Free Paper Presentations

F01

Totally laparoscopic rectosigmoid resection with transanal specimen extraction has a good short-term outcome

A. Wolthuis, F. Penninckx & A. D'Hoore
University Hospital Gasthuisberg, Leuven, Belgium

Aim: Natural orifice specimen extraction avoids a muscle-split incision for specimen retrieval. The results of a pilot study with a novel technique are presented.
Method: All consecutive patients undergoing laparoscopic rectosigmoid resection with transanal specimen extraction were included. A specimen retrieval pouch was used to facilitate specimen extraction. All perioperative data, postoperative morbidity and short-term outcome were gathered in a prospective database.
Results: Twenty-one patients were treated by this new technique. Median age was 41 years (IQR: 34–66), median BMI was 23 kg/m^2 (IQR: 22–26) and 90% of the patients were female. Thirteen (62%) patients underwent a resection for endometriosis, 5 (24%) for diverticular disease and 3 (14%) for neoplasia. Median operating time was 105 min (IQR: 90–110) and median intraoperative blood loss was 10 ml (IQR: 0–20). The median length of the extracted specimen was 20 cm (IQR: 13–25). There was one case of anastomotic leakage (5%). The median hospital stay was 6 (IQR: 5–7) days. All patients did well at a median follow-up of 3.6 months and none reported anal dysfunction.
Conclusion: Totally laparoscopic rectosigmoid resection is feasible and has a good short term outcome.

F02

Laparoscopic coloanal anastomosis for rectal cancer: randomised trial comparing laparoscopic vs initial perineal approach

C. Laurent, F. Leblanc, M. Sheffler & E. Rullier
Hopital Saint Andre, Bordeaux, France

Aim: Laparoscopic sphincter preservation for low rectal cancer is challenging due to the risk of positive margins. We hypothesized that perineal approach first may improve quality of surgery, as compared to the conventional laparoscopic abdominal approach first.
Method: Sixty patients with a low rectal cancer were randomised to a conventional laparoscopic pelvic dissection followed perineal rectal transection and an initial perineal approach followed by the laparoscopic pelvic dissection. The primary end point was the rate of a positive circumferential margin.
Results: There were 30 patients in each group. There was no difference in operative mortality, morbidity (10% *vs* 10%) or distal margin positivity (3% *vs* 3%). The respective rates of circumferential margin positivity were 15% and 0% ($P = 0.03$).
Conclusion: The perineal approach reduces the risk of a positive circumferential margin during laparoscopic TME with coloanal anastomosis.

F03

Sphincter preservation in rectal cancer is associated with patients' socioeconomic status

L. Olsson[1], F. Granstrom[2] & L. Pahlman[3]
[1]*Department of Molecular Medicine and Surgery, Karolinska Institutet, Stockholm, Sweden,* [2]*Centre for Clinical Research, Eskilstuna/Uppsala, Sweden,* [3]*Deartment of Surgery, Uppsala, Sweden*

Aim: The choice of operation for rectal cancer is complex. In addition to clinical factors, we hypothesized the socioeconomic background influences the decision.
Method: Data on civil status, education and income were linked to the Swedish Rectal Cancer Registry 1995–2005 ($n = 16\,713$) and analysed by logistic regression, adjusting for age, sex, stage, distance from the anal verge, type of hospital and region.
Results: Unmarried patients were least likely (OR 0.76; 95% CI 0.64–0.88) and university educated men most likely (OR 1.30; 1.04–1.62) to have an anterior resection (AR). Patients with the highest income (Q4) had an AR more often than all others (OR income Q1 0.80; 0.69–0.94, income Q2 0.85; 0.73–0.98 and income Q3 0.86; 0.75–0.98). Uiniversity educated patients were least likely to have an abdominoperineal resection (OR 0.78; 0.63–0.98).
Conclusion: The choice of operation for rectal cancer is not socio-economically neutral. Factors including comorbidity and smoking may explain the differences to some extent but inequality in the'quality of treatment is also possible.

F04

Rectal washout and local recurrence after rectal cancer surgery

K. Kodeda[1], E. Holmberg[2], F. Jörgren[3], S. Nordgren[1] & G. Lindmark[3]
[1]*Sahlgrenska Academy, University of Gothenburg/Sahlgrenska University Hospital, Gothenburg, Sweden,* [2]*Oncological Centre, Western Sweden Health Care Region, Gothenburg, Sweden,* [3]*Lund University/Helsingborg Hospital, Helsingborg, Sweden*

Aim: Adenocarcinoma of the rectum exfoliates viable cells, which have the ability to implant. These are decreased by intraoperative rectal washout. There is no conclusive evidence of the effect of rectal washout on local recurrence after rectal cancer surgery.
Method: Data from the Swedish Rectal Cancer Registry were analysed. This covers 97% of rectal cancer patients diagnosed in the country with 2% lost to follow up. Included were patients without distant metastases operated by anterior resection during 8 years (1995–2002) and followed for 5 years. Rectal washout was performed at the discretion of the surgeon.
Results: Four thousand six hundred and seventy-seven patients (3749 washout, 851 no washout, 77 information missing) were analysed. The local recurrence rate was 10.2% in patients without and 6.0% in patients with rectal washout ($P < 0.001$). Univariate analysis with logistic regression favoured washout with an odds-ratio of 0.56 (95% CI 0.43–0.72, $P < 0.001$). Multivariate analysis favoured washout with an odds-ratio of 0.61 (95% CI 0.46–0.80, $P < 0.001$). Multivariate analysis restricted to patients operated for cure was consistent with these findings, odds-ratio 0.59 (95% CI 0.44–0.78, $P < 0.001$).
Conclusion: Rectal washout should be performed in anterior resection for rectal cancer to reduce the risk of local recurrence.

F05

Analysis of risk factors affecting postoperative recurrence and cost-effectiveness on surveillance for patients with T1 colorectal cancer

H. Hasegawa, S. Iida, K. Okabayashi, Y. Ishii, T. Endo & Y. Kitagawa
Department of Surgery, Keio University, Tokyo, Japan

Aim: The aim of this study was to determine the risk factors affecting recurrence in patients with T1 colorectal cancer (CRC) treated with radical surgery and to evaluate the cost-effectiveness of surveillance for postoperative recurrence.
Method: Between 1990 and 2008, a total of 380 consecutive patients with T1 CRC underwent surgery in our institution. Clinicopathological factors associated with recurrence, and the cost-effectiveness of surveillance for postoperative recurrence were analysed. Measurement of CEA and computed tomography were performed every 6 months. Colonoscopy was performed one year after the operation, and every 3 years thereafter.
Results: The median follow-up period was 52 (1–189) months. Postoperative recurrences were seen in 11 (3%) patients of whom two were alive and cancer free. The presence of lymphatic invasion was significantly associated with recurrence ($P = 0.0008$). The 5 and 10 year disease free survival rates for patients with N-ly-, N-ly+, N+ were 99.1%/99.1%, 95.4%/73.2%, 95.5%/95.5%, respectively. The total cost for surveillance was $450000 and the cost to detect a relapsed patient was $40000.
Conclusion: Lymphatic invasion was an independent risk factor of recurrence in patients with T1 CRC. Postoperative intensive follow up for patients with pT1 CRC may be unnecessary.

F06

Does the interval to surgery following chemoradiation for rectal cancer affect outcome?

A. Rasulov[1], Y. Sheligin[1], A. Boiko[2], I. Droshneva[2] & E. Markova[1]
[1]*State Research Center of Coloproctology, Moscow, Russian Federation,* [2]*Moscow Herzen Research Oncology Institute, Moscow, Russian Federation*

Aim: The optimal time for surgery after neoadjuvant chemoradiation (CR) is controversial.The effect of the time interval between CR and surgery on the result of treatment was assessed.
Method: From 2006, 108 pts with T2–4 N0–2 M0 rectal carcinoma were enrolled in the study. CR was given concurrently with 5-FU 350 mg/m^2 and cisplatin 90 mg up to a total dose of 47 Gy. Surgery was performed after 21–40 days (group 1) and after 41–72 days (group 2) after CR.
Results: The distance of the'lower border of the tumour from the anal verge (5.1 ± 2.2 and 5 ± 2.3 cm) and the proportion of sphincter saving procedure (SSP) (72.7% and 71.7%) were similar in both groups. There was a greater degree of tumour downstaging (pT0–2) in group 2 (52.8%) compared with group 1 (32.6%), $P = 0.02$. The tumour regression grade (grades 1–2) 39.6% and 29.1%, accordingly. At a median follow-up of 17 months there were 18.1% distant metastases (in 3.6% cases with local recurrence) in group 1 and 1.9% in group 2 ($P = 0.008$). Disease Free Survival (DFS) was 67.9% and 97.4% in groups 1 and 2 ($P = 0.007$). Overall survival (OS) was also better in group 2 (100%) comparing with group 1 (82.9%) ($P = 0.02$).
Conclusion: Delaying surgery after CR did not increase the rate of SSP but it wasassociated with tumour downstaging and improved long term results.

F07

Usefulness of immunohistochemistry and microsatellite instability in families with suspected Lynch syndrome

P. Orellana[1], A. M. Wielandt[1], K. Alvarez[1], E. Pinto[1], C. Hurtado[1], A. J. Zarate[1], C. Suazo[1], A. Garmendia[2], L. Contreras[2], U. Kronberg[1], J. Church[3], P. Carvallo[4] & F. Lopez-Kostner[1]
[1]*Unidad de Coloproctología. Laboratorio de Oncología y Genética Molecular., Santiago, Chile,* [2]*Unidad de Anatomía Patológica, Clínica las Condes., Santiago, Chile,* [3]*Department of Colorectal Surgery, Cleveland Clinic Foundation., Ohio, United States,* [4]*Departamento de Biología Celular y Molecular, Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Santiago, Chile*

Aim: The study aimed to select patients suspicious of Lynch syndrome (LS) for genetic studies to identify MLH1, MSH2 and MSH6, microsatellite instability (MSI) and to use immunohistochemistry (IHC) to identify proteins derived from MLH1, MSH2 and MSH6 to assess their value as predictive markers.
Method: Thirty-eight families with suspected LS (21 Amsterdam/17 Bethesda) were selected. They were studied by MSI, IHC for MLH1, MSH2 and MSH6 mutations in the tumour, and MLH1, MSH2 and MSH6 by SSCP sequencing and MLPA techniques.
Results: Genetic analysis showed mutations in 19/38 families (11 in MLH1, 6 in MSH2 and 2 in MSH6). In families fulfilling the Amsterdam criteria, mutations were detected in 16/21 (76%). MSI was positive in all 19 families with an identified mutation (18 MSI-H, 1 MSI-L). IHC for the mutated gene correlated in 15/19 (79%) patients. Among patients without an identified mutation, 12 had MSI-positive phenotype, and 7 showed a loss of MLH1 or MSH6 expression.
Conclusion: MSI appeared to be a more reliable predictive marker for mutations in MLH1, MSH2 and MSH6 than IHC. The study was supported by FONDECYT 1040827, Cleveland Clinic Foundation, and Clinica Las Condes.

F08

Outcome following rectal resection after transanal endoscopic microsurgery (TEM)

R. McDonald, R. Hompes, N. Mortensen, I. Lindsey, J. Hill, A. Scott, N. Armitage & C. Cunningham
Oxford Radcliffe Hospitals NHS Trust, Oxford, UK

Aim: The UK TEM database has collected data on over 500 cancers since 1993. This analysis examined the outcomes of those patients who proceeded to rectal resection.
Method: Case note review was performed in 29 cases identified from the UK TEM database who underwent completion resection on the basis of unfavourable pathology.
Results: Surgery performed included anterior resection ($n = 25$), abdominoperineal resection ($n = 3$) and Hartmann's resection ($n = 1$). Resection was undertaken at a mean interval of 66.2 days (range 14–197). Mean length of stay after resection was 16.1 days (range 6 < 51). Residual cancer was

found in 10/29 at the TEM site, 3/29 had no residual cancer but had lymph node involvement and 16/29 had no residual or metastatic disease. 5/29 patients had a permanent stoma, 19/29 a temporary stoma (84.2% reversal rate) and 5/29 patients avoided a stoma. No post operative mortality within 30 days, six have died of metastatic disease and to date, 20 have no evidence of recurrence.
Discussion: The study suggests that completion surgery after TEM has similar complications and stoma formation rates to primary radical surgery supporting a role for TEM in the treatment strategy for rectal cancer.

F09
Risk factors for recurrence after transanal endoscopic microsurgery for rectal malignant neoplasm

A. Arezzo, M. E. Allaix, F. Famiglietti & M. Morino
Digestive, Colorectal and Minimal Invasive Surgery, Torino, Italy

Aim: The indications and results of local excision of rectal lesions are currently under debate.
Method: Rectal lesions treated by transanal endoscopic microsurgery (TEM) were prospectively analysed to identify risk factors for recurrence.
Results: Between 1993 and 2009, 107 patients were treated by TEM for an adenocarcinoma: 48 pT1, 43 pT2 and 16 pT3. The 5 year overall survival rate was100%, 87.6% and 58% for pT1, pT2 and pT3 respectively ($P < 0.001$). The 5 year disease-free survival rate was 93.8%, 80.1% and 42% for pT1, pT2 and pT3 respectively ($P < 0.001$). Recurrence among pT1 was 0% (0/27) in 'low risk' and 23.8% (5/21) in 'high risk' cancers ($P < 0.05$) Submucosal infiltration was a significant risk factor for recurrence: 0% sm1, 16.7% sm2 and 30% sm3. On univariate analysis pT stage, tumour grading and < 1 mm margin freedom were identified as positive predictors. On multivariate analysis only < 1 mm margin freedom and a positive margin were risk factors.
Conclusion: TEM is curative for 'low risk' early rectal malignancy. Preoperative assessment of the risk factors is crucial for optimal treatment.

F10
Modified posterior tibial nerve stimulation for faecal incontinence

M. Ortega, M. G. Alonso, J. M. G. de Cecilia, F. Jimenez, B. Ielpo & J. Cerdan
Hospital Clinico San Carlos di Madrid, Madrid, Spain

Aim: Posterior tibial nerve stimulation (PTNS) is an effective treatment for fecal incontinence. The study evaluated the amplitude of stimulation necessary to perform an adequate intermittent PTNS by a previous localization of the tibial nerve using the MultiStim device and comparing it with the Stoller technique.
Method: Ninety-eight patients underwent PTNS, including 69 by the classical technique and 29 under control of the MultiStim-Sensor.
Results: The two groups were statistically comparable. There was a statistically significant difference between the mean amplitude of stimulation without and with the MultiStim-Sensor (7.26 *vs* 3.74 mA).
Conclusion: Localization of the posterior tibial nerve with the MultiStim-Sensor nerve stimulator is accurate and allows the use of a significatively lower amplitude of stimulation.

F11
Sacral nerve stimulation for faecal incontinence: suboptimal therapeutic responses, adverse events, and their influence on treatment outcome

Y. Maeda[1,2], L. Lundby[1], S. Buntzen[1] & S. Laurberg[1]
[1]*Aarhus University Hospital, Aarhus, Denmark,* [2]*St Mark's Hospital, Harrow, UK*

Aim: There is little information on possible adverse events relating to sacral nerve stimulation (SNS) for faecal incontinence. This study aimed to identify the incidence of suboptimal therapeutic responses and adverse events and to determine their influence on the treatment outcome.
Method: Prospectively collected data from 176 patients who underwent SNS were reviewed retrospectively. Patients' variables and reportable events were analysed by binary regression.
Results: Overall, 592 reportable events (RE) were recorded from 150 patients (85.2%) at a median of 11 months (interquartile range (IQR): 4–26 months). Loss of efficacy (212 events, 87 patients), lack of efficacy (186 events, 68 patients) and pain/discomfort (126 events, 67 patients) accounted for more than 90% of RE. Loss of efficacy (Odds ratio (OR) 2.52, 95% confidence interval (CI): 1.327–4.789, $P = 0.007$), lack of efficacy (OR 2.80, CI: 1.462–5.357, $P = 0.002$) and pain in leg (OR 4.068, CI: 1.342–12.33, $P = 0.013$) were predictors of unfavourable outcome in the medium- to long-term. At a median follow-up of 33 (IQR 20–52) months, 31 (17.6%) patients had had removal of the device or discontinued treatment.
Conclusion: Suboptimal therapeutic responses and adverse events are not uncommon in SNS for faecal incontinence. They have a negative impact on treatment outcome.

F12
Characterization of cerebral activation during external anal sphincter contraction in healthy women: a new model for fecal incontinence studies using functional magnetic resonance imaging

M. Martinez-Vilalta[1], H. Ortiz[2], C. Soriano-Mas[2], Y. Maestre-Gonzalez[1], J. Pujol[2], S. Delgado-Aros[3], I. Casas[2], I. Ibañez-Zafón[3], M. Lopez-Solà[1], I. Royo[4], O. Contreras[2] & D. Parés[5]
[1]*Colorectal Surgery Unit, Hospital del Mar, Barcelona, Spain,* [2]*IAT-PRBB, CRC-Hospital del Mar, Magnetic Resonance Imaging, Barcelona, Spain,* [3]*Department of Gastroenterology, Hospital del Mar, Barcelona, Spain,* [4]*Department of Neurophisiology, Hospital del Mar, Barcelona, Spain,* [5]*Department of General and Digestive Surgery, Parc Sanitari San Joan de Déu, St. Boi de Llobregat-Barcelona, Spain*

Aim: Voluntary anal contraction plays an important role in fecal continence. Development of protocols able to assess the functional network involved is needed to characterize its neurobiological basis. We aimed to present a novel protocol based on functional magnetic resonance imaging (fMRI) and simultaneous anal manometry. Manometry recordings were used to build subject-optimized fMRI analyses which mapped brain regions involved in anal contraction.
Method: In 12 healthy women (45–61 years), a series of 120 whole-brain EPI-BOLD MRI images was obtained. During imaging, subjects were cued to perform anal contractions, registered by an anal manometer. Image analysis was done using SPM8. Individualized General Linear Models (GLM) were built using the anal manometry recordings. Fitting the GLM to the fMRI images identified the brain structures coupled with contractions.
Results: Anal manometry recordings revealed that all subjects followed accurately the contraction cues. Group manometry-based fMRI analysis revealed significant activations in medial primary motor cortices (peak activation T value = 10.5; $P < 0.000001$), bilateral insula ($T = 9.6$; $P < 0.000001$), supplementary motor area ($T = 8.4$; $P < 0.000002$), bilateral putamen ($T = 7.9$; $P < 0.000004$) and cerebellum ($T = 11.8$; $P < 0.000001$).
Conclusion: The protocol has been able to map the brain regions linked to voluntary anal sphincter contraction in healthy subjects.

F13
Comparison of clinical outcome between Internal Delorme procedure and STARR for the treatment of Obstucted Defecation Syndrome (ODS)

S. Martina, E. Novelli, C. Giuseppe, A. R. Luc, M. Trompetto & E. Ganio
Policlinico di Monza, Colorectal Eporediensis Centre, Santa Rita Clinic, Vercelli, Italy

Aim: The study was designed to assess safety and outcome of Stapled-transanal-rectal-resection (STARR) and internal Delorme procedure for obstructive defaecation syndrome (ODS)
Method: A retrospective study using a prospective database included 34 ODS patients. 17 patients (Group A) underwent an internal Delorme and 17 (Group B) a STARR procedure. Patients were evaluated using CCCS, ODS-score and PAC-QoL.
Results: There was no difference in age (STARR 53.8, Delorme 53.7 years). At a mean follow-up of 3.4 (Group A) and 3.9 years (group B) one recurrence was observed in Group B (5.8%). Fourteen (41.2%) patients developed postoperative complications 5 (29.4%) in Group A and 9 (52.9%) in Group B. These included suture-line dehiscence with stenosis (three in Group A), proctalgia (two in Group B), faecal incontinence (two in Group B), bleeding (two in Group B). Transient postoperative faecal urgency was higher in Group B (50%) ($P = 0.001$). Constipation scores improved significantly in both groups as did QoL ($P = 0.001$). The number of evacuations increased (47.1% *vs* 41.2% > 50% increment). Overall QoL was favourable (> 50% improvement) in 70.6% of Group A and in 52.9% of Group B ($P = 0.001$).
Conclusion: Both techniques are safe and effective in the treatment of outlet obstruction. The internal Delorme procedure appears more effective with fewer complications.

F14
Sacral neuromodulation for severe constipation

A. Sharma, B. Liu, P. Waudby & G. Duthie
University of Hull, Hull, UK

Aim: Constipation is a multifactorial symptom often reducing quality of life. We looked at our experience of sacral neuromodulation (SNM to try to identify f patients with constipation suitable for this treatment.
Method: A temporary SNM lead was inserted in eligible patients and pre and post stimulation bowel diaries were compared. Patients with more than 50% improvement in symptoms had a permanent implant. Patients were followed at 2 and 4 weeks, 3, 6 and 12 months and then yearly with bowel diaries.
Results: A temporary lead was inserted in 21 (20 female) patients. Significant improvement was seen in 12 (57%). Delayed orocaecal transit and anismus predicted a poor response. Eleven permanent implants were carried out. Improvement was lost in one patient. Three have required reoperation (wire fracture 1, repositioning of battery 1, poor initial lead placement 1). Improvement in symptoms was maintained in the remainder over a median follow up period of 23 (5–52) months.
Conclusion: SNN can provide long term symptom relief in selected patients with severe constipation. Improvement in symptoms during temporary stimulation is an excellent predictor of response to permanent implantation.

F15
Perforating Crohn's ileitis: delay of surgery is associated with inferior postoperative outcome

I. Iesalnieks[1] & H. J. Schlitt[2]
[1]*Marien hospital, Gelsenkirchen, Germany,* [2]*University Clinic, Regensburg, Germany*

Aim: A perforating phenotype is associated with an increased postoperative morbidity in patients with Crohn's disease particularly after ileocolic resection.
Method: One hundred and ninety-seven patients underwent 231 bowel resections for perforating ileitis between 1992 and 2009. The duration or clinical deterioration was calculated from the onset of clinical exacerbation unresponsive to any medical treatment to the date of surgery.
Results: The median duration of clinical deterioration leading to surgery was 5 months. Patients with a preoperative exacerbation lasting > 5 months had a higher number of structures involved in the inflammatory mass (3.3 *vs* 2.8 structures, $P = 0.013$), and had a higher probability of taking immunosuppressive drugs (26% *vs* 14%, $P = 0.042$), and a multiple-drug combination (31% *vs* 16%, $P = 0.015$) at the time of surgery. Patients with symptoms lasting > 5 months prior to surgery had a higher incidence of postoperative complications (31% *vs* 13%, $P = 0.002$). There was a significant increase in the duration of preoperative clinical deterioration, size of the inflammatory mass, incidence of weight loss, intake of immunosuppressants, and the postoperative morbidity during the last 5 years of the study.
Conclusion: Delay in surgery in patients presenting with symptoms attributable to perforating ileitis is associated with an increased postoperative risk.

F16
Dysplasia in the ileal pouch after restorative proctocolectomy for ulcerative colitis – 23 years of observations

T. Banasiewicz, R. Marciniak, J. Paszkowski, P. Krokowicz, E. Kaczmarek, J. Szmeja, P. Majewski & M. Drews
Poznan University of Medical Sciences, Poznan, Poland

Aim: Dysplasia of the ileal pouch mucosa after restorative proctocolectomy is seen very rarely. There is a lack of data about its origin, diagnostic recommendations and therapeutic standards.
Method: Patients with ulcerative colitis having a restorative proctocolectomy between 1984 and 2009 were followed. Inflammation and neoplasia were evaluated. The incidence of pouch excision or diverting ileostomy was also recorded.

Results: Inflammation was diagnosed in 66 (23.9%) patients, low grade dysplasia in 5 (1.8%) and high grade dysplasia in 3 (1.1%). One (0.4%) patient developed a malignant neoplasm. Low grade dysplasia was significantly more frequent in patients with inflammation than in those without. High grade dysplasia was seen significantly more often in patients with pouchitis. Logistic regression analysis shown that occurrence of pouch mucosal inflammation increases the risk of low grade dysplasia.
Conclusion: Patients with chronic pouchitis, which increases risk of dysplasia, require regular surveillance of the pouch. The frequency of assessment should be done lonce per year. In patients without any gastrointestinal tract complaints, including of pouchitis, screening should be started 5 years after restorative proctocolectomy.

F17

Proctocolectomy and ileal pouch anal anastomosis (IPAA) significantly impairs fertility and pregnancy outcomes in ulcerative colitis (UC) patients

H. Tulchinsky[1,2], E. Hezkelovitch[1,2], N. Horowitz[1,2], J. Klausner[1,2], Z. Halpern[1,2], M. Rabau[1,2] & I. Dotan[1,2]
[1]*Tel Aviv Sourasky Medical Center, Tel Aviv, Israel,* [2]*Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*

Aim: The study aimed to evaluate the effects of IPAA on fertility and pregnancy in UC-IPAA patients.
Method: Female UC patients undergoing IPAA before the age of 44 years who were either married, cohabiting or attempting to become pregnant filled out a questionnaire regarding fertility and pregnancy. Demographic and pouch status data were collected from a prospective database.
Results: Twenty-one patients (46.3 ± 11 years, 47% Ashkenazi, 12% smokers) before IPAA had 29 pregnancies, 23 deliveries (1.9 ± 1.1 offspring /patient) and after there were 13 pregnancies, 10 deliveries (0.6 ± 1.1. offspring/patient), $P = 0.003$. More spontaneous pregnancies occurred before (24.8%) compared with after (6.5%) IPAA, $P = 0.046$. The time to conception was longer after IPAA (8.6 ± 16.5 *vs* 32.2 ± 54.2 months) and more *in vitro* fertilization (2 *vs* 6) was used (P = NS). The number of spontaneous abortions decreased by half (6 *vs* 3, P = NS). Pregnancy duration significantly decreased (40.0 ± 1.5 *vs* 38.1 ± 1.8 weeks, $P = 0.01$) and delivery by Cesarean section increased (22–40%, $P = 0.5$). Offspring weight significantly decreased after IPAA: 3.5 ± 0.5 *vs* 2.8 ± 0.7 kg ($P = 0.008$) and breastfeeding increased (50% *vs* 70%, $P = 0.05$).
Conclusions: IPAA is associated with an increased risk of infertility, decreased length of pregnancy and decreased offspring weight. Females considering IPAA should be counseled accordingly. Alternative surgical/medical approaches should be investigated.

F18

Return to theatre in Crohn's Disease in the biological era

E. Burns[1], A. Bottle[2], P. Aylin[2], A. Darzi[1] & O. Faiz[1]
[1]*Department of Surgery, Imperial College London, London, UK,* [2]*Dr Foster Unit, Imperial College London, London, UK*

Aim: Biological therapy may increase the risk of postoperative complications in patients with Crohn's disease. This study aimed to examine trends in reoperation rates in Crohn's disease in the biological era.
Method: Patients with Crohn's disease undergoing colorectal resection were identified from the Hospital Episode Statistics (HES) dataset between 2000 and 2008. Reoperation rates in 2000–2005(timeA) were compared with those in 2006–2007(timeB). Reoperation was defined as reintervention for an intra-abdominal or wound complication during the index admission or upon readmission within 28 days of initial resection.
Results: Between 2000 and 2008, 11 920 patients underwent colorectal resection. 7.6% (901/11920) required reoperation .The mean number of cases per year was 1483 in timeB and 1511 in timeA. The reoperation rate increased in the latter study period [timeA 7.2%(639/8898); timeB 8.7%(262/3022), $P = 0.007$]. In multiple regression analysis, patients in timeB were more likely to require reoperation [odds ratio 1.24 (CI 1.07–1.44), $P = 0.005$] than those in the earlier time period.
Conclusion: Further research is required to assess whether the increased reoperation rates observed in the latter study period reflect an increase in surgical complications in the biological era or are as a result of worsening disease severity.

F19

The number of lymph nodes assessed in right sided hemicolectomy depends on the quality of surgery

F. Brännström[1,2], P. Jestin[3], P. Matthiesen[1] & U. Gunnarsson[1]
[1]*Department of Surgical sciences, Uppsala University, Uppsala, Sweden,* [2]*Department of Surgical sciences, Karolinska Institutet, Stockholm, Sweden,* [3]*Karlstad Hospital, Karlstad, Sweden,* [4]*Department of Surgical sciences, Surgery, Örebro University Hospital, Örebro, Sweden*

Aim: The study aimed to investigate whether the surgeon's formal competence is determining for the number of lymph nodes harvested in a well-defined population undergoing routine colon cancer surgery.
Method: Data from the colon cancer register 1997–2006 of the Uppsala/Örebro Regional Oncology Centre were used to assess 1362 patients who had undergone right hemicolectomy. Two university, two regional and two local hospitals were included. A colorectal surgeon was defined as a specialist in general surgery with at least 2 years sub-specialisation or formal certification in colorectal surgery. Factors of putative influence on the lymph node yield were evaluated.
Results: Colorectal surgeons and university pathology departments were associated with a significantly higher proportion of patients who had 12 or more lymph nodes examined in stages I-III. This was also true in multivariate analysis for colorectal surgeons in stage III (OR 1.92; 95%CI 1.11–3.30) and for university pathology departments in stages I and II (OR 1.51; 95%CI 1.05–2.16) as well as in stage III (OR 2.09; 95%CI 1.32–3.33).
Conclusion: The number of lymph nodes assessed in routine colon cancer surgery depends on the competence of the surgeon and the type of pathology department.

F20

Apoptotic proteins as prognostic markers and indicators of radiochemosensitivity in stage II/III rectal cancers

C. Fucini, L. Messerini, C. Saieva, L. Orzalesi & N. Bartolini
University of Florence, Florence, Italy

Aim: The expression of proapoptotic(Bax) and antiapoptotic(mutated p53, Bcl-2, Bclxl)proteins in pretreatment biopsy samples of rectal cancer patients treated with/without preoperative chemoradiation was determined by immunohistochemistry, to investigate their role as prognostic markers and indicators of radiochemosensitivity.
Method: Biopsy samples of sixty seven patients operated on for stages II and III rectal cancer were enrolled in an active follow up program were examined after 8–10 years from operation. Thirty-three patients (Group I) had been treated with immediate surgery followed, in selected cases, by adjuvant postoperative chemoradiation. Thirty-four (Group II) had been submitted to preoperative chemoradiation. Immunohistochemical staining procedures were conducted using an automated immunostainer on sections of paraffin-embedded tissue.
Results: On multivariate regression analysis by stepwise selection, pN status (HR 3.82; 95%CI 1.67–8.73) and high level of Bclxl positivity(HR 4.75; 95%CI 2.10–10.72) emerged as independent prognostic factors for death from rectal cancer. Bax expression was associated with downstaging and higher survival in irradiated patients ($P = 0.0004$).
Conclusion: Pretreatment evaluation of apoptotic Bax and antiapoptotic Bclxl factors in biopsy samples of stages II/III rectal cancers may be helpful in selecting tumours responding to chemoradiation or patients with cancers which will have limited benefit from current treatments and should be directed toward a more aggressive systemic regimen.

F21

National uptake of laparoscopic colorectal resection in England following implementation of a National Training Programme

T. Edwards[1], D. Miskovic[2], C. Lai[1], G. Hanna[2] & M. Coleman[1]
[1]*Derriford Hospital, Plymouth, UK,* [2]*Imperial College, London, UK*

Aim: Laparoscopic colorectal surgery (LCS) is becoming ubiquitous. In 2006 the UK government instituted a National Training Programme (NTP) in LCS for consultant colorectal surgeons. The aims of this study were to assess (1) the uptake of LCS since the NTP inception, (2) the proficiency gain process of trainees and (3) clinical outcomes within the NTP.
Method: Data were analysed from the National Hospital Episode Statistics registry (HES). Proportions of LCS versus open surgery performed were compared. An online structured global assessment score form was completed for each LCS case by both trainer and trainee. Clinical outcomes were recorded prospectively.
Results: The NTP currently holds 147 registered trainees who performed 694 training cases. Between 2007 and 2009 the proportion of LCS nationally has increased from 12% to 23%. Educational assessment data indicates that competent performance is achieved after 20–25 cases. Clinical outcomes of patients within the NTP are excellent with a conversion rate of 4.4%, 12.3% morbidity and 0.5% in-hospital mortality.
Conclusion: The proportion of colorectal resections undertaken laparoscopically has increased since the inception of the NTP. It is ensuring that the skills deficit in existing surgeons in England is safely corrected in a way that is unprecedented.

F22

Local excision for T1–2N0 rectal cancer: safe selection with lymph node specific contrast-enhanced MRI

M. Maas[1], D. Lambregts[1], I. Ayodeji[1], S. Engelen[1], J. Leijtens[2], R. Beets-Tan[1] & G. Beets[1]
[1]*Maastricht University Medical Centre, Maastricht, Netherlands,* [2]*Laurentius Hospital Roermond, Roermond, Netherlands*

Aim: T1–2 rectal cancer has a 5–10% risk for nodal metastasis. TME after local excision(LE) of T1–2 tumours is performed to minimise the risk for local recurrence(LR). Accurate prediction of N stage would make a TME after LE unnecessary. The study aimed to evaluate whether contrast-enhanced (CE) MRI can safely select patients with N0 status for follow up after LE.
Method: Forty patients with an early tumour after LE(36 pT1, 4 pT2) underwent CE-MRI to evaluate N stage and residual tumour. The contrast agent used included Ultrasmall-Superparamagnetic Particles of Iron-Oxide (USPIO;$n = 26$) or gadofosveset($n = 14$). A pelvic MRI expert evaluated the scans. In the case of N0 status, patients were not operated but followed. Patients with N+ status underwent a TME.
Results: CE-MRI predicted N0 status in 37 of 40 patients, who underwent follow up. Three patients had suspicious nodes. Two underwent surgery, confirming N+ status in one, but refuting N+ status in the other. The third patient underwent chemoradiation which sterilised the nodes. LR occurred in four patients (three luminal & one nodal). Two year LR-free survival was 94% and 2 year disease-free survival was 94% at a median follow up of 31(0–65) months.
Conclusion: CE-MRI with lymph node-specific contrast agents is useful for selecting N0 patients eligible for follow up after LE for T1–2 tumours.

F23

Effect of muscle paralysis on function after conventional and stapled haemorrhoidectomy: results of a randomised controlled trial with 1 year of follow up

P. Hainsworth, E. Bowers, F. McArdle, E. Robinson, A. Horgan & C. McKnight
Freeman Hospital, Newcastle upon Tyne, UK

Aim: Sphincter dysfunction is common in patients with haemorrhoids. After haemorrhoidectomy, 50% to 90% patients experience minor or major incontinence. We aimed to determine whether muscle relaxation reduces post-operative sphincter dysfunction.
Method: Patients undergoing haemorrhoidectomy were randomised to paralysed (P) and non-paralysed (NP) anaesthesia for conventional (CH) and stapled haemorrhoidectomy (PPH) for prolapsing haemorrhoids. Patients were assessed over one year by questionnaire and anorectal physiology (ARP) and endoanal ultrasound were performed before surgery and at 3 months postoperatively.
Results: Thirty-seven patients [male 22; age 26–88 (median 54) years] were studied. They were distrubited as follows: NP/CH(10), NP/PPH(9), P/CH(9), P/PPH(9). Haemorrhoid grade was as follows: 2(9), 3(21) and 4(7). Baseline faecal incontinence to flatus and faeces was present in 67% and 31% patients. Continence and evacuation scores were similar for the P and the NP groups during the year following treatment. Maximal anal resting pressure (MRP) fell postoperatively (−15.9 ± 5.3 cm H20 (mean diff ± 2 SEM), paired *t*-test, $P < 0.0001$: PvNP, −19.3 ± 8.7 *vs*−13.2 ± 7.8 (trend). Max squeeze pressure, rectal max tolerated volume (MTV) & compliance didn't change significantly. Endoanal USS revealed no new sphincter injuries .Patients had less pain after PPH *vs* CH (no difference for P *vs* NP). There was no significant difference in the fall of MRP CH *vs* PPH (18.9 ± 7.1 *vs* −13.1 ± 9.1).
Conclusion: Sphincter hypotonia occurred post-operatively especially after CH. Conventional muscle relaxation during anaesthesia failed to protect the internal anal sphincter.

F24

The effect of anal application of topical anaesthetics on patient comfort during sigmoidoscopy: a randomized controlled trial

C. Cengiz[1], H. K. Pampal[1], B. O. Gunes[1], S. Boyacioglu[1] & M. A. Kuzu[2]
[1]*Mesa Hospital, Ankara, Turkey,* [2]*Ankara University, Ankara, Turkey*

Aim: There is little information on the effect of topical anaesthetics on patient comfort during sigmoidoscopy, We evaluated this treatment in a randomized study.
Method: One hundred and forty-six patients undergoing sigmoidoscopy were randomly allocated to three groups including vaseline (group I, $n = 49$), lidocaine gel (2%) (group II, $n = 51$) and a cream of lidocaine (2.5%) plus prilocaine (2.5%) (group III, $n = 46$)applied to patients immediately before sigmoidoscopy. Haemodynamic monitoring was carried out during the procedure. Pain was assessed using a visual analogue scale (VAS) and anxiety levels by the State-Trait Anxiety Inventory (STAI-I and STA-II).
Results: Median pre-procedural STAI-I scores were 45, 46, 40.5 and median post-procedural STAI-I scores were 35, 34, 33.5 in groups I, II and III. There was no statistical difference between the groups in terms of STAI-I and II scores. However, post-procedural STAI-I scores were significantly lower than pre-procedural values in each group ($P < 0.001$). There was no significant difference in the VAS scores between the groups. The evaluation within the groups revealed statistically higher VAS scores during the procedure when compared to pre and post-procedural scores ($P < 0.001$).
Conclusion: Anal application of topical anaesthetic does not have an impact on patient comfort during sigmoidoscopy.

F25

Topical diltiazem ointment versus botulinum toxin A for chronic anal fissure: a double-blind randomized clinical trial

M. Samim, B. Twigt, L. Stoker & A. Pronk
Diakonessen hospital, Utrecht, Netherlands

Aim: Topical diltiazem and botulinum toxin A (BTA) are promising treatments for anal fissure but they have never been compared by randomized trial.
Method: One hundred and thirty-four patients with a chronic anal fissure were randomized to receive either diltiazem ointment and a placebo injection (group A) or BTA injection and placebo ointment (group B). The primary endpoint was fissure healing at 3 months. Secondary endpoints included the pain score, side effects and cost.
Results: At 3 months healing occurred in 32 (43%) patients in group A and 26 (43%) in group B. Reduction of more than 50% in the mean pain score was found in 58 (78%) in group A and 49(82%) in group B. Perianal itching was the only side effec and was reported in 15% of patients in group A ($P = 0.012$). The price of group A was €56.80 and €44.39 in group B.
Conclusion: Diltiazem and BTA resulted in equal healing rates. No significant difference in pain reduction was observed. In considering cost BTA might be the preferred initial choice for chronic anal fissure.

F26

Efficacy of gasless transanal endosurgery for large rectal villous adenomas

G. Vorobyov, A. Filon, I. Peresada & A. Moscalev
State Research Center of Coloproctology, Moscow, Russian Federation

Aim: The efficacy of gasless transanal endosurgery and colonoscopic excision for large rectal villous adenoma was compared.
Method: Three hundred and seventy-eight patients with a large rectal villous adenoma (> 3 cm) underwent a minimal invasive procedure between 1999 and 2009. One hundred and forty-six (38.6%) (group 1) underwent gasless transanal endosurgery, 59 (15.6%) underwent conventional transanal excision (group 2) and 173 (45.8%) underwent colonoscopic excision (group 3).
Results: Postoperative morbidity was lower in group 1 [4 (2.7%)] compared with group 2 [7 (11.9%) $P < 0.0001$]. No difference in morbidity was detected when compared with group 3 [5 (2.8%) $P = 0.8$]. Recurrence occurred in 11 (7.6%) in group 1, in 12 (20.3%) in group 2 and in 31 (17.9%) in group 3. Recurrence was lower in group 1 than in group 2 ($P = 0.01$) and in group 3 ($P < 0.0001$).
Conclusion: Gasless transanal endosurgery is effective for large rectal villous adenomas in comparison with conventional transanal surgery and colonoscopic removal.

F27

Long-term results of limited excision for pilonidal sinus: less is more

C. Soll, D. Steinemann, D. Dindo, P.-A. Clavien & D. Hahnloser
Department of Visceral and Transplantation Surgery, University Hospital Zurich, Switzerland

Aim: Wide excision of pilonidal sinus with secondary healing is associated with a long time off work owing to high morbidity. Limited excision is an alternative approach. The long term results of this treatment is described in 202 patients between 2001 and 2009.
Method: Limited excision consisted of a selective removal of the sinus after outrlining the track with methylene blue.
Results: At a median follow up of 4.5 years the overall recurrence rate was 7%. The median time off work was 8 days and the median time to wound healing was 4 weeks. The percentage of limited excisions performed in local anaesthesia increased from 52% to 90%. The proportion of patients treated as an outpatient increased from 63% to 90%.
Conclusion: At a follow up of 4.5 years limited excision for pilonidal sinus in an outpatient setting under local anaesthesia resulted in a low recurrence rate and short time off work.

F28

Laparoscopic versus open sigmoid resection for diverticulitis: long-term results of a prospective randomized trial

P. Gervaz, P. Morel, I. Inan, B. Mugnier-Konrad & X. Delgadillo
University Hospital, Geneva, Switzerland

Aim: Laparoscopic sigmoid resection has proven short term benefits, but there are few data on long-term outcome, quality of life and function.
Method: One hundred and thirteen patients were randomized to laparoscopic (LAP group, $N = 59$) and open (OP group, $N = 54$) sigmoid resection for diverticulitis. They filled in the Gastrointestinal Quality of Life Index (GIQLI) questionnaire at a median follow up of 28 months after surgery.
Results: Incisional hernia was detected in 5 (9.2%) patients in the OP group versus 7 (11.8%) in the LAP group ($P = 0.76$). Overall satisfaction with the operation on a scale of 0 (very poor) to 10 (excellent) was 9 (range 2–10) in the OP versus 9 (range 2–10) in the LAP group ($P = 0.74$). The median GIQLI score was 115 (57–144) in the OP group and 107 (61–133) in the LAP group ($P = 0.23$). Overall satisfaction with the cosmetic aspect of the scar on a scale of 0 to 10 was 8 (range 1–10) in the OP versus 10 (range 2–10) in the LAP group ($P = 0.01$).
Conclusion: Both open and laparoscopic approaches for sigmoid resection achieve excellent results in terms of gastrointestinal function, and patient satisfaction. Significant benefits of laparoscopic surgery are restricted to the cosmetic result.

F29

Surgery for rectourethral fistula: influence of radiotherapy on the choice and outcomes of treatment

T. Poskus, E. Dozois, D. Beddy, D. Elliott & D. Husmann
Mayo Clinic, Rochester, MN, US

Aim: The study aimed to evaluate the surgical treatment of rectourethral fistula and to identify whether choice and results of treatment are influenced by radiotherapy.
Method: Patients, who underwent surgery for rectourethral fistula from January 1998 to January 2010 were identified. Their charts were reviewed and relevant demographics, history, surgery and follow up data were analyzed. An institutional review board approved the study. Statistical calculations were performed with JMP version 7 software, differences were considered significant between the groups when P value was < 0.05.
Results: Fifty-one patients underwent 57 repairs. 44 had one repair, five had two and one had three repairs. Thirty-four patients had abdominal surgery and 23 patients underwent a'perineal repair. Thirty-two patients had previously been treated with radiotherapy. Abdominal surgery and non-reconstructive surgery were chosen significantly more often in irradiated patients ($P < 0.001$) and bowel and urinary stomas were closed significantly more often in non-irradiated patients ($P < 0.001$).
Conclusion: Radiotherapy significantly influenced the choice and outcome of surgery for urethrorectal fistula.

F30

Is urinary drainage necessary after fast-track colonic resection with thoracic epidural analgesia? A prospective study.

P. Forget, C. Remue, D. Léonard, F. Lois, M. De Kock & A. Kartheuser
Cliniques universitaires Saint-Luc, Université catholique de Louvain, Brussels, Belgium

Aim: In fast-track surgery, removing the bladder catheter at the end of the surgical procedure is associated with a low risk of postoperative urinary retention (POUR).
Method: With the agreement of the ethical committee, 57 patients scheduled for colonic resection and enhanced recovery having thoracic epidural analgesia were included. The bladder catheter was removed at the end of the operation. The incidence of POUR, the incidence of urinary infection, the time to first ambulation, the maximum walking distance (D1) and the patient satisfaction were all determined.
Results: The incidence of POUR was 21% ($n = 12$). All the pre- and postoperative variables were comparable between the patients presenting POUR or not (age: 61 ± 14 *vs* 57 ± 13 years; sex F/M: 6/6 *vs* 21/24; urinary infection 0% *vs* 4%, hospital discharge after day 3: 0% *vs* 7%, satisfaction score: 8.7/10 ± 1.3 *vs* 8.9/10 ± 2) ($P > 0.05$).
Conclusion: A moderate incidence of POUR and a low incidence of urinary infections were observed. No correlation between POUR and a worse outcome was found. Colonic resection and thoracic epidural analgesia are not absolute indications for urethral catheterisation postopertively.

F31

Cardiopulmonary exercise testing in colorectal surgery – Guidelines for risk stratification

M. West[1], S. Jack[2], P. Calverley[2], J. Arthur[1] & C. Barben[1]
[1]*Department of Surgery, Aintree University Teaching Hospitals NHS Foundation Trust, Liverpool, UK,* [2]*Inflammation Research Unit, School of Clinical Sciences, Aintree University Teaching Hospitals, Liverpool, UK*

Aim: Colorectal surgery is associated with considerable morbidity. Patient-related factors are important in determining the postoperative outcome. The predictive power of individual patient factors and patient outcome 6 months after the introduction of a risk stratifying CPET algorithm was assessed.
Method: Sixty patients undergoing elective large bowel resection were recruited prospectively. They were stratified pre-operatively for risk using CPET. Patients were followed for up to 180 days, when morbidity, mortality, length of HDU/ITU stay and patient variables were analysed.
Results: Four patients were excluded due to high CPET predicted mortality. CPET scored 26 patients to be at high-risk (predicted mortality; 4.6–9.4%), 18 at intermediate risk (1.7–4.6%) and 12 at low-risk (0–1.7%). Actual morbidity at 180 days was 57.2% in the high risk group, 16.6% in the intermediate group and 8.3% in the low risk group. Actual 180 day mortality was 7.7% ($n = 2$). The 30 day mortality was 3.8% ($n = 1$). The HDU/ITU stay was 62%, 22% and 8% respectively (median 2 days). Patients with a low anaerobic threshold ($P \leq 0.001$), low VO_2 peak ($P \leq 0.001$) and low VO_2 peak/ BSA ($P = 0.003$), showed increased 180-day morbidity and longer high-dependency stay.
Conclusion: A CPET algorithm can reliably be used for risk stratification and accurate prediction of post-operative outcome.

F32

What is the rectovaginal septum?

J. García-Armengol, J. V. Roig, F. Martínez-Soriano, C. Sancho, I. Fabra, M. Cantos & C. Martínez
Consorcio Hospital General Universitario, Valencia, Spain

Aim: There has been a long-standing debate concerning the existence and composition of the rectovaginal septum. The aim of the study was to evaluate by pelvic cadaveric dissection the composition of the rectovaginal septum.
Method: The pelvis of eight female cadaveric was dissected. All the pelvises were exposed in the median sagittal plane along the middle axis of the anal canal.

Results: In all cases an areolar plane was seen between the anterior mesorectum covered by its visceral fascia and the posterior vaginal wall. The posterior vaginal wall was clearly composed of three layers including mucosal, muscular and fascial. Dissection in the superior areolar plane in the rectovaginal space was more difficult due to thickening of connective tissue between the distal rectum and the posterior vaginal wall.
Conclusion: The rectovaginal septum is the result of thickening of connective tissue between the distal rectum and the posterior vaginal wall.

F33
Anorectal toxicity of external beam radiotherapy in the treatment of prostate cancer

A. Bajwa[1], K. Thiruppathy[1], H. Payne[2] & A. Emmanuel[1]
[1]*GI Physiology Unit, University College Hospital, London, UK,* [2]*Clinical Oncology, University College Hospital, London, UK*

Aim: 3D conformal external beam radiotherapy (3DCRT) involves volume-based radiotherapy planning which allows for better tumour targeting. Efficacy of treatment is related to dose, the limiting factor of which is normal tissue toxicity. In this prospective study the anorectal toxicity of high dose 3DCRT was assessed.
Method: Seventen consecutive men with localised or locally advanced prostate cancer treated with 74 Gy of 3DCRT were prospectively studied. Pre and post treatment anorectal physiology studies included anal canal manometry, measurement of rectal distension threshold, mucosal electrosensitivity, laser doppler flowmetry, barostat studies and endoanal ultrasound.
Results: The median age and follow up of the subjects were 70 (50–79) years and 17 (14–40) weeks. Nine of 17 subjects developed new symptoms. Significant changes in anorectal physiology included an increase in mean (SD) rectal mucosal electrosensitivity threshold [from 22.9 (9.1) to 34.8 (9.1) mA ($P = 0.0027$)] and an increase in mean (SD) rectal elastance [from 0.0537(0.028) to 0.0781(0.039) mmHg/ml ($P = 0.0181$)].
Conclusion: Over 50% of patients develop some degree of anal incontinence after treatment with 3DCRT. Physiological data suggest these symptoms are secondary to rectal toxicity with the anal sphincter complex relatively undamaged.

F34
Sutureless compression anstomossis CAR 27 in colon and rectum: results in 46 patients

E. Gross
Asklepios Klinik Barmbek, Hamburg, Germany

Aim: Because of advantages of sutureless compression anastomisis AKA2 in over 400 patients, the new compression anastomotic CAR 27 technique was applied in consecutive patients. The essential part of the CAR 27 cartridge are leafs consisting of nitinol, which provide continous pressure due to its properties of shape memory and superelasticity. The endpoint of the trial was the leakage rate.
Method: The indications in 46 patients (mean age 61.4 years) included sigmoid diverticulitis(22), cancer of the sigmiod (12), rectosigmoid(2) descending colon (3) and the rectum(4). Nineteen procedures were carried out laparoscopically. There were 33 sigmoid resections, 10 low anterior resections and three left colectomies. A CT scan was performed in symptomatic patients only. The anastomosis was done using a double stapling technique.
Results: There was one case of anastomotic leakage LAR and one reoperation for bleeding. Four patients were reoperated on for reasons unrelated to the CAR 27 anstomosis. No patient died.
Conclusion: The CAR 27 device is safe. The low leakage rate in this study supports the advantages of sutureless and compression anstomosis, which had been demonstrated in clinical and animal studies.

F35
Outcome determinants after traumatic bowel injuries

G. Faria[1,2], A. B. Almeida[1,2], H. Moreira[1,2], E. Barbosa[1,2] & P. Correia-da-Silva[1]
[1]*Hospital Sao Joao, Porto, Portugal,* [2]*Faculdade de Medicina do Porto, Porto, Portugal*

Aim: Traumatic bowel injuries are rare but lead to important morbidity and mortality. There is discussion about the best management strategy.
Method: A retrospective analysis of the clinical records of 102 consecutive patients after surgery for traumatic bowel injury between January 2000 and December 2009.
Results: The mean age was 40 years. The average NISS score was 18.8. Most patients (79.4%) were male and 52% suffered blunt trauma. The mean time to surgery was 21 hours but in 62.7%, surgery was undertaken in the first 6 hours. Thirty one (30.4%) patients had post-operative complications, 12 of whom were intra-abdominal. In hospital mortality was 4.9%. Mortality was directly related with time to surgery ($P < 0.001$), blunt trauma ($P = 0.03$), ASA score ($P = 0.001$), multiple intestinal lesions ($P < 0.001$), extra-abdominal injuries ($P = 0.002$), the Mannheim Peritonitis Index ($P = 0.02$) and NISS score ($P = 0.001$). Besides these, morbidity was also related with tachycardia ($P = 0.04$), hypotension ($P = 0.001$) and haemoglobin < 10 g/dl ($P = 0.001$). In multivariate analysis, only NISS ($P = 0.002$), time-to-surgery ($P = 0.007$), ASA ($P = 0.015$) and injured organ ($P = 0.024$) were significantly related to morbidity.
Conclusion: The multivariate analysis of prognostic factors selects a group of determinants that represent the basic determinants of patient outcome: physiologic state (ASA), global injury (NISS), peritoneal soiling (colonic lesion) and time-to-surgery which is the only related to the quality-of-care.

F36
Forty-eight hours hospitalization after laparoscopic colorectal surgery. Feasability and predictive factors

M. Laporte, A. Canelas, M. Bun, E. Sadava, C. Peczan & N. Rotholtz
Hospital Aleman, Buenos Aires, Argentina

Aim: Fast track surgery or enhanced postoperative recovery programmes have been developed to accelerate recovery, reduce morbidity and shorten hospital stay. The aim of this study was to determine the feasibility and safety of short hospital stay in colorectal laparoscopic surgery and to identify predictive factors.
Method: A retrospective analysis was performed from a prospective database from all patients who underwent laparoscopic colorectal resection between June 2000 and May 2009. Patients were divided into two groups: G1: short hospital stay ($\leq$ 48 hours), G2: regular hospital stay ($>$ 48 hours). Univariate analysis was performed to identify predictive factors for short hospital stay.
Results: Seven hundred and twenty-eight consecutive colorectal laparoscopic procedures were included. One hundred and seventy-three (23.8%) patients belonged to G1. On multivariate analysis, ASA I–II ($P = 0.012$), operative time < 180 min ($P = 0.0001$), sