP levels ($P = 0.04$), the use of neoadjuvant therapy ($P = 0.04$), the ratio of mild bleeding ($P = 0.016$), longer time between onset and ending of bleeding ($P = 0.006$) and higher amount of packs of blood required ($P = 0.005$) were factors associated with higher morbidity rates.
Conclusion: Prompt decision making and precise action are the key factors to control hemorrhage in complex pelvic surgery. Patients receiving neoadjuvant treatment and increased inflammatory status are prone to develop hemorrhage related morbidity.

P528
The role of laparscopic surgery for emergency resection of colorectal cancer: a population-based study

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P529
Endoscopic features of response to neoadjuvant (chemo) radiotherapy for rectal cancer: preliminary results

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Aim: To assess the diagnostic performance of restaging endoscopy for selection of luminal complete response (CR) after neoadjuvant (chemo)radiotherapy for rectal cancer.
Method: Restaging endoscopy images of 65 patients were retrospectively scored by two readers on type of endoscopic feature and likelihood scores for CR. Reference standard was histology after surgery or regrowth-free survival ≥2 yr in a watch-and-wait approach. Overall diagnostic performance and positive predictive value (PPV) for CR per feature were calculated.
Results: Median time to endoscopy was 9 (IQR 8–12) weeks, and from endoscopy to surgery 22 (IQR 15–45) days. AUC, sensitivity and specificity for the prediction of CR with endoscopy were 0.74 (95%CI: 0.66–0.89), 69% and 79% for reader 1, and 0.81 (95%CI: 0.71–0.92), 66% and 91% for reader 2. Interobserver agreement was substantial (k = 0.68). PPV for CR was 81/87% when a white scar was present, 43/75% and 35/41% when adenomatous tissue or flat ulcer were present, and 0/20% and 21/30% when an irregularly bordered ulcer or tumour mass were present.
Conclusion: Endoscopy predicts complete response at ±9 weeks with sensitivity of 66–69% and specificity of 79–91%. Endoscopic features can be used to select patients for an extended observation period to select for organ-saving treatment.

P530
Complications and impact on quality of life of Vertical Rectus Abdominis Myocutaneous (VRAM) flaps for reconstruction in pelvic exenteration surgery

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Aim: Pelvic exenteration for malignancy occasionally requires reconstruction with vertical rectus abdominis myocutaneous (VRAM) flap. We investigated flap-related morbidity.
Method: Review of prospective tertiary referral unit database covering 2003–2016. Patient data and follow-up records until May 2017 were reviewed. Primary outcome was flap-related complications; secondary outcomes were quality of life, hospital stay, and readmission.
Results: 87/519 patients were included, median follow-up was 20 months (range 1–161). Median age was 60 years (IQR 51–66). Flap-related complications occurred in 59 patients (68%), with minor recipient-site complications occurring in 33 patients (38%). Fifteen patients suffered major recipient-site complications (17%), including flap separation ($n = 7$), partial ($n = 3$) or complete necrosis ($n = 4$). One patient required flap removal. Obesity was the only independent risk factor for short term flap-related complications ($P = 0.02$). Hospital stay was significantly longer in patients with short term major flap complications (median 65 days $P < 0.001$) and these patients reported lower QOL scores for role physical at 6 months ($P = 0.016$). In the long term, 12 patients developed minor flap-related complications and 11 patients developed major donor-site complications. Fourteen patients developed major recipient-site complications (16%), including enterocutaneous fistulas, sacral collections, perineal hernia or ulcer.
Conclusion: VRAM flaps should be used selectively in pelvic exenterations.

P531
Local excision for rectal cancer; a population-based overview of clinical practice and outcome

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Aim: Prescribing survival of rectal cancer patients after local excision (LE) or total mesorectal excision (TME) in a nationwide study.
Method: Patients reported to the National Cancer Registry with rectal cancer between 2005 and 2015 were identified and selected if treated with LE, with or without completion TME, or primary TME. Clinical node positivity and (neo)-adjuvant therapy were exclusion criteria. Kaplan-Meier method was used to compare survival.
Results: The number of LE or primary TME significantly increased (LE 60 to 217; TME 468 to 928, $P < 0.001$). Overall survival was 85.1% for pT1 patients treated with LE only, which did not improve after cTME (83.8%, $P = 0.835$) and did not differ from primary TME (87.3%, $P = 0.288$).

LE was performed in 300 ≥ pT2 tumours. In 107 (35.7%) of these patients cTME was omitted, resulting in worse survival, compared to cTME (64.8% *vs* 86.9% resp., $P < 0.001$). Survival rates of cTME compare primary TME (e.g. 76.5%, $P = 0.007$).
Conclusion: LE and primary TME only for rectal cancer significantly increased in the Netherlands during the last decade. LE is oncologically safe for pT1. Since survival is compromised after LE for ≥ pT2, cTME should be recommended as survival equates primary TME surgery.

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P532
Utility of routine histological examination of stapler doughnuts at low anterior resection for rectal cancer

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Aim: To evaluate the clinical utility of the routine histological examination of distal stapler doughnuts at low anterior resection (LAR) in neoplastic pathology.
Method: Prospective observational study, 304 patients were included, they underwent a LAR with mechanical anastomotic stapler for neoplastic between 2009–2016, after a mean follow-up period of 22 months. 15 patients were excluded from the study. Histopathological alterations of the distal stapler doughnuts, the impact on the management and follow-up of the patients were analyzed. Other variables studied were patient and tumor characteristics and the surgical technique used.
Results: Histopathological alterations were observed in 14 patients. The histopathological findings were: 3.6% with nonspecific inflammatory changes, 0.3% tubular adenoma, 0.3% hyperplastic polyp and 0.3% microscopic neoplastic infiltration that correlated with positive distal margin for neoplasia in the tumor piece and local recurrence in the stapler anastomosis. In addition, 8 cases of local recurrence their stapler doughnuts were undamaged.
Conclusion: We believe that in our setting the routine histological examination of stapler doughnuts could be avoided, provided that the distal margin of the surgical piece is macroscopically negative, because of the small percentage of cases with tumor histological finding in the doughnuts that implies a clinical change.

P533
Tumoral response to neoadjuvant therapy in T3b rectal cancer

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Aim: To evaluate the response and the local recurrence in patients with short-course and long-course of neoadjuvant therapy for T3b rectal cancer.
Method: Prospective observational study, which included 127 patients with T3b rectal cancer. They received short-course preoperative radiotherapy and long-course preoperative chemoradiotherapy and after 8 week they underwent surgical treatment; between 2009–2016, after a mean follow-up period of 22 months. Tumor regression, locoregional and distant recurrences were analyzed.
Results: 127 patients were treated. A total exeresis of the mesorectum was performed in 76.2%, with an average of 13.1 lymph nodes, a mean of 0.86 was affected. 72.2% received long-course preoperative chemoradiotherapy. In the surgical piece, a complete tumor remission was observed in 12.8%. Regarding the lymph node response of patients cataloged from N1 preoperatively, 69.7% returned to N0-Nx and 34.1% of N2 returned to N1 and 58.8% to N0-Nx. Metastatic recurrence was identified as a local recurrence in 2.7% of the cases, of which 66.7% had not presented tumor regression after neoadjuvant.
Conclusions: In our setting, neoadjuvant therapy seems to show an effect on the tumor stage in rectal cancer, observing a percentage increase in complete tumor remission, which leads to a decrease in locoregional recurrence.

P534
Second primary colorectal cancer among the patients with endometrial cancer – a serial study

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Aim: Endometrial cancer is the most common gynecological malignancy in the United States. It has been reported that most second primary cancers occurring after an initial primary cancer could be explained by shared etiology or a late effect of initial treatment. Our aim is to evaluate the incidence of a second colorectal cancer among the patients diagnosed with endometrial cancer.
Method: This is an initially retrospective study about the incidence of colorectal cancer among the women with endometrial cancer in our center for a period of 3 years (2014–2017).
Results: Our study comprises 22 patients with endometrial cancer, later diagnosed and operated for colorectal cancer: 4 for cancer of caecum, 10 for cancer of the sigmoid colon, 3 for rectal cancer and the rest for transverse colon cancer. The average interval for development of second colorectal cancer was 5.5 years.
Conclusion: The risk for second colorectal cancer after patients with endometrial cancer increases in the distal colon in young survivors.

P535
Disqualification of neoadjuvant rectal (NAR) score based on data of 6596 patients from the Netherlands Cancer Registry

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Aim: This study aims to validate the prognostic value of the neoadjuvant rectal (NAR) score in rectal cancer patients after neoadjuvant chemoradiotherapy (nCRT) as surrogate endpoint for overall survival.
Method: Data of 6596 patients undergoing nCRT and surgery was selected from the Netherlands Cancer Registry database. Patients with stage IV disease or receiving only short course radiotherapy before surgery were excluded. NAR scores were calculated using the formula: [5pN-3(cT-pT)+12]^2/9.61. Using Harrell's concordance (c)-index and Akaike's Information Criterion (AIC), the probability of concordance and the 'goodness of fit' of several models was evaluated. Bootstrapping was performed to compare models.
Results: The NAR score showed a c-index of 0.665. Single pathological parameters (pT or pN) showed similar concordance as the NAR score (c-index 0.663 and 0.655 respectively). Combining pT and pN resulted in better concordance (c-index 0.684), a simple cox-regression model with the NAR formula parameters (cT, pT and pN) improved the concordance further (c-index 0.694). Bootstrapping showed both models were superior to the NAR score. The NAR score showed the lowest AIC, indicating the worst fit to overall survival.
Conclusion: This study proves the NAR score to be insufficient as a surrogate endpoint.

P536
Rectal cancer: The Basingstoke experience from 2005 to 2017

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Aim: To outline the treatment and outcomes of rectal cancer within Basingstoke Hospital from 2005 to 2017.
Method: Data was analysed retrospectively from a prospective database of all rectal cancer patients.
Results: A total of 685 patients were diagnosed with rectal cancer between 2005 and 2017. 88 patients (13.0%) underwent palliative treatment or no treatment due to advanced disease or co-morbidities. Of the 597 patients (87.0%) who underwent treatment with curative intent, 63 patients (10.6%) had local excision, 526 patients (88.1%) had major surgery, and eight patients (1.3%) had complete response to chemo-radiotherapy. Of those undergoing resection surgery, 86.2% were treated by anterior resection, 10.8% by AP resection, and 1.5% each treated by Hartmanns and panproctocolectomy. Our R0 resection rate was 94.9%, and the local recurrence rate was 4.9%. Our 90 day mortality after resection surgery was 1.1%.

Within the cohort of patients who had complete clinical response to chemo-radiotherapy, seven patients are still alive with no evidence of disease recurrence of metastases (median follow up 25.4 months).
Conclusion: Our 13 years experience of treatment for rectal cancers has shown good outcomes and falls within national standards.

P537
Risk of stage progression after neoadjuvant treatment & abdominoperineal excision for locally advanced low rectal cancer

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Aim: Estimate the risk of stage progression after neoadjuvant treatment (NT) in low rectal cancer.
Methods: From 2001- 2014, 87 patients underwent NT radiation alone or with combined chemoradiation (CCR) followed by curative abdominoperineal excision (APE) for resectable lower third rectal cancer. The preoperative clinical stage prior to NT was compared with the postoperative pathological stage to estimate the rate of progression after NT. The risks associated with progression were evaluated.
Results: Of the 87 patients thirteen underwent neoadjuvant long-course radiotherapy without concurrent chemotherapy, while 32 patients underwent CCR with capecitabine alone or capecitabine plus cetuximab, and 42 patients underwent CCR with fluorouracil (5FU) alone or with leucovorin. For the pre-treatment clinical stages, 70 patients were stage III, 13 in stage II, and 4 in stage IV. For the post-excision pathological stages, 29 were stage I, 28 were stage III, 18 were stage II, and 4 were stage 4. Complete pathological response was achieved in 8 patients (9.2%).

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After NT, five patients (5.7%) progressed locally while no new patients developed distal metastasis.
Conclusion: A minority of patients progressed locally after NT. This suggests a need for more tumor-profiling to identify such tumors prior to NT.

P538
Curative-intent surgery for locoregional recurrence of colon cancer: institutional experience and review of the literature

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Aim: Locoregional recurrence after curative resection of colon cancer is an underreported clinical entity, especially isolated recurrences that are amenable for surgery. The purpose of this study was to describe an institutional experience with curative-intent surgery for isolated locoregional recurrence of colon cancer (LRCC), whether or not as part of a multimodality approach, with review of the literature.
Method: Patients were identified from a prospectively maintained database since 2010. Data were retrospectively obtained on demographics, surgical procedure, histopathology and outcome. The PubMed and Medline literature databases (1980–2017) were searched for publications on the incidence of LRCC and surgical treatment.
Results: Fifteen patients underwent resection of isolated LRCC between 2010 and 2017 at a University hospital. Median time to recurrence was 15 months. LRCC was classified as local recurrence ($n = 4$), mesenteric recurrence ($n = 4$), and regional lymph node recurrence ($n = 7$). Median time to recurrence was: local (9 month, 11 day), mesenteric (1 year, 17 day), nodal (1 year, 2 month, 16 day). 8 patients are alive without disease and 4 patients with evidence of disease. Median survival was 28 months.
Conclusion: Colon cancer patients might present with isolated LRCC, and surgery has the potential to gain long-term disease control in some of these patients.

P539
Straight to test nurse endoscopist led clinic – A new method to expedite colorectal cancer diagnosis

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Aim: To assess the effectiveness of straight-to-test nurse endoscopist led clinics (STTNLC) in reducing the breaches of colorectal cancer investigation and diagnosis time, compared to previous pathways
Method: Data were retrospectively collected from November 2017 to March 2018. All patients' referrals were vetted to either STTNLC clinic or outpatient consultant clinic based on their suitability. Patients attended STTNLC were counselled and pre-assessed by nurse endoscopist for the appropriate test. The 2-week wait target was maintained throughout the process
Results: 282 out of 508 referrals (55.5%) were booked onto the STTNLC within 2 days of referral. Clinics were run 5 days per week. The 264 patients were sent for investigations, 5 were redirected to outpatient clinic and 13 were either returned to GP or deemed not suitable for further investigations. 19 colorectal cancers were detected from the STTNLC group compared to 23 from the other group. There were no 14 days target breeches since STTNLC was commenced
Conclusion: STTNLC is a newly developed service which helps expediting colorectal cancer investigation and diagnosis. It ensures that all patients are seen prior to any diagnostics by a medic or nurse endoscopist. It also allows increasing outpatient clinic capacity which in-turn reduces waiting time.

P541
Oncological outcome based on the duration of adjuvant chemotherapy in colon cancer: less than 3 months *vs* more than 3 months

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Aim: Currently adjuvant chemotherapy with fluoropyrimidines and oxaliplatin is recommended for 6 months after curative surgical resection in patients with stage II high risk and III colon cancer. This study investigates oncological outcome of the patients who did not receive more than 3 months of adjuvant chemotherapy was evaluated.
Method: A retrospective study was performed in patients who were diagnosed with colon cancer and underwent curative surgical resection from 2009 to 2014. The patients who did not adhere to adjuvant chemotherapy were analyzed for the reasons. The oncological outcome was evaluated based on the adherence of adjuvant chemotherapy.
Results: Two common reasons for withdrawal include chemotoxicity (48.8%) and patient intolerance or refusal (41.4%). The OS and DFS for the patients who withdrew from the treatment within 3 months were 90 months and 70 respectively, whereas the values for the ones who maintained more than 3 months were 98 months and 81 months ($P < 0.016$ and $P < 0.029$, respectively).
Conclusion: Withdrawal of adjuvant chemotherapy within 3 months demonstrated significant reduction in the survival. Adjuvant chemotherapy minimum of 3 months after curative resection seems to improve survival rate in colon cancer patients of stage II with high risk features and III.

P542
Factors associated with short-term morbidity in patients undergoing total mesorectal excision following neoadjuvant treatment for rectal cancer: the Istanbul Group experience

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Aim: Neoadjuvant treatment is a major component of multimodal therapy for locally advanced rectal cancer (LARC). This study aims to evaluate the factors associated with short-term morbidity following radical surgery following neoadjuvant treatment for LARC.
Method: Between October 2010 and December 2017, patients undergoing total mesorectal excision (TME) after neoadjuvant treatment with curative intent for LARC at two tertiary referral centers were included. Patients with short-term (30 days) morbidity following surgery were compared with patients without morbidity.
Results: There were 199 patients. Overall morbidity was 20%($n = 39$) .While no factors were independently associated with short-term morbidity, male gender (79 vs 62%, $P = 0.04$), high ASA score (31 vs 13%, $P = 0.03$), tumor size (4 vs 3 cm, $P = 0.003$) and prolonged length of hospital stay (14 vs 7 days, $P = 0<0.001$) were associated with short-term morbidity. Age, BMI, prior history of abdominal operations, type of the neoadjuvant treatment, stage of disease and incomplete mesorectum rates (8 vs 3%, $P = 0.19$) and harvested lymph node numbers ($n = 30$ vs $n = 25$, $P = 0.42$) were similar.
Conclusion: Radical surgery after neoadjuvant treatment for LARC can be performed with acceptable operative morbidity. Postoperative care should be calibrated to reduce short-term morbidity in high risk groups such as males with large tumors and frail physiological condition.

P543
Adjuvant radiotherapy and local recurrence rates in intermediate risk rectal cancer

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Aim: To determine if adjuvant radiotherapy reduces risk of local recurrence in intermediate risk rectal cancer
Method: This retrospective study examined patients from the Australian Comprehensive Cancer Outcomes and Research Database (ACCORD) with pT3N0, pT1-2N1 rectal carcinoma who did not receive neoadjuvant chemoradiation prior to surgical resection. Statistical significance was determined with Fisher's exact and t-tests.
Results: A total of 173 patients with intermediate risk rectal cancer were identified, out of which 13 (7.5%) received adjuvant radiation. The overall local recurrence rate was 2.89%. However, no statistically significant differences in local recurrence (observation group: 5 out of 160 patients, radiation group: 0 of 13 patients, $P = 0.673$) or all-cause mortality ($P = 0.534$) were noted between the two groups. Both groups had similar gender proportions, although the group that received adjuvant radiation was substantially younger (59 vs 70 years, $P = 0.006$) and had more node-positive tumours (61.5% vs 17.5%, $P = 0.0001$). None of the 5 patients with local recurrence had involved distal margins, 4 had clear circumferential margins (CRM), and one patient did not have CRM data available.
Conclusion: Adjuvant radiotherapy did not appear to reduce local recurrence rates in intermediate risk rectal cancer, although this study was limited by low recurrence rates overall.

P544
Comparative assessment of 3D endorectal ultrasound to histopathology in patients referred for transanal endoscopic microsurgery

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Aim: Can 3D high frequency endorectal ultrasound discriminate between adenoma (pT0) and invasive rectal cancer (pT1-T4).

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Method: Between 2009 and 2018, 268 consecutive patients referred for local excision of rectal polyps underwent preoperative 3D endorectal ultrasound examination. Lesions where staged as uT0 – uT3. The 3D ultrasound staging was compared to histopathological staging done from excised-resected specimens.
Results: 262 patients were included, 6 patients excluded due to faulty diagnosis. The histopathological diagnoses were as follows: invasive rectal cancer in 61 patients and adenoma in 201 patients. The sensitivity of 3D endorectal ultrasound with regards to invasive cancer was 44% (27/61); Specificity 94% (188/201); Positive predictive value 68% (27/40); Negative predictive value 85% (188/222) and Accuracy 77% (201/262).
Conclusion: 3D endorectal ultrasound can distinguish between rectal tumours confined to the mucosa and tumours penetrating the submucosa or deeper with an accuracy that is probably clinically accepted, in patients with rectal lesions assessed as suitable for local resection.

P545
Are isolated transverse colon cancers different from right or left-sided colon cancers?

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Aim: Transverse colon cancers (TCC) are less frequently seen than right-sided (RCC) or left-sided colon cancers (LCC). The aim of our study is to assess clinical, pathologic and prognostic differences between TCC and RCC/LCC.
Method: 302 patients (RCC:119, LCC:160, TCC:23) who underwent curative surgery for colon cancer between October 2010 and August 2017, were included. Patients were compared in terms of demographic characteristics, type (laparoscopic/open) and duration of surgery, duration of hospital stay, pathological data and survival.
Results: There was no significant difference between groups for gender, age, BMI, type of surgery, TNM staging and prognostic factors. The mean operative time was shorter in RCC (*P*:0.025). The mean number of harvested lymph nodes was significantly different between three groups ($P < 0.001$). The tumor volume was significantly higher in RCC (*P*:0.01). After a mean follow-up of 48 months, the overall survival rate was lower in TCC (55%) than RCC (83%) and LCC (84%) (*P*:0.037)
Conclusion: There was no statistical difference between three groups except for the mean number of harvested lymph nodes and operative time. Overall survival rates show that TCC had poorer prognosis than RCC and LCC, in our case series.

P546
Clinical implications of the pathologic sub-types of right-sided colon cancers (RCC)

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Aim: We aimed to investigate the clinical effects of different pathologic sub-types of the RCC: Medullary cancer (MC), mucinous adenocancer (MAC), classic adenocancer (AC).
Method: This study included 112 patients (MC:10, MAC:23, AC:79) who underwent surgery between 2011 and 2017.Patients were compared in terms of demographic characteristics, type (laparoscopic/open) and duration of surgery, TNM staging, pathological data and survival.
Results: The percentage of female patients were higher in MC (90%) ($P < 0.05$). While the rate of laparoscopic surgery was 96% in MAC and 75% in AC, this rate was 50% in MC (*P*:0.004). T4 stage tumors were more frequent in MC (*P*:0.02). In MAC group, there was no stage 4 disease, compared to MC and AC who had 20% and 15% stage 4 disease respectively (*P*: 0.09). The tumor size and volume was greater in MC ($P < 0.05$). After a mean follow-up of 44 months, overall survival rates were 71% in MC, 91% in MAC and 77% in AC groups.
Conclusion: Minimally invasive procedures are less in MC group because of greater tumor size and volume. The absence of distant organ metastasis in MAC group may be a positive prognostic factor, in our case series.

P547
Is apical lymph node (ALN) metastasis in right and left-sided colon cancers differ?

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Aim: The aim of our study is to investigate the differences of ALN metastasis in right (RCC) and left-sided colon cancers (LCC).
Method: 204 patients who underwent surgery for RCC (n:83) or LCC (n:121) between 2010 and 2015 were included in this study. Prospectively collected data was evaluated retrospectively in terms of demographic characteristics, number of harvested lymph nodes, ALN metastasis and overall survival rates.
Results: The mean number of harvested lymph nodes were 31 in RCC and 27 in LCC ($P < 0.05$). There was no significant difference in terms of lymph node positivity, mean number of metastatic lymph nodes and mean number of harvested ALN. While 10 of patients in RCC had ALN metastasis (1 of them had skip metastasis), none of patients with LCC had ALN metastasis ($P < 0.001$). After a mean follow-up of 50 months, overall survival rates were 81% in RCC and 82% in LCC ($P > 0.05$).
Conclusion: ALN metastasis was detected in 12% of patients with RCC but was nil patient in LCC. However, it was seen that this difference did not affect the overall survival rate significantly.

P548
Lymph node yield and prognostic significance for colorectal cancer patients undergoing surgical resection

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Aim: To investigate the lymph node yield during surgical intervention and to evaluate their prognostic value in colorectal cancer patients.
Method: Retrospective data was collected with colorectal cancer patients who underwent resection between January 2012 and February 2018. Lymph node yield, disease recurrence and mortality data was identified using patient records. Analysis of survival statistics was conducted, including Kaplan-Meier estimates.
Results: 355 patients were included, with a mean age of 69 years. Right hemicolectomy (43%), anterior resection (26%) and Hartmann's procedure (7%) were the commonest performed surgeries. The mean number of lymph nodes retrieved was 18 (range 0–55). 19% of patients had <12 lymph nodes retrieved during surgery. 6% of participants had recurrent disease within 12 months of surgical intervention. 5 year mortality rate was 36%. There was no statistical significance between low (<12) vs high (>12) yield node retrieval and patient survival at 1 ($P = 0.97$) and 5 years ($P = 0.77$).
Conclusion: The identification and assessment of lymph node metastasis in colorectal cancer is essential for evaluating treatment options, patient prognosis and mortality. Lymph node yield has been a subject of ongoing debate and our data suggests no statistical difference in patient survival between low and high yield lymph node retrieval.

P549
The SuperSeton for perianal fistulas: a knotless solution

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Aim: Perianal fistulas are a common incapacitating problem. Many patients are treated by seton drainage to prevent recurrent abscess formation. For centuries, vessel loops or sutures have been used for seton drainage and the knot is well-known for causing complaints. The aim of this study was to determine the feasibility and the advantages of the knotless SuperSeton.
Method: In this prospective cohort study, we included all patients ≥18 years with drained or undrained perianal fistulas and no defunctioning stoma. Primary outcome was seton failure (loosening of the connection). Secondary outcomes were quality of life measured by the PDAI ('Perianal Disease Activity Index') and complications.
Results: Sixty patients (42% male, mean age 42 (SD 13.16)) were included between August 2016 and March 2018. In total 79 SuperSetons were placed (50 knotted seton replacements). Eleven SuperSetons failed after 3 months follow-up. Replacement of the knotted seton significantly decreased pain ($P<0.001$) and discharge ($P = 0.024$) measured by the PDAI. Furthermore, 71% reported less cleaning problems. Eight patients developed a perianal abscess. Five patients required a re-intervention.
Conclusion: The SuperSeton is a feasible novel technique with promising short term results. Drainage of perianal fistulas by the SuperSeton might be preferred over the conventional knotted seton.

P550
Transanal open hemorrhoidopexy: good results after a follow up of 8 years

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Aim: We reviewed the results after Transanal Open Hemorrhoidopexy after a follow up of at least 8 years.

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Method: All patients had been operated in our institution. Out of 148 patients operated more than 8 years ago 68 were alive and capable of answering a questionnaire in person or in a telephone interview.
Results: There had been no perioperative complications. Follow up was 96 months at least (median 110.8). Indication for the operation was symptomatic 2° or 3° hemorrhoids. Leading symptom was bleeding (n = 21) and discomfort (n = 22). Immediately after the operation the symptoms had improved considerably or completely in 45 patients (66.2%). At the time of the interview 46 patients (67.6%) had no complaints, while 19 patients (27.9%) reported symptoms. 50 patients (73.5%) would decide for Transanal Open Hemorrhoidopexy again, while 8 patients would not (11.8%). In 10 patients (14.7%) a second operation after Transanal Open Hemorrhoidopexy had been performed.
Conclusion: After more than 8 years more than two out of three patients are asymptomatic. Only 10 patients (14.7%) had a second operation. Transanal Open Hemorrhoidopexy is a safe operation with encouraging long term results and should be part of the therapeutic algorithm for symptomatic hemorrhoids.

P551
Most patients with hemorrhoidal disease do not need surgery

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Aim: To present our experience with conservative treatment of hemorrhoidal disease and question the necessity of surgery
Method: All patients presenting with symptoms due to hemorrhoidal disease (bleading, itching, prolapse) were entered in a database over 1 year. Mucosal prolapse was recorded by proctological examination under rest and straining. All patients were instructed to care for high fiber diet and a minimum of 2 liters of water daily, avoid straining and perform pelvic floor exercise. Patients were followed up closely for a minimum of 12 months to ensure compliance.
Results: In 12 months 237 patients presented in our office with symptomatic hemorrhoidal disease. 76 patients (32%) had a visible rectoanal prolapse under rest, 128 patients (54%) had a prolapse when straining. In 33 patients (14%) no external prolapse was visible. After 12 months, 199 patients (84%) were free from symptoms. 38 patients needed surgery due to persistent symptoms. In 20 patients Transanal Open Hemorrhoidopexy was performed, in 18 patients Stapled Hemorrhoidopexy.
Conclusion: In the majority of patients with hemorrhoidal disease conservative therapy can accomplish freedom from symptoms, and not even minor procedures a sclerotherapy or rubber band ligation are needed. Early surgery for hemorrhoidal disease should be strongly questioned.

P552
The using of electric welding in the minimally invasive treatment of the pilonidal disease

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Aim: To improve the results of treatment of patients with pilonidal disease.
Method: The trial included 107 patients with pilonidal disease, who from 2013 to 2017 were operated in our clinic. All patients are divided into 2 groups. 55 patients are referred to the main group, who underwent a minimally invasive method of treatment using electric welding technology. After removal of the contents of the pilonidal sinus through a 2–3 cm incision, ablation of the inner shell was performed by electric welding. The control group included 65 pilonidal sinus patients treated by marsupialization of the wound.
Results: In the study group, the term of complete healing lasted 22.3 ± 1.7 days. In the control group – 32.5 ± 2.4 days. The term of recovery in the study group was 12.7 ± 1.9 days, in the control – 18.3 ± 1.5 day. The number of relapses in the study and control groups were nearly the same – 3.6%and 3%.
Conclusion: The use of electric welding, minimally invasive, technology reduces the term of complete healing and the period of restoration of work capacity by 30%.

P553
Using a corrosive chemical agent for closure the anal fistula without surgical intervention

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Aim: To determine the rate of complete clinical healing of anal fistulas with long time follow up after irrigation of the fistula tractwith silver nitrate solution as a non-surgical treatment.
Method: Adult patients with perianal fistula presenting between June 2012 and July 2014 were included. Irrigation of the fistula tract with 1% silver nitrate solution was applied. Irrigation was repeated every 2 weeks when necessary. The primary outcome measure was the rate of complete clinical healing.
Results: One hundred eighty six consecutive patients with anal fistula were analyzed. Of those, 82 (44%) had complete clinical healing without recurrence for a median of 40 (10–62) months. The median irrigation number was 4 (1–10). Following the procedure patients followed for less than 20 months (n = 19) had a healing rate of 36% (n = 7) while this rate increased up to 45% (n = 75) in those who were followed for more than 20 months (n = 167). Patients with intermittent discharge had a significantly higher rate of healing (59%) than those with continuous discharge (39%).
Conclusion: This study demonstrates that the application of silver nitrate solution often produces a favorable outcome in the treatment of anal fistula.

P554
Clinical outcome of extra anal canal approach in sphincter preserving techniques for anal fistulas

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Aim: To assess the healing rate and functional detriment of extra anal canal approach (EACA) for low fistulas.
Method: we have performed EACA for anal fistulas since the year 2000.This procedure aims at occluding the tract between the primary opening and intramuscular tract of the internal sphincter(subcutaneous fistula tract)to prevent entrance infection. In addition to 367 low intersphincteric fistula lesions situated in the anterior or lateral positions, 14 posterior fistulas were assigned to be performed using this procedure and then evaluated. Subsequently we compared this procedure with fistulotomy.
Results: Of the 367 lesions that underwent EACA, 351 lesions had successful outcomes (anterior and lateral lesions = 92.1%,;posterior lesions = 92.9%).The mean wound healing time for EACA in posterior fistulas was 39 days, which was significantly shorter (P<0.001) than that for fistulotomy (82 days). No significant difference was observed in MRP and MSP between the two groups.
Conclusion: EACA had a low recurrence rate and significantly shorter wound healing time, and none of patients occurred postoperative incontinence.Therefore, EACA can be considered an effective therapeutic option for anal fistula.

P555
Outcomes following Transanal Haemorrhoidal Dearterialisation (THD)

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Aim: Although conventional open haemorrhoidectomy and stapled haemorrhoidectomy are effective procedures, they can lead to significant post-operative pain with risks to continence.Current evidence favours transanal haemorrhoidal dearterialisation (THD) and targeted mucopexy (TM) to be an efficacious alternative to conventional modalities. Our aim was to assess the midterm outcomes following THD.
Method: Retrospective data was collected for patients undergoing day case THD under a single consultant over a 9-year period (March 2009 to February 2018). Data collected included: intra-operative findings, post-operative pain as (defined as requirement of analgesia in recovery), post-operative complications and requirement of further procedures.
Results: 271 patients underwent THD and TM in 203 (74.9%) patients with 2ndto 4thdegree haemorrhoids. Only 4 (1.5%) patients suffered from post-operative complications, including significant bleeding (n = 1) urinary retention (n = 1) and constipation (n = 2). Post-operative pain was identified in 10 (3.7%) patients that also required an additional procedure (e.g. excision of anal polyps and skin tags). Only 5 (1.8%) patients required further haemorrhoidal invasive intervention subsequently.
Conclusion: These results are comparable with national data and demonstrate that THD is a safe procedure for symptomatic haemorrhoids with minimal morbidity and is a trainable operation for colorectal residents.

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P556

Fistulotomy and immediate repair: an alternative to rectal advancement flap?

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Aim: To compare the failure rates of two procedures which aimed to preserve anal function.
Method: the strategy was considered where lay-open fistulotomy was avoided to limit post-operative incontinence. After dividing the muscle during fistulotomy and removing the tract, external sphincter and mucosa structures were repaired by two planes of separate absorbable stitches. After data extraction of a prospective database, the procedure was compared to age- and sex-matched patients who underwent a rectal advancement flap (RAF). Failure was defined by at least one of following items: abscess, purulent discharge, visible external opening or further drainage procedure.
Results: The data of 44 patients (median age: 40.5 [32.6–53.5] years, gender F/M: 14/30, Crohn's disease: 11) were evaluated. The cumulative probabilities of failure rate after immediate repair were 36.6% [21.3–54.7] and 55.9% [38.2–72.3] at 3 and 6 months respectively. Postsurgical recurrence may be subcutaneously. One patient reported an early gas incontinence. These rates tend to be higher than those of RAF (28.3% [15.5–45.8] and 41.0% [25.6–58.3] at 3 and 6 months respectively; $P = 0.07$).
Conclusion: as compared to RAF or fistula tract ligation, immediate repair after fistulotomy merits a prospective evaluation on both long-term success rates and post-procedure continence.

P557

Advancement flap procedure in Crohn and non-Crohn perineal fistulas: for a simple surgical approach

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Aim: The aim was to ascertain rates of failure of rectal flap advancement and to determine predictive factors for failure, with a focus on Crohn's Disease.
Method: The procedure considered was partial-thickness rectal flap advancement performed in outpatient surgery. Fistula features, general characteristics and main clinical events were recorded in a prospective database. Failure was defined by at least one of following items: abscess, purulent discharge, visible external opening or further drainage procedure. The rates of failure of rectal flap advancement for anal fistula and the predictive factors of failure were assessed in a multivariate analysis model.
Results: Eighty-seven patients, including 34 patients with Crohn's disease, were included. The median follow-up was 13.3 [3.8–38.1] months. Failure of rectal flap advancement was observed in 34.1% in the overall population and in 33.3% in the Crohn's disease population. Supralevator fistula and fewer than 2 fistula drainages before rectal flap advancement were associated with higher rectal flap failure rates. In Crohn's disease patients, the absence of biological therapy at referral was predictive of failure.
Conclusion: Rectal flap advancement is a satisfactory option for the therapeutic management of anal fistula, including Crohn's disease populations. Efficient fistula drainage is needed before performing this surgical technique.

P558

Fissure-in-ano: a community diagnosis?

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Aim: Fissure-in-ano (FIA) is a common condition seen in the colorectal outpatient clinic. Our aim is to assess the volume of new fissure referrals to secondary care, determine the proportion of correct diagnosis in community and to examine the management strategy in primary care.
Method: A retrospective audit was conducted examining all referrals and clinics letters/notes in a tertiary colorectal teaching hospital for 2017. An automated electronic notes search identified potential cases by searching for "Fissure", notes were then examined. Consultant surgeon diagnosis of fissure was treated as gold standard
Result: Overall 269 patients were diagnosed with FIA in colorectal out-patient representing 7.17% of all new colorectal referrals. 102 patients were referred from community as FIA, 167 were referred with an alternative diagnosis (mostly painful haemorrhoids). Sensitivity for correct diagnosis in community was 37.9%. Of those identified as FIA in community 14.5% were offered treatment.
Conclusion: FIA is a common condition seen in colorectal outpatients and contributes a significant volume of new referrals. Diagnostic accuracy in the community is poor and appropriate management is rarely initiated. Efforts to aid diagnosis in the community could slipstream patient pathways and decrease demand on outpatient services, whilst improving outcomes for patients.

P559

Magnetic pelvic resonance or ecoendoscopic for the diagnosis of perianal fistula?

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Aim: To analyze the sensitivity of low digestive ecoendoscopy versus magnetic resonance in the diagnosis of perianal fistulas.
Method: Observational retrospective study. It was analyzed a serie of 89 patients who underwent perianal fistula at our center from May 2015 to January 2018. All patients diagnosed with perianal fistula who had undergone an imaging test (magnetic resonance imaging or ecoendoscopic ultrasound) were included.
Results: The mean age was 50.7 ± 14.8 years. A pelvic magnetic nuclear resonance was performed in 67 patients (in 7 cases it was not diagnostic for perianal fistula) and an ecoendoscopic ultrasound in 48 patients (in 2 cases it was negative). The result after surgery was 23 extraphincteric fistulas (25.8%), 27 intersphincteric fistulas (30.3%), 8 suprasphinterian fistulas (8.9%) and 31 transsphincteric fistulas (34.8%). In 44 patients who underwent a pelvic resonance coincided with the preoperative diagnosis (65.6%) while in 32 patients who underwent the endoscopic ultrasound, the preoperative diagnosis coincided after the intervention. No significant differences were observed in either group.
Conclusion: The use of a preoperative imaging test is a very useful tool for the surgical treatment of perianal fistula. We did not find significant differences between the performance of ecoendoscopic ultrasound or resonance.

P560

Permacol™ collagen paste for perianal cryptoglandular and Crohn's fistulae

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Aim: Permacol™ collagen paste represents a new treatment option for anal fistula. Data remain limited, however, and as yet only the result of one patient with Crohn's fistula has been reported.
Method: From October 2015 to May 2017, 30 patients with anal fistula were treated with Permacol™ paste. Patients were followed at 6 and 12 months. The main focus was on fistula healing, defined as the absence of signs of recurrence on clinical examination and proctoscopy/rigid rectoscopy, and postoperative continence. Fecal incontinence was assessed before surgery and at each follow-up.
Results: Of the 30 patients (19 women, 11 men; mean age 46 years), 12 (40%) had Crohn's disease. All patients had follow-up of at least 6 months, and 24 patients had 12 months. The healing rate in all patients was 57% at 6 months and 63% at 12 months. One patient reported a worsening of fecal incontinence at 12 months; two (7%) had an adverse event requiring fistula drainage. Patient characteristics, healing, incontinence, and adverse events did not differ significantly between patients with and without Crohn's disease.
Conclusion: Our data indicate that Permacol™ paste is a safe and moderately effective treatment for cryptoglandular and Crohn's fistulae.

P561

Perianal Paget's disease: a rare cause of common symptoms. Description of a case and literature review

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Aim: To present a rare cause of pruritus ani based on a recent case attended at our department. A literature review regarding Perianal Paget's disease (PPD) is also done.
Method: A case of a 59-year-old lady with history of 6 months of pruritus ani with no improvement after conservative treatment and histological diagnosis of PPD.

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Results: Perianal Paget's disease is a very infrequent pathology; it is aproximately 1% of all anal pathologies and 6.5% of cases of extra breast Paget. It is a benign disease with malignant potential so early identification and treatment is essential. Main symptom is pruritus ani. Rectal bleeding and perianal pain are also common symptoms of this condition. Persistent symptoms and perianal lession after an appropriate conservative treatment makes a biopsy compulsory. Given its malignant potential, a wide local excision should be performed carcinoma has to be ruled out. Malignant cases might even need radical treatment with abdomino-perineal resection.
Conclusion: PPD is a very rare kind of perianal lession; diagnosis requires a high index of suspicion and subsequent histological confirmation. Treatment widely varies among patients. An appropriate surgical treatment offers good results in terms of recurrence and overall survival.

P562
New procedure transanal suture rectopexy for haemorroids

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Aim: New procedure, "Trans anal Suture Rectopexy" for hemorrhoids assessed and compared to other procedures; in relation to safety, pain, bleeding, recurrence and other complications.
Method: Retrospective study of 1008 symptomatic hemorrhoid cases of grade II, III IV; included 672 males and 336 females. The hemorrhoids were reduced by steep head low position and digital massage. The mucosa was fixed to rectal muscles by 0.5 to1.0 cm. long two zero vicryl suture by continuous but double locking sutures along the circumference of the rectum at 2.0 and 4.0 cms proximal to the dentate line.
Results: All 1008 patients were discharged in 24 hours, in 982 patients there was no pain while 26 had expressed dull pain. Intra operative bleeding from suture line was observed in 11% of cases which required temporary compression. The 29 (2.8%) patients had symptomatic recurrence noticed during follow up of 14–158 months after procedure. No incontinence, recurrent bleeding, increased frequency of stool was observed.
Conclusion: A simple suturing procedure offers painless cure for hemorrhoids. It is safe, painless, requires short stay done through natural orifice. The results are better than any procedures with fewer complications and short learning curve.

P563
Flavonoids mixture (diosmin, troxerutin, rutin, hesperidin, quercetin) in the treatment of I-III degree hemorroidal disease: a double blind multicenter prospective comparative study

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Aim: To evaluate effectiveness of new flavonoids mixture (diosmin, troxerutin, rutin, hesperidin, quercetin) to reduce bleeding from I-III degrees hemorrhoidal disease in short and medium time.
Method: 154 consecutive patients with hemorrhoidal disease recruited in four colorectal units were enrolled to the study. 78 were randomized to receive a mixture of diosmin, troxerutin, rutin, hesperidin, quercetin (Study Group – SG), and 76 a mixture diosmin in combination with hesperidin, diosmetin, isoroifolin and linarin in purified micronized fraction (Control Group – CG). Anal bleeding, number of pathological piles and Golligher's grade were assessed at each scheduled visit and compared using the CHI-square test.
Results: Bleeding improved after one and 6 months both in SG (79.5% and 70.5%) than in CG (80.2% and 75%) without significantly differences among two groups. Satisfaction degree on the administrated therapy (VAS 0–5) after 6 months of treatment was greater in the patients of the SG (4.05) towards CG (3.25): this result was statistical significant (*P* 0.003).
Conclusion: Flavonoids mixture (diosmin, troxerutin, rutin, hesperidin, quercetin) is a safe and effective mean of managing of hemorrhoidal bleeding and minimal adverse events are reported. Further pharmacosurveillance of this product in clinical practice should confirm its effectiveness.

P564
Initial results of the randomized, double-blind clinical trial of laser hemorrhoidoplasty versus rectoanal repair versus open hemorrhoidectomy

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Aim: The aim of this study is to compare early results (after 6 weeks) of three modalities for treatment of 2nd to 3rd degree hemorrhoids.
Method: Patients were randomized for 1 of three techniques. They were followed up at 1 and 6 weeks postoperatively by colorectal surgeons who were not aware of the operation performed. Wound healing, recurrence rate and continence, quality of life were assessed using questionnaires (FIQOL, Wexner, SF-36). Patients are followed-up until 1 year after operation.
Results: 121 patients – 53 (43.8%) women and 68 (56.2%) men – were incuded: 40 patients underwent laser hemorrhoidoplasty (group I), 41 patients underwent rectoanal repair (group II) and 40 patients underwent excisional hemorrhoidectomy (group III). Patient satisfaction score ($P = 0.025$), defecation on the first postoperative day ($P = 0.02$), postoperative pain ($P < 0.014$), return to work time ($P < 0.001$), quality of life after 6 weeks ($P = 0.02$) were significantly better after laser hemorrhoidoplasty and rectoanal repair.
Conclusion: Early results of laser hemorrhoidoplasty and rectoanal repair are better than excisional hemorrhoidectomy. Further follow-up is necessary.

P565
Minimally invasive treatment versus total excision with primary closure for pilonidal disease

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Aim: The aim of this study is to compare minimally invasive and total excision with primary closure surgical treatment for pilonidal sinus.
Method: This retrospective study has been conducted at Vilnius University Hospital Santaros Clinics from 2014 to 2018. Main measures was included preoperative, intraoperative, and postoperative outcomes and the quality of life questionnaire (EQ-5D-5L).
Results: 97 patients – 48 patients underwent minimally invasive surgical treatment (Group I) and 49 underwent open excision (Group II). The patients were interviewed 1 month – 3 years postoperatively. Patients operating time, postoperative days, complication rate, satisfaction score were better in group I, $P < 0.05$. A total of 96.9% patients of group would choose for the same type of surgery, in Group II – 28.6%, $P < 0.05$. Recurrence rate was higher in Group I – 6 patients (18.8%) than in Group II – 2 patients (9.5%), $P > 0.05$.
Conclusion: Patients with pilonidal disease can be successfully treated by Minimally invasive technique, is the simplicity of the procedure, low complication rates, short recovery time, and good cosmetic results.

P566
Long-term evaluation of fecal incontinence after fistulotomy and sphincteroplasty in complex anal fistula

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Aim: Actually, there are several techniques for complex anal fistula treatment avoiding damaging the anal sphincter. Fistulotomy and sphincteroplasty (FIPS) can treat the fistula track successfully, decreasing the risk of fecal incontinence in selective patients. The aim of this study is the long-term evaluation of fecal incontinence after FIPS in complex anal fistula.
Method: Prospective study of patients undergoing FIPS for complex anal fistula. Patients were included from January 2000 to December 2010 with a mean follow up of 84 months, in order to evaluate recurrence, continence and postoperative morbidity.
Results: 108 patients were included. 68.2% were men with a mean age of 48 years and mean time of evolution before surgery of 12.8 months. 37 fistulas were not-primary.In the variation of continence, Wexner values were higher in repeated fistulas ($P < 0.05$). Continence in healed fistulas and those with postoperative recurrence was compared, with higher Wexner scores in recurrences ($P < 0.01$).According to fistula track, the high transsphincteric (1.7) and suprasphincteric (7.8) have the worst Wexner values in the evaluation at 84 months ($P < 0.001$).
Conclusion: Long term evaluation of FIPS indicates it should be specially indicated in low and medium transsphincteric and primary complex anal fistula.

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P567

Reliability and efficacy of Milligan-Morgan hemorrhoidectomy using LigaSure Precise in the surgical treatment of grade III-IV hemorrhoids: 15 years follow-up

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Aim: Compare Milligan-Morgan hemorrhoidectomy using LigaSurePrecise for III-IV haemorrhoids and evaluate reliability-efficacy of the technique in 15 years follow-up.
Method: All patients who underwent Milligan-Morgan hemorrhoidectomy, using the LigaSure Precise device between 2003–2018. Patient database was developed prospectively-sequentially obtained gender data, age, preop. blood values of hemoglobin-hematocrit, operation time, number of piles excised, presence of thrombosis, out-patient/in-hospital data, postop. analogical pain scale. Follow-up included : prolonged pain, adverse overcome, stenosis or incontinence.
Results: Surgery was performed on patients with grade III-IV haemorrhoidal disease. All underwent LigaSure Precise technique except 9% operated on using Ultracision/Thunderbeat devices or classic method. Median age: 39 (17–81) years in 91% of patientes while a mean of 40 (15–77) years in the smaller group. Postop. analgesics: 90% in the conventional methods and just 50% in LigaSure group. Mean time returning to normal activity was 5 (1–14) days in the LigaSure group and 8 (1–31) days in the other group.
Conclusion: We are convinced that LigaSure Precise device technique is superior to a conventional methods or devices in terms of operation time, hospitalization period, postoperative analgesic requirements, time required for returning to normal daily activity, and postoperative bleeding. 15 years follow up correlates these results.

P568

Retrospective analysis of bathing habits of 67 adolescent pilonidal sinus disease cases

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Aim: The aims of the ideal treatment of pilonidal sinus disease are eradicating disease, lowering recurrence rates and minimizing disability time. In this paper, we aimed to evaluate pilonidal sinus disease in adolescents.
Method: The medical records of 67 adolescent patients (14–19-year-old) who underwent pilonidal sinus surgery between January 2014- December 2017 at the General Surgery Clinics of Malatya State Hospital and Okan University Hospital were evaluated retrospectively.
Results: There was a statistically significant difference between postoperative complication (wound infection, seroma, hematoma, wound seperation) rates according to the number of weekly baths. Complication rates were found to be higher in patients who bathed more than two in a week than in those who bathed twice ($P = 0.005$; $P < 0.01$).
Conclusion: Skin covering the intergluteal groove is more fragile and undefended for bacterial penetration. Bathing more than 3 times/week may result changing in microflora of the skin which may be the reason of increased rates of complications after pilonidal sinus surgery.

P569

Clinical and functional results after rectal mucosa flap vs internal sphincterotomy in the treatment of chronic anal fissure

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Aim: Chronic anal fissure is the most frequent cause of anal pain. Lateral sphincterotomy (IS) is considered the treatment of choice, even if it is associated with a high risk of incontinence. The rectal flap (RF) could be an alternative techinique.
Method: 80 patients with a diagnosis of chronic anal fissure have been operated at Torrevieja University Hospital, of these 42 had a IS and 38 a RF. We compared the following variables: duration of surgery, healing rate at 4 weeks after surgery , incontinence at 6 and 12 months, recurrence rate at 1 year of follow-up.
Results: The resolution of the painful symptomatology was obtained in 4 weeks in all the patients who underwent surgery and the complete cicatrizacion was 66% in IS vs 100% of RC. The incontinence rate at 6 months has been higher for the IS group at 6 months, with complete resolution at 1 year of follow-up (16% ELI vs 0% CR). There has only been one recurrence in the IS group (2.3%) and none in the RC.
Conclusion: According to our experience, CR is a simple technique that allows complete resolution of symptoms, and complete cicatrization with lower risk of incontinence in patients with IS.

P570

Efficacy and safety of fibrin glue versus platelet-derived growth factors for treatment of criptoglandular anal fistula. Results of a phase III randomized clinical trial

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Aim: The purpose of this study is to assess the efficacy and safety of fibrin glue (FG) compared to platelet-derived growth factors (PRGF) for treatment of criptoglandular anal fistula, with a secondary pain and quality of life (QOL) appraisal
Method: A phase III, single-center, double-blind randomized clinical trial comparing fibrin glue (Tissucol®, Baxter, Madrid) ($n = 24$) versus platelet-derived growth factors ($n = 32$), was conducted in patients with cryptoglandular anal fistula. Both sealing products were injected into the fistula wall following tract curettage and suture closure of the internal opening. Patients were scheduled for follow-up up to 12 months, recording clinical closure, quality of life, pain perception and all procedure-related adverse events. Outcome was classified as response, partial response or failure
Results: Overall feasibility was 82.14%. Partial and total closure rates were 16.7% and 41.7% for FG and 22.6% and 48.4% for PRGF ($P = 0.068$). PRGF treatment was superior in terms of pain postoperative reduction ($P = 0.026$) and patient-perceived QOL (emotional role) 60 adverse events were recorded, 4 related to the procedure (moderate and mild)
Conclusion: The use of both fibrin glue and platelet-derived growth factors in anal fistulas shows similar efficacy, with low adverse effects and an acceptable success rate.

P571

Fistula laser closure (FILAC^{tm}) for complex urethroperineal fistula

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Aim: Fistula formation in hidradenitis suppurativa follows an uncontrolled infection with subcutaneous tracts leading to 'pus-pot' perineum. Closure of the fistula(s) implies major surgery and is bound to fail in refractory inflammatory environment.
Method: Fistula Laser Closure (Biolitec) is a novel technique already reported to have been used to some extent in the treatment of complex fistula-in-ano and pilonidal sinus. It consists of blind cauterization of the fistula tract by means of a radial-emitting laser probe in order to obliterate the fistula tract by shrinking the tissue around it. Two patients who underwent surgery for urethroperineal fistula using this technique are presented. In both cases, the laser probe was guided through the fistula starting at the perineum and was pulled inwards until located just outside of the urethra. The laser was then activated and pulled back until evacuation through the external orifice was seen.
Results: In both cases, the fistula tracts were completely closed after 3 months of follow-up. The wounds had healed smoothly and complete resolution of symptoms was noted.
Conclusion: The use FiLaC™ for the treatment of urethroperineal fistula is feasible and safe. The minimally invasive nature of the technique and limited postoperative pain permit daycare surgery.

P572

External haemorrhoidal thrombosis – there is no need for surgery

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Aim: To verify that conservative treatment of external haemorrhoidal thrombosis is feasible.
Method: We collected all patients presenting in our office with external haemorrhoidal thrombosis in a prospective database over 1 year and recorded findings upon clinical examination, pain on a visual analogue scale (VAS) and if patients seeked time off from work. All patients were invited for a control examination after 2 weeks. Patients were treated with pain medication and without surgery.
Results: Between May 2017 and May 2018 568 patients were seeking treatment for haemorrhoidal thrombosis in our office. The 273 (48%) were female. 437 patients (77%) had external haemorrhoidal thrombosis and 131 patients had thrombosis of prolapsed internal hemorrhoids. Pain on the VAS was 4.0 (male patients 3.5, female 4.5, 0–10), in 403 patients (71%) pain score was 5 or lower. 460 patients (81%) presented for follow up after a mean time of 19 days. 471 of these patients (83%) reported full recovery after a mean of 5.4 days (1–23). Of all patients, 62 (11%) requested a sickness certificate for a mean of 3.2 days (1–18).
Conclusion: Patients with hemorrhoidal thrombosis can be treated successfully without surgery.

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P573

Pit Picking is a safe and successful therapeutic option in non-acute Pilonidal Sinus disease

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Aim: Pilonidal Sinus Disease is a disease most commonly affecting hirsute men. Excision and lay open of the infected sinus being customary in earlier years, a minimal invasive approach has evolved in recent years. Both excision and reconstruction following the techniques of Karydakis, Limberg or Dufourmentel, and Pit Picking have shown good results. We present our results after Pit Picking.
Method: Pit Picking for pilonidal sinus was performed under general anaesthesia in our office. Patients were entered in a prospective database and followed up for 12 months.
Results: A minimum follow up of 12 months was available for 128 patients (mean age 28.3 years). In 107 patients (83.6%) the disease was cured by the operation. The wounds healed after a mean of 38 days (24–78). Despite recurrence, 12/21 patients opted for another Pit Picking as second operation. In all these 12 patients the disease was cured after the second Pit Picking operation. 9 patients were re-operated with a different technique. No major complications occurred.
Conclusion: Pit Picking is a safe operation for Pilonidal Sinus Disease. Due to the low failure rate and the absence of major complications it should be considered as first choice in chronic Pilonidal Sinus Disease.

P574

Comparison of endoscopic pilonidal sinus treatment versus pilonidal sinus flap surgery: a single institution experience within an Asian population

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Aim: There is limited data from Asia comparing the outcomes of endoscopic versus flap surgery for sacrococcygeal pilonidal disease. This study aims to compare the newer technique of endoscopic pilonidal sinus treatment (EPSiT) versus traditional advancement or rotational flap surgery.
Method: Retrospective analysis of all patients who underwent EPSiT or flap surgery over an 8 year period in a single Singaporean institution. Parameters collected include patient demographics, operative time, defect closure time, complications and follow-up duration.
Results: A total of 53 cases were analyzed. The EPSiT ($n = 26$) and flap surgery groups ($n = 27$; techniques include Karydakis [$n = 20$], Bascom [$n = 4$], Rhomboid [$n = 3$]) were matched by demographics and mean follow-up time (8 months). The EPSiT technique had a shorter operative time (36 *vs* 63 min, $P < 0.05$) with a defect closure time of 51 days. Within the flap group, 12 of the 27 (44%) cases developed wound dehiscence, with 3 non-healing wounds and the rest healing after 63 days. Recurrence rates were comparable (EpSiT 31% vs flap 26%; $P > 0.05$). There were no major complications.
Conclusion: The EPSiT technique has benefits over flap surgery within the Asian population and should be considered in the initial treatment of pilonidal disease.

P575

New approaches to choice of surgical treatment of patients with combined diseases of anorectal region

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Aim: We aimed to compare long-term outcomes in patients undergoing circular stapled hemorrhoidopexy with dearterialization to those who had Milligan-Morgan hemorrhoidectomy.
Method: 94 patients who underwent Milligan-Morgan hemorrhoidectomy and 156 patients who underwent circular stapled hemorrhoidopexy with dearterialization were reviewed. Long-term follow-up was assessed.
Results: Postoperative period was longer in the Milligan-Morgan hemorrhoidectomy subgroups (7.2 ± 2.0 vs 2.7 ± 1.1 days, $P = 0.003$). Long-term need for additional medical treatment was similar in the Milligan-Morgan hemorrhoidectomy and circular stapled hemorrhoidopexy groups (6.4% *vs* 5.8%, respectively). Long-term need for additional surgical treatment was higher in the Milligan-Morgan group (2.1% *vs* 1.3%). The symptoms were greatly improved in the majority of patients ($P = 0.06$), and there was no difference between the groups as regards long-term anorectal pain ($P = 0.16$).
Conclusion: Patient satisfaction, resolution of symptoms, quality of life, and functional outcome appear similar after circular stapled hemorrhoidopexy with dearterialization and Milligan-Morgan hemorrhoidectomy in long term in patients with Grade 3–4 hemorrhoids combined anal fissure and fistula.

P576

Electrotherapy: A novel treatment for 4th degree haemorrhoids

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Aim: Grade 4 haemorrhoids usually require surgery, with potentially significant morbidity, pain and recovery. This study aimed to assess the use of electrotherapy, whereby a low dose direct current is applied to the base of the pedicle, for grade 4 haemorrhoids.
Method: Forty-five patients presented with grade 4 haemorrhoids between April 2014 and September 2016. A standardised telephone questionnaire regarding symptoms pre- and post-procedure was completed, calculating the Sodergren severity score. Bleeding was assessed using a 5-point Likert scale.
Results: Thirty-five patients completed the questionnaire; 20 (57%) were male. Median age 68 years (range 45–84). Fifteen (43%) had had previous alternative treatments. Patients underwent median 2 electrotherapy treatments (range 1–7) with median follow-up 27 months (range 15–44 months).

Thirty patients presented with bleeding, with 12 (40%) having complete resolution. Sixteen patients described "usually" or "always" bleeding pre-procedure, with fifteen (94%) improving. Twenty-six patients had Sodergren scores ≥3 (range 3–11). Following treatment, 18 (69%) reported significantly fewer symptoms, with a median improvement of 4 points. Thirteen (50%) had complete resolution.

No complications were reported.
Conclusion: 94% of patients reported significant improvement in bleeding symptoms, and 69% improvement in prolapse symptoms. Electrotherapy is a safe, effective treatment for grade 4 haemorrhoids.

P577

Placement of Seton before ligation of intersphincteric fistula tract (LIFT) significantly improves long-term results in patients with high anal fistula

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Aim: To analyze factors predicting long-term outcome after LIFT procedure for high anal fistula.
Method: Patients with Crohn's disease have been excluded. Placement of seton did not precede LIFT procedure at own hospital. However, several patients attended the LIFT surgery after they already had underwent a seton placement previously at different institutions. All follow-up data were obtained based on clinical examination by one of study authors.
Results: 75 patients (54 males) underwent LIFT procedure for high transsphincteric fistula between 2012 and 2018. Twenty three patients underwent surgery after previous seton placement (31%). Follow-up data were available in 72 cases (median time 15 months). Complete fistula healing was achieved in 56 Patients (78%). 16 of latter patients necessitated an additional partial division of internal sphincter muscle to achieve complete healing. The healing rate was significantly higher in patients undergoing LIFT procedure after previous seton placement (100% *vs* 69%, $P = 0.004$). Sex, age, smoking status, position of internal orifice, duration of disease and duration of surgery had no impact on long-term outcome.
Conclusion: Placement of a seton should precede the LIFT procedure for high fistula-in-ano.

P578

Local perianal injection of Bupivacaine with and without Ketamine for postoperative pain reduction after anal sphincterotomy for anal fissure

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Aim: The aim of this study was to compare the effectiveness of local anesthesia using Bupivacaine with and without Ketamine in postoperative pain reduction after anal sphincterotomy in patients with anal fissure.
Method: A total of 60 patients were included and randomly assigned into four equal groups. All patients underwent open lateral sphincterotomy under spinal anesthesia. Group A was given perianal local injection of NaCl 0.9%(3 cc) following the operation. Group B received Bupivacaine 0.5%(2 cc) and NaCl 0.9%(1 cc), while group C Bupivacaine 0.5%(2 cc) and Ketamine (1 cc). Group D was given no local injection. Postoperative pain was recorded in the day of surgery and also in the first postoperative day.
Results: Mean age of patients was 25.1 ± 10.4 years. Visual Analogue Scale for pain revealed a significantly lower pain during the first postoperative day in group C

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compared to the other groups (P<0.05). However, groups D and A had highest level of pain, respectively (P<0.05). There was no significant difference among the groups in terms of postoperative nausea, vomiting, urinary or fecal retention (P > 0.05).
Conclusion: Local anesthesia using Bupivacaine and Ketamine results in an acceptable postoperative pain reduction in patients undergoing anal fissure operation.

P579
Gluteus maximus fascia plasty (GMF) flap for pilonidal sinus is a promising technique to avoid recurrence

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Aim: To compare short- and long-term results of primary closure and GMF flap after pilonidal sinus (PS) excision.
Method: A comparative study included patients with primary or recurrent PS without acute abscess with secondary orifices located within 2 cm from the midline. After excision primary midline closure (1st group) or GMF flap (2nd group) was performed (both GMF separated 2 cm laterally and sutured in midline, subcutaneous fat and skin sutured, active wound drainage placed).
Results: 13 and 10 patients included in 1st and 2nd groups respectively in January 2017–March 2018. They didn't differ in mean operation time (41.9 ± 2.9 and 45.0 ± 3.2 min, $P = 0.53$), blood loss (9.2 ± 1.5 and 8.0 ± 1.5 ml, $P = 0.44$), VAS on 1st postoperative day (5.9 ± 0.4 and 5.9 ± 0.7 points, $P = 0.9$), hospital stay (9.0 ± 1.6 and 7.4 ± 1.5 days, $P = 0.55$), time to complete wound epithelization (2.2 ± 0.7 and 1.9 ± 0.4 months, $P = 0.6$). At a mean follow-up of 8.1 ± 0.8 months none of GMFF patients had a recurrence or nonhealing wound compared to 5 patients in 1st group (38%, $P = 0.03$).
Conclusion: GMF flap after PS excision is effective in preventing recurrence. A randomized trial is being performed to prove that.

P580
Treatment of low perianal fistulas with fistulotomy: long-term results

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Aim: Surgical approach of perianal fistulas is still debatable due to the high risk of recurrence and fecal incontinence. Fistulotomy is considered the gold standard treatment for low perianal fistulas.
Method: Retrospective study of patients treated with fistulotomy for low perianal fistula between 2012 and 2017, excluding cases associated with inflammatory bowel disease and those that presented with fecal incontinence before surgery. A phone query using the Vaizey score was performed to assess the continence status after surgery.
Results: A total of 116 patients with median age of 54 years were questioned, with 45% having complex fistulas and 31% presenting with recurrent fistulas with a mean of 2 previous surgeries. The median follow-up was 7 months (2–48) with 5 cases of recurrence. The primary healing rate was 95.7%. The median Vaizey score was 1. Major incontinence was seen in 11 cases with a significantly higher prevalence in complex fistulas ($P < 0.05$). Of the patients with major incontinence, 6 (55.5%) patients denied significant impact in their lifestyle.

Conslusions: Fistulotomy for low perianal fistulas seems to be associated with a low recurrence rate in high experienced centers. The risk for major fecal incontinence after surgery is low and may not determine significant lifestyle alterations in all patients.

P581
Endoscopic pilonidal sinus treatment – EPSiT: our initial experience

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Aim: The aim of this retrospective study was to introduce a novel technique of treating pilonidal sinus by endoscopic minimally invasive approach and to show our initial results.
Method: Operations were preformed by visualisation of sinus fistulous tract using fistuloscope. Extraction of hair follicles, electrofulguration of tract and excochleation of necrotic detritus then followed. Excision of tissue around the opening of sinus was then performed. There were 12 patients who underwent EPSiT procedure between April 2016. and April 2017. with a follow-up of 6 months. We defined primary healing as closing of wound and lack of secretion 5 weeks after the procedure.
Results: Primary healing was observed in all of the patients except one (91.6%) that was reoperated afterwards. Satisfaction with procedure was greater in patients who were previously operated with excisional procedure. We haven't seen any complications during or after operation. Patients reported minimal pain or no pain at all following the procedure.
Conclusion: We can conclude that EPSiT is excellent method in treating of pilonidal disease, even superior to traditional excisional procedure. We could argue that it also leaves better aesthetic results. Initial promising results reqiure a larger group of patients and longer follow-up.

P583
Horseshoe fistula treated with a modified Hanley procedure: A prospective, randomised controlled trial

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Aim: In this study, we investigate and discuss the results of 53 patients with horseshoe fistula who were treated with a modification of the Hanley procedure, with emphasis on this relatively easy and reproducible operative technique.
Method: Surgical outcomes of the modified Hanley procedure for horseshoe fistulae using a seton from 2004 through 2018 were analyzed. The seton fashioned from a surgical glove was tied around the sphincter under less tension than a traditional cutting seton, hence the definition of ''hybrid seton''.
Results: All of the patients were discharged on the first postoperative day. None required readmission or needed narcotic analgesics after discharge. Complete healing was achieved in all 53 cases at 7.4 ± 4.22 weeks postoperatively. Patients were able to return to regular work activity in 3.7 ± 1.1 weeks. The postoperative Cleveland Clinic Incontinence Score did not differ significantly from the preoperative score ($P = 0.473$, Wilcoxon's test). Recurrent fistula was noted in 2 patients (3.77%) after a mean follow-up of 22.7 months.
Conclusions: The data of this study showed that the use of the hybrid elastic seton is a useful, safe and cost-effective novel technique for the treatment of horseshoe fistulae with the Hanley technique.

P584
Using and not using Doppler probe: this is the question. 90 patients experience in transanal manual haemorrhoidopexy

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Aim: The aim is to evaluate effectiveness, safety, outcome and results of haemorrhoidopexy with and without doppler.
Method: 90 patients with symptomatic II-III gH underwent transanal hemorrhoidopexy with mean age 49.7 ± 10.7 years (range = 28.0–79.0). Procedures performed A) THD: Transanal hemorrhoidal dearterialization (23 pts – 25.5%), B) without Doppler (17 pts – 19%), C) using Erode device (Sapimed) (50 pts – 55.5%). Mean operative time was respectively: 65.7 min, 60.3 min, 38.4 min. Outcome evaluated by a weekly health diary, reporting pain score (VAS), bleeding, tenesmus and urgency. Follow up in 7 post-operative day (POD), 1-3-6-12-24 months.
Results: THD: pain 4.3 ± 2.5, bleeding 13 pts (56.5%), tenesmus 20 pts (87.0%). NO Doppler: pain 6.1 ± 2.2, bleeding 12 pts (70.6%), tenesmus 13 pts (76.5%). ERODE: pain 4.6 ± 2.2, bleeding 22 pts (44%), tenesmus 23 pts (46%). Complications: 1 submucosal abscess, 1 major bleeding, 2 thrombosis. Recurrence data: 2 pts in A (2.2%), 1 in B (1.1%) and 2 (2.2%) in C.
Conclusion: Suspensive hemorrhoidopexy is safe and effective technique for what concerns outcomes. Therefore, the use of Doppler, which increases mean operative time, does not modify patients' outcome in terms of recurrence; Erode device presents an evident lower price.

P585
Experimental study of 1470-nm diode laser hemorrhoidoplasty in porcine model

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Aim: To delineate the size of coagulation effect depending on laser activation time and power.
Method: Rectal tissue of 24 pigs were harvested 5 cm in depth around anus. 54 samples were produced and randomly assigned to receive laser power of 6, 8 and 10 W and 1, 2 or 3 s pulses. Procedure was made using *Biolitec Ceralas diode* laser. Each sample was evaluated after 1 and 10 min to identify visual and palpable tissue changes. The extension of injury was measured on high-magnification microscopy.

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Results: The deepest tissue injury (mean 3.93 mm) was caused by the longest laser exposure time (3 sec). Palpable changes in perianal tissues were closely related to the higher power of laser exposure: 6W – 0%, 8W – 33.3%, 10W – 66.7%. Longer laser exposure time caused higher rate in appearance of palpable tissue changes: 1 sec – 11.1%, 2 sec – 38.9%, 3 sec – 50.0%.
Conclusion: The effect of laser depends on laser exposure time. 10 W 3 second pulses seem to produce the coagulation length of 3.93 mm. Palpable tissue changes correlate with time and power of laser exposure (power – $P = 0.039$, length – $P = 0.001$).

P586

Anal mucosa resection and VY flap reconstruction is a functionally and oncologically adequateprocedure to treat analintraepithelial neoplasia (AIN)

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Aim: High grade AIN therapy includes local ablation and anal mucosa resection with simultaneous VY flap reconstruction of the anal canal. The latter is often reported to be associated with a high morbidity.
Method: Six consecutive patients undergoing anal mucosa resection and VY flap reconstruction (09.2016–05.2017) were evaluated for fecal and urge incontinence, anal canal stenosis and subjective stool evacuation.
Results: Patient's age (four women, two men) was median 51.5 years (range: 26–68). Five patients had high grade AIN, one women additionally had vaginal intraepithelial neoplasia, one patient had anal Paget's disease. In five/six patients, the full anal mucosal circumference was resected and bilaterally reconstructed. One patient had a semicircular resection and unilateral reconstruction. Median Wexner score was 1 (0–6) at 6 months and 0 (0–5) at 12 months. Time to defecation was > 20 mn. in all patients. The anal canal was pertinent for a pediatric rectoscope (diameter: 14 mm) in all patients. One patient reported an intermittend incomplete defecation. Five patients did not report any subjective restrictions, one patient reduced workload following the operation. No AIN relaps was detected.
Conclusion: A local complete resection of high grade AIN is possible with good functional and oncologic results.

P587

Surgical treatment of thrombosed external haemorrhoids (TEH) during pregnancy and in childbed is safe and effective

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Aim: To evaluate efficacy and safety of thrombectomy and local excision of external haemorrhoids (LEEH) in treatment of TEH during pregnancy and in childbirth
Method: Prospective study included pregnant women and puerperas having TEH. Patients underwent either thrombectomy (longitudinal incision using scalpel) or LEEH (excision using scalpel). Both procedures were performed under local infiltration anaesthesia with UltracainDS 1:200000 1.7 ml without closing the wounds to minimize postoperative pain. Postoperatively fiber, local anesthetics and topical anticoagulants were administered.
Results: 13 patients operated in November 2017-March 2018 were included: 6 trombectomies and 7 LEEH. Both procedures didn't negatively affect pregnancy nor require emergency delivery in postoperative period and didn't provoke rejection of lactation. Pain at 1st day of treatment didn't differ (6.67 ± 0.54, 8.43 ± 0.62 VAS, $P = 0.058$). There was significant relief of pain in both groups by 3rd postoperative day (3.17 ± 0.91, 2.86 ± 0.68 VAS, $P = 0.79$) and by 10th day (0 VAS). Re-thrombosis developed in 2 cases after thrombectomy and in 1 case after LEEH during 10-day follow-up.
Conclusion: thrombectomy and LEEH are effective and safe treatment options of TEH during pregnancy and in childbirth.

P588

Surgery for thrombosed external hemorrhoids gives faster pain relief than conservative treatment in pregnant women and puerperas

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Aim: To compare surgical and conservative treatment of TEH during pregnancy and in childbed.
Method: Prospective study included pregnant women and post partum women having TEH. Patients were treated surgically or conservatively. Surgery included either thrombectomy or local excision of external hemorrhoids under infiltration anaesthesia (UltracainDS 1:200000) without wound closure. Postoperative management included dietary fiber, local anesthetics and topical anticoagulants. Conservative treatment included fiber, local anesthetics, topical anticoagulants, flebotonics (for pregnant only).
Results: 36 patients were treated in November 2017-March 2018: 13 underwent surgery and 23 conservative treatment. Either treatment option didn't affect pregnancy, nor require emergency delivery or provoke rejection of lactation. In the surgery group compared to conservative treatment group the pain immediately after operation was more prominent (7.8 ± 0.6, 5.9 ± 0.6 VAS, $P = 0.035$), by 3rd day of treatment was the same (3.1 ± 0.7, 3.8 ± 0.7 VAS, $P = 0.45$) and by 10th day was lower (0 and 1.1 ± 0.5 VAS, $P = 0.028$). During 10-day follow-up re-thrombosis developed in 3 cases after surgery (23%) and required re-thrombectomy without further rethrombosis.
Conclusion: compared to conservative treatment, surgery for of TEH during pregnancy and in childbed gives faster pain relief but is associated with a risk of rethrombosis.

P589

Pedicular hemorrhoidectomy for symptomatic haemorrhoidal disease. Results about 192 patients from one tertiary referral center

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Aim: To report our results about pedicular hemorrhoidectomy for symptomatic haemorrhoidal disease.
Method: All patients who underwent pedicular hemorrhoidectomy according to Milligan and Morgans description for symptomatic haemorrhoidal disease in our tertiary referral center were included.
Results: From 2013 to 2017, 198 patients (137 males, mean age = 51 ± 13 years) underwent pedicular hemorrhoidectomy for prolapse (96%) and/or bleeding (70%). Previous instrumental procedures or embolization of superior rectal arteries was performed in 36 (18%) and 6 (3%) patients, respectively.Postoperative overall morbidity occurred in 70 patients (35%), including pain ($n = 31$), urinary blockage ($n = 26$), bleeding ($n = 16$), fever ($n = 11$) and fecaloma ($n = 5$). Major morbidity requiring unplanned surgery occurred in 4 patients (2%) for bleeding. Mean length of stay was 6 ± 2.5 days. Long-term results were available in 124 patients (63%), after a mean follow-up of 33 ± 15 months. Recurrence occurredin 7 patients (/124, 6%). Among these patients, 2 underwent another hemorroidectomy and one patient underwent embolization of superior rectal arteries. Moderate faecal incontinence was reported in 9 patients (7%), and was already present in 3 patients before surgery.
Conclusion: Our study suggests that pedicular hemorrhoidectomy according to Milligan-Morgan is safe and efficient, with successful results until 5 years after surgery.

P590

Treatment of anal fistula by radiofrequency-thermo-coagulation (RFTC): a word of caution

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Aim: The aim was to determine the rate of failure of the radiofrequency-thermo-coagulation (RFTC) for anal fistula compared with rectal flap advancement (RAF) in a case-matched study.

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Method: Patients who underwent a RFTC were compared with Crohn- age- and sex-matched patients who underwent a RAF. Fistula features, general characteristics and main clinical events were recorded in a prospective database. Failure was defined by at least one of following items: abscess, purulent discharge, visible external opening or further drainage procedure.
Results: A total of 62 patients (median age: 45 [36.8–57.5] years), gender F/M: 22/40, Crohn's disease: 22) were analysed. Failure of RFTC was higher compared to RAF (74.2% vs 32.2%; $P = 0.004$). The cumulative probabilities of failure rate of the RFTC were 70.1% [56.1–81.7], 86.0% [73.9–93.6] and 94.8% [86.5–98.5] at 3, 6 and 12 months respectively. Anovaginal fistula was significantly associated with failure of RFTC in univariate analysis (HR = 7.1 [2.1–22.5], $P = 0.0001$): all patients with anovaginal fistula failed to RFTC. In RFTC group, 3 patients needed drainage for abscess and one had severe thermal ulceration which needed stoma.
Conclusion: RFTC is not a satisfactory option for management of anal fistula compared with RAF especially for anovaginal fistula.

P591
Reliability of conventional B-mode and 3D endorectal ultrasound in the detection of incomplete anal fistulae: a comparative study

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Aim: To compare B-mode endorectal ultrasound and 3D-endorectal ultrasound performance in making a diagnosis of fistula-in-ano without an external opening.
Method: From December 2017 to March 2018 we recruited 79 patients with incomplete anal fistulae, including 56 men (70.9%) and 23 women (29.1%). Their mean age was 46.2 ± 14.75 year. 46 patients had history of surgery for acute anorectal abscess, 33 – spontaneous drainage. Each patient experienced endorectal ultrasound in B-mode and 3D-mode pre-operatively. Selective surgery data served as a reference standard.
Results: Proportion of false results in locating internal openings for B-mode was 8.9%(7), for 3D-mode – 2.5%(2) ($P = 0.087$). Errors in detection of intersphincteric and submucosal extensions occured in 4 cases (5.1%) for B-mode and in 3 cases (3.8%) for 3D-mode ($P = 0.7$). Ischioanal, subcutaneous and pelvirectal extensions were misinterpreted in 13 cases (16.5%) for B-mode and in 3 cases (3.8%) for 3D-mode ($P = 0.009$). The relation of fistulae to external spincter parts was incorrectly determined in 7 cases (8.9%) for B-mode and 2 cases (2.5%) for 3D-mode ($P = 0.087$).
Conclusion: 3D-endorectal ultrasound is superior to B-mode in detection of ischioanal and subcutaneous extensions. Both modalities are equal in defining relation of fistulae to external sphincter parts and locating an internal opening.

P592
Cryptoglandular transsphincteric perianal fistula: surgical treatment and middle/long-term outcomes

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Aim: Introduce the experience of a coloproctological unit in the treatment of cryptoglandular trans-sphincteric fistulas (CTF).
Method: A retrospective descriptive analysis of operated patients between 2014 and 2017. Demography, type of fistula, treatment, complications and recurrence were analysed. All patients were treated at the Major Ambulatory Surgery department (MAS).
Results: 118 patients were treated for CTF. Average age of 46-years-old, 54.2% were males. 54.2% involved high-CTF and transanal advancement flap repair was the main procedure (37.5%). 45.8% constituted low-CTF and fistulectomy was the elected technique in 50% of the cases. There were no immediate complications, except an admission for post-surgical pain. 9.3% presented some complications after the discharge but only 2.5% required a posterior admission. Global median follow-up of 24.3 months (range 6–51) with a healing rate of 59.3% was achieved. In general, LIFT was the technique that failed the most (37.5%). The recurrence was statistically more frequent in the high-CTF (56.3% vs 22.2%, $P < 0.0001$). 17.8% required later proctologic surgery.
Conclusion: Surgical treatment of trans-sphinteric fistula, in a specialized proctologic unit, has similar outcomes as the ones published in literature. Assistance in a MAS department has not increased the rate of complications or readmissions after the treatment of CTF.

P593
Sexual function in patients suffering from sacrococcygeal pilonidal sinus disease

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Aim: The aim of this prospective study was to evaluate the impact of sacrococcygeal pilonidal sinus disease (SPSD) on sexual function and whether this is influenced by surgical treatment of SPSD.
Method: A total of 88 male patients who underwent surgical treatment for SPSD were included. Sexual function was pre- and postoperatively assessed by the Sexual Self-Consciousness Scale (SSCS, score range 0–48), subdivided into the sexual embarrassment (SE, score range 0–24) and sexual self-focus subscale (SFF, score range 0–24).Higher SSCS scores indicated more sexual dysfunction.
Results: The mean (±SD) preoperative SSCS-score was 14.5 ± 9.1, and was 13.9 ± 8.4 two weeks postoperatively ($P = 0.394$). Six and 12 weeks after surgery, there was a significant reduction to 12.2 ± 9.0 ($P = 0.002$) and 12.3 ± 8.8 ($P = 0.013$), respectively.SE decreased from 5.5 ± 5.1 preoperatively to 5.1 ± 4.6 ($P = 0.258$), 4.2 ± 4.7 (0.004) and 4.0 ± 4.6 (0.013) two, six and 12 weeks after surgery. For SFF, there was a decrease from 9.0 ± 5.0 to 8.9 ± 4.9 ($P = 0.717$), 7.8 ± 5.2 ($P = 0.004$) and 8.2 ± 5.3 ($P = 0.168$), respectively.
Conclusion: This is the first prospective study on sexual function in patients with SPSD, showing a significant decrease in sexual dysfunction both six and 12 weeks after surgery compared to preoperatively.

P594
Repair of rectovaginal fistula and stenosis of rectal anastomosis by minimal invasive transanal access (Gel Point Path)

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Aim: The advantages of total transanal mesorectal excision has been described with better visualization and access to the lower rectum. We use this access to repair a stenosis of low rectal anastomosis with rectovaginal fistula that would be difficult to access by conventional laparoscopy abdominal pathway
Method: 60 year patient with a rectal neoplasia at 6 cm from anal verge cT3N2MRC. After CT-RT a low resection with mechanical anastomosis EEA31 + ileostomy was performed (AP: Complete pathological response ypT0N0 (0/16). During ambulatory follow-up a rectovaginal fistula was detected one cm above rectal anastomosis.

Opaque Enema: rectovaginal fistula + rectal anastomosis stenosis. Rectoscopy: large rectovaginal fistula and impassable rectal anastomosis. RNM no recurrence signs are recorded

A new anterior rectal rectal resection was performed with an abdominal and transanal laparoscopic combined approach (Gel Point Path), with colorectal anastomosis with EEA 31, vaginal repair and epiploplasty. The intervention was especially laborious due to the fibrous tissue.
Results: fistulous path without tumor infiltration. Opaque Enema: permeability and absence of leaks. The ileostomy was closed.
Conclusion: We believe that transanal access through the Gel Point Path can be a good option for rectal anastomosis stenosis and rectovaginal fistula.

P595
THD with anal fissure excision

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Aim: To study the effectiveness of treatment of chronic hemorrhoids using THD technique.
Method: In Kiev Region Clinical Hospital, Proctology Department November 2007 through March 2016 overall of 844 patients were submitted for THD. Age 21–73 (mean 37.6) years. Males – 471 (55.8%), females – 373 (44.2%). 84 (10%) patients had grade II disease, 652 (77.3%) – grade III, 108 (12.7%) – grade IV. 169 (20%) – had combination of hemorrhoids and anal fissure. The operation consisted of Doppler-guided hemorrhoidal dearterialization (always 6 arteries) using THD Evolution device. In case of hemorrhoid and anal fissure combination fissure excision, sphincterotomy and anoplasty was performed prior to THD.
Results: In the early postoperative period, 62 (7.4%) patients needed narcotic analgesia. 64 (7.6%) had early postoperative complications: 2 (0.2%) anal abscess; 5 (0.6%) profuse bleeding on day 4–5; 57 (6.8%) thrombosis of hemorrhoidal nodes. Total recurrence rate was 4% (34 patients). 6 (17.6%) underwent hemorrhoidectomy; 7 (20.6%) – vacuum ligation of 1 or 2 nodes; 21 (61.8%) – external node excision under local anesthesia.
Conclusion: THD is both radical and minimally invasive treatment for hemorrhoidal disease.

THD and anal fissure excision can be performed simultaneously.

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THD significantly reduces complications in the treatment of hemorrhoidal disease.

P596

Pelvic floor dysfunction in chronic anal fissure

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Aim: In chronic anal fissure the resting tone of the anus is often raised. The current conservative treatment focuses on diminishing the tone but the success rate is still moderate. We hypothesized that pelvic floor dysfunction plays an underlying role in the etiology.
Method: In this single centre prospective cohort study all patients with chronic anal fissure from 2016 until present were included. All medical data were collected including pain scores (VAS) and PROM (validated). Digital rectal and pelvic floor examination was performed, followed by EMG registration with an intra-anal probe (MAPLe).
Results: 179 patients (133 women, 56 men)with a mean age of 42.2 years were included. Mean scores for pain (VAS) and PROM were 6.5 and 5.7 (range (1–10) respectively. 55 (36%) of the 154 patients had pelvic floor dysfunction (dyssynergia). 71 patients started pelvic floor therapy and in 48 EMG registration was performed (23 initially and 25 delayed). Their initial mean tone at rest was 9.6 mV and 6.5 mV respectively. (consideration 2 mV as normal).
Conclusion: 36% of patients with chronic anal fissure have a pelvic floor dysfunction. Pelvic floor physiotherapy might be useful in those patients. We will start a controlled randomised trial to investigate this.

P597

"Minimal open haemorrhoidectomy" – initial results

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Aim: To develop a minimal traumatic open haemorrhodectomy, to reduce postoperative pain and preserve continence.
Method: Sixteen patients with Minimal Open haemorrhoidectomy *(MOH)*, and 14 operated with Ligasure Hæmorrhoidectomy (LH), 12 with Transanal Haemohroidal Dearterialization (*THD*).

MOH: Diathermy dissection was used, the membrane covering the internal anal sphincter was preserved. Excision was limited, of the skin the top of the pedicle, of anal mucosal only that overlying the pedicle. Haemorrhoidal intra-anal cushions were left to preserve continence. The pedicle was not ligated, arteries supporting haemorrhoids were cauterized. *LH* and *THD* was performed with standard technique.
Results: Postoperative day 1–14; there was no difference in self-reported pain (VAS-scale 1–10), intake of analgetics or postoperative recovery measured as well being (three graded scale).

After 3 months patients' evaluation of "Improvement" (Lichert scale 1–7) was, MM 6.5, THD 6, LH 6.5. Satisfaction with the operation was 6 for all three groups. Wexner anal incontinence score pre and postoperatively were *MM* 4.5 and 3, *THD* 5.5 and 3.5, *LH* 1 and 2.
Conclusion: Data implies that a modified Open Haemorrhoidectomy, Mini-Milligan has a postoperative course and immediate postoperative results similar to THD and LH. Anal continence is not affected. RCT:s are needed.

P598

Anal fissures: trends and outcomes from two national databases

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Aim: Here we review national trends in surgical management of anal fissure as captured by the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) and the National Inpatient Sample (NIS).
Method: The NSQIP (2005–2016) and the NIS database (1998–2013) were queried for patients who underwent treatment for anal fissure. Patients were grouped by procedure type. Patient demographics and outcomes were compared over time and by procedure group.
Results: Of 725 patients in the NSQIP database, 30.5% underwent sphincterotomy, 27.3% fissurectomy, 22.8% curettage/cautery, and 13.2% chemo-denervation. 76.7% of procedures were outpatient, most often chemo-denervation (84%), and least often sphincterotomy (67.1%, $P = 0.0001$). There was no difference in wound infection rate (1.4%), reoperation (2.1%), readmission (3.4%) over time or by group examined.

Of 5151 from the NIS database, 48.6% had left lateral, 8.3% posterior, and 43.1% other sphincterotomies. Over time, mean Charlson Comorbidity Index increased (0.6 ± 1.4 to 1.1 ± 1.6, $P < 0.0001$), but there was no change in overall or wound complication rate over time or by group (12.0%, 1.0% respectively).
Conclusion: The persistent inpatient treatment of this traditionally outpatient procedure reflects changing trends in presentation and management. Further study is necessary to evaluate underlying reasons for these changes.

P599

Perianal fistulas: trends and outcomes from the American College of Surgeons National Surgical Quality Improvement Program (NSQIP)

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Aim: Management of perianal fistulas is a cornerstone of colorectal practice. Here we review trends as captured by the NSQIP database.
Method: Fistula-in-ano surgeries were identified in NSQIP (2005–2016). Patients were grouped by intervention. Patient demographics and postoperative outcomes were compared by time and procedure group.
Results: Of 6455 cases, 51.3% involved ischioanal/intramural abscess, 26.9% involved seton placement, and 6.7% were glue or plug. Over time, ischioanal/intramural abscesses with fistula increased from 39.6 to 61.3% of procedures, isolated seton placement decreased from 28.3 to 18.6%, and glue/plug placement decreased from 15.1 to 3.5% ($P < 0.0001$). Outcomes worsened over time, with an increase in overall complications (5.7 to 15.5%, $P < 0.0001$), readmission rate (6 to 7.3%, $P = 0.003$), and complications ≥ Clavien-Dindo grade 3 (0 to 5.5%, $P < 0.0001$). Trans/supra/extrasphincteric or multiple fistulas had the highest rates of complications ≥ Clavien-Dindo grade 3 (5.3%, $P = 0.05$). Patients with associated ischioanal/intramural abscesses were most likely to present with sepsis (11.5% $P < 0.0001$), but had lowest wound complication rates (2.8%, $P = 0.03$)
Conclusion: Eleven years of national data reveals an increase of high-grade complications and decrease in outpatient management of this disease. Further study is necessary to evaluate underlying reasons for these changes.

P600

Hemorrhoids: trends and outcomes from a national database

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Introduction: New techniques have been developed which have changed patient management of hemorrhoids in the last decade. Here we review national trends in hemorrhoidectomy as captured by the American College of Surgeons National Surgical Quality Improvement Program (NSQIP).
Method: NSQIP was queried for patients who had undergone hemorrhoidectomy (2005–2016). Patient demographics and postoperative outcomes were compared over time and by procedure group.
Results: 6135 hemorrhoidectomies were identified. 73.4% were stapled, followed by internal/external, external, internal, and banding (12.2%, 6.5%, 4.1%, 2.9%, respectively). Over time, there was an increase, then decrease in stapled hemorrhoidectomies (67.4% to 85.0% to 71.7%, $P < 0.0001$), and a decrease in banding (7% to 2.4%, $P < 0.0001$). Complications ≥ Clavien-Dindo grade 3 increased significantly (0% to 2.4%, $P < 0.0001$). With multivariate analysis controlling for comorbidities, stapled hemorrhoidectomy had the lowest rate of wound complication and external the highest. In 2016, the odds ratio of wound complications were 10.1 for external (CI 1.6–43.4), 8.9 internal (CI 1.4–57), 4.1 internal/external (CI 1.1–15.5), and 7.8 rubber banding (CI 1.1–53.3). This trend persisted across all years observed.
Conclusion: Eleven years of national data reveals persistence of the stapled hemorrhoidectomy, and increased high-grade complications. Further study is necessary to evaluate underlying reasons for these changes.

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P601

Efficacy of additional injection of autologous stromal vascular fraction combined with platelet-rich plasma in transanal advancement flap repair of high transsphincteric fistulas

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Flap repair fails in one of every three patients with a high transsphincteric fistula, probably due to chronic inflammation in the remaining fistulous tract. Platelet Rich plasma (PRP) and stem cells could possibly suppress chronic inflammation. Usually stem cells are harvested by enzymatic isolation and culture expansion, which is expensive and time consuming. Mechanical micronization of adipose tissue is a new technique to obtain autologous Stromal Vascular Fraction (SVF), containing progenitor cells, which can be reprogrammed into stem cells by signalling substances from PRP.

Aim: To assess the feasibility, safety and efficacy of additional injection of autologous SVF combined with PRP in flap repair of high trans-sphincteric fistulas.

Method: Lipo-aspirate was harvested and centrifuged to isolate dehydrated adipose tissue, which was fractionated and centrifuged to obtain autologous SVF. Autologous PRP was obtained by centrifuging a venous blood sample. Combining PRP and SVF resulted in Platelet Rich Stroma, which was injected along the fistulous tract prior to flap repair.

Results: This procedure was performed in 18 patients. No side effects were observed. Within 3 months the external opening was completely closed in 7 of the 8 first patients (88%).

Conclusion: Additional injection of PRS seems to be feasible, safe and effective.

P602

Anorectal disorders in patients with chronic hemorrhoids of III-IV degree

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Aim: To determine the prevalence of anorectal disorders in patients with chronic hemorrhoids of III-IV degree.

Method: Characteristics of anorectal disorders (Rome IV) were evaluated in 140 patients with chronic hemorrhoids III-IV degree.

Results: In analyzing the frequency of manifestations of anorectal disorders, we have found that in patients with chronic hemorrhoids of III degree, the following manifestations of anorectal disorders such as fecal incontinence (F1) (OR 0.33, 95%, CI 0.14–0.76, $P = 0.01$), unspecified functional anorectal pain (F2b) (OR 0.24, 95%, CI 0.09–0.60, $P = 0.003$), proctalgia fugax (F2c) (OR 0.18, 95%, CI 0.06–0.56, $P = 0.003$) and functional defecation disorders (F3) (OR 0.26, 95%, CI 0.11–0.60, $P = 0.002$). Levator ani syndrome (F2a) was found to be of the same frequency and was unreliable in patients with varying degrees of hemorrhoids. Two or more manifestations of anorectal disorders were also more often diagnosed with hemorrhoids of IV degree – OR 9.05, 95%, CI 3.70–22.15, $P = 0.001$.

Conclusion: Anorectal disorders in patients with hemorrhoids occur much more often than is commonly believed.

P603

Ligation of the intersphincteric fistula tract versus endorectal advancement flap for high perianal fistulas in Crohn's disease: a retrospective cohort study

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Aim: The aim of this study was to evaluate the effectiveness of ligation of the intersphincteric fistula tract (LIFT) versus advancement flap (AF) procedure in Crohn's high perianal fistulas.

Method: In this retrospective study, all consecutive Crohn's patients ≥18 years treated with LIFT or AF between 2007 and February 2018 were included. Primary outcome was success (closure of external opening). Secondary outcomes were recurrence, and newly developed postoperative incontinence.

Results: Forty procedures in 36 patients (33.3% male, mean age 35, LIFT:19, AF:21) were included. The overall success and recurrence rates were not significantly different between LIFT and AF (78.9% vs 52.4% ($P = 0.113$) and 15.8% vs 19.0% ($P = 0.786$)). A non-significant trend was seen towards higher success percentages after longer preoperative seton drainage for both procedures (7.2 months versus 5.3 months). Postoperative incontinence wasn't significantly different (LIFT:15.8% vs AF:23.1%). Interestingly, 25.0% had improved continence postoperatively. In AF a trend was seen towards higher success percentages after anti-TNF use (71.4% versus 46.2%).

Conclusion: In Crohn's high perianal fistulas the success, recurrence and incontinence rates aren't significantly different between LIFT and AF. However, success rates seem higher after LIFT, and longer preoperative seton drainage, with lower incontinence rate after LIFT.

P604

Pilonidal disease – individualization and pathogenesis-oriented surgery

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Aim: Literature data suggests that pit picking, cleft lift procedures with primary closure of off-midline incisions are among the most effective in pilonidal disease treatment. We present our experience with treating primary and recurrent pilonidal disease using tailored surgery, based on severity of the disease.

Method: For 6-year period (2011–2017) 66 patients with primary (52) or recurrent (14) pilonidal disease were treated by authors. Surgical methods are: (1) excision of pilonidal tracts through separate incisions and lateral drain /Lord-Bascom/. (2) excision with off-midline closure /Karydakis/ (18 patients).

Results: All patients were recurrence free. The healing time was 9–16 days. The major complications occurred in 5 patients – 2 postoperative hematoma and 3 partial wound dehiscence managed conservatively. According to our experience and literature data, we propose modern tailored radical surgical treatment of pilonidal disease: in acute abscess – 2 stage procedure with off-midline incision and drainage and pit picking; in chronic sinus or/and cyst formation – Lord-Bascom operation in simple cases or in complex disease – modified Karydakis operation; in recurrent cases: Karydakis operation.

Conclusion: Individualization, minimal invasiveness and pathogenesis-orientated surgery of pilonidal disease are the core factors, leading to best results and patient satisfaction.

P605

Safety and efficacy of autologous fat and adipose-derived stromal vascular fraction injection for treatment of radiation-induced rectovaginal fistula

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Aim: To evaluate safety and efficacy of fat grafting combined with stromal-vascular fraction injection for treatment of rectovaginal fistula caused by radiation therapy.

Method: 24 patients with radiation-induced rectovaginal fistula treated with autologous fat and stromal-vascular fraction injection since 2012 consecutively were included in this study. Fistula diameter ranged from 3 mm to 2.5 cm. Fat harvesting was performed with suction-assisted liposuction. Deep plane of rectovaginal septum was infiltrated with, centrifuged at 1200 g for 3 min, fat. Stromal-vascular fraction was isolated with collagenase type 2 digestion and injected into submucosal plane of rectum and vagina. To assess outcomes physical examination, photography, ultrasound, MRI and histology were used.

Results: In all cases complete spontaneous healing of fistula has been achieved. From one to three procedures was necessary to attain closure of defect which took from four to 10 months. No complications or fistula relapse were observed after restoring of intestine continuity in long term follow up.

Conclusion: Autologous fat and stromal-vascular fraction injection is a safe, highly effective and minimally invasive method of treatment of radiation-induced rectovaginal fistula.

P606

Parameters of anorectal manometry after fistulectomy with primary sphincteroplasty

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Aim: To evaluate changes at anorectal manometry (AM) parameters 3 months after fistulectomy with primary sphincteroplasty (FEPS).

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Method: 47 patients with complex transsphincteric anal fistulae underwent FEPS. Resting anal pressure (RAP) was initially below normal values in 8 cases. 3 months after surgery AM parameters were evaluated in 34 patients.
Results: Mean (MRAP) and maximum (MaxRAP) RAP decreased significantly after surgery from the baseline, but differences were not statistically significant (MRAP before surgery M = 47 ± 11.9 mmHg, after surgery M = 42.6 ± 7.9, $P = 0.097$; MaxRAP M = 98.1 ± 34.8, 81.2 ± 18.7, respectively, $P = 0.065$). There was no significant changing at squeezing anal pressure and RAP in patients with initially lower values. In patients with initially normal values prior to surgery ($n = 26$), the decrease of RAP was significant (before surgery M = 56.1 ± 7.6 [46.1–69.0], after surgery 45.5 ± 8.8 [38–63], $P = 0.006$). The values of RAP were below the norm after surgery in 13/26 cases. In 30.7% (4/13) the fistula passed through a upper 1/3 of sphincter and in 69.2% the fistulae were anterior.
Conclusion: After FEPS the main changes in RAP occur in patients with initially normal values and mainly with anterior fistula.

P607
The preliminary results of «Invaginative» method for rectovaginal fistulae

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Aim: To evaluate the efficacy of «invaginative» method.
Method: Thirty seven women with high rectovaginal fistulas (RVF) were included in the study. The causes of RVF included inflammatory diseases 7 (18.9%), obstetric injury 21 (56.7%), pelvic surgery 5 (13.5%), others 4 (10.8%). Mean age was 37.3 (range 20–73). All patients were underwent fistula surgery by «invaginative» method, which consists of invagination of the fistula tract into the rectal lumen. Twenty (54.1%) patients had undergone two or more previous unsuccessful repairs. In four cases (10.8%) diverting stoma was previously formed. Mean follow-up was 14 months (range 2–19).
Results: Recurrence of RVF occurred five patients (13.5%) from 2 to 3 weeks postoperatively. No other postoperative complications were registered.
Conclusion: «Invaginative» method is safe and effective technique for treatment of high rectovaginal fistulae. This method can be performed without diverting colostomy in most cases.

P608
Embolization of the superior rectal arteries for hemorrhoidal disease : midterm results in 25 patients

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Aim: To evaluate the efficacy and safety of superior rectal artery embolization as a first line of invasive treatment for hemorrhoidal disease.
Method: Between 2014 and 2015, all patients with grade II-III hemorrhoids refractory to medical treatment were prospectively included. A transfemoral superselective superior rectal artery branch embolization was performed using microcoils. Clinical outcomes were evaluated using the French bleeding score, the visual analogue scale (VAS), the Goligher prolapse and the quality of life scores. Clinical success was defined by the relief of symptoms, based on the improvement ≥ 2 points of VAS or bleeding score.
Results: 25 consecutive patients (16 men, mean age = 53 [30–76] years) underwent superior rectal artery embolization. Eight patients underwent two embolizations. No patients experienced any early or late complications. After 2 years of follow-up, clinical success occurred in 17 patients (68%). The VAS and bleeding score decreased significantly from 4.6 to 2.3 ($P < 0.01$) and from 5.5 to 2.3 ($P < 0.01$), respectively. Quality of life and prolapse scores were also significantly improved ($P < 0.05$). A complete clinical failure was finally observed in 8 patients (32%).
Conclusion: Hemorrhoidal artery coil embolization seems to be safe and effective in more than two thirds of patients with grade II-III hemorrhoids.

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European Society of Coloproctology (ESCP) Core Outcome Set (COS) for haemorrhoidal disease (HD): an international Delphi study

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Aim: The aim of this study was to develop a Core Outcome Set (COS) for haemorrhoidal disease (HD) in cooperation with the ESCP.
Method: A Delphi study was performed according to the OMERACT methodology. In total 38 ESCP representatives and 30 patients were invited. Panel members were asked during sequential questionnaire rounds and one face-to-face meeting to rate the appropriateness of each outcome on a 9-point Likert scale. During the face-to-face meeting the panel reached consensus on the primary and secondary endpoints of a COS for HD.
Results: Eighteen healthcare professionals from nine countries and 16 patients reached consensus to select the domain 'symptoms' as primary endpoint, and 'complications', 'recurrence' and 'patient satisfaction' as secondary endpoints. Furthermore, consensus was reached that the domain 'symptoms' should be a Patient Reported Outcome and include the outcomes 'pain' and 'prolapse', 'itching', 'soiling' and 'blood loss'. The domain 'complications' should include the outcomes 'incontinence' which should be assessed by the Wexner questionnaire, 'abscess' by physical examination, 'urinary retention' by ultrasonography, 'anal stenosis' by physical examination, and 'fistula' by MR imaging after inconclusive physical examination.
Conclusion: We developed an international COS which can be used in future studies evaluating treatment for HD.

P610
Atypical perianal disease in HIV-positive patients, a case report

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Aim: Report one case of atypical perianal disease in HIV-positive patients, as perianal diseases can present as the first clinical manifestation of HIV infection in up to 5% of cases.
Method: A 45-year-old man with lumbar pain, functional limitation and progressive atrophy of limbs for months, and also perianal pain in the last 5 days. Examination: right perianal abscess. The patient underwent surgical drainage. During the postoperative period he underwent two new interventions due to infection and bleeding, but he persisted with disproportionate pain. Imaging and functional tests were assessed by Neurosurgery and Neurology, without finding specific pathology. A systemic study confirmed HIV infection.
Results: During the follow-up, a complex anal canal ulcer was found requiring a colostomy. With improvement of immunosuppression parameters healing of the ulcer was achieved by reconstructing the transit at 8 months.
Conclusion: Anorectal pathologies are typical in the homosexual population and HIV positive patients. About 30% of HIV positive patients will have some anorectal manifestation during the illness, like abscesses, hemorrhoids, ulcerous lesions, tumors or condylomas in relation to other sexually transmitted diseases such as herpes type 2, or CMV colitis.

P611
Magnetic resonance imaging and Goodsall's rule for fistula in ano

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Aim: Assessment of reliability of Goodsall's rule in management of fistula in ano
Method: Data from MRI pelvis for anal fistula was collected from hospital records, as well as operative records for patients that underwent surgery. Internal and external openings were noted with extent of tracts through the sphincters.
Results: 66 patients with clearly demonstrated fistula, 48 (72.7%) were male and 18 (27.3%) female. The median age was 42. Out of these, 26 (39.4%) had anterior and 40 (60.6%) had posterior openings. Goodsall's rule was found to be true in 80.3%($n = 53$) and not true in 19.7%($n = 13$). 88.5%(23/26) of anterior tracts and 75% (30/40) posterior tracts followed the rule. 4 were horseshoe fistulae, all of which followed the rule. Twenty-six were intersphincteric fistulae, of which 21 (80.7%) were found true to the rule. Twenty-one fistulae were superficial of which 16 (76.2%) followed the rule. There were 2 supralevator fistulae both following the rule. 8 of 11 transsphincteric fistulae had predictive tracts.
Conclusion: Goodsall's rule appeared to be a good predictor of tracts for perianal fistula resulting from anorectal suppuration and not related to IBD or cancers or from other secondary causes.

P612
Micronutrition deficits after pit picking with adjunct laser therapy in Pilonidal Cyst: a possible cause of failure

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Aim: Pit Picking is a minimal invasive first line therapy for Pilonidal cyst (PNS). The addition of laser treatment of the subcutaneous fistula track and abscess cavity improves the surgical outcome. But in some cases chronic wound healing disturbance is present which blocks healing.
Method: In a prospective trial we investigated the effectiveness of pit picking with additional laser therapy in Pilonidal cyst. If a persistence with chronic wound healing

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disturbance was present at 3 months postoperatively, we analyzed the individual micronutrition level of the patient in a whole blood analysis (potassium, iron, zinc, selen, copper, magnesium, folic acid and vitamins A, B6, B12, C, D) and supplemented the deficient vitamins and trace elements for 3–6 months.

Results: In 100 patients we achieved a primary healing in 86% of cases. Chronic wound healing disturbance with reduced micronutrition levels were present in 14 patients. After supplementation 10/14 patients healed without any further surgery.

Conclusion: Individual factors strongly influence the outcome of a surgical procedure. In PNS we are able to demonstrate the influence of miconutrition deficits as a cause of failure. As long as these deficits are not corrected, the surgical success remains questionable.

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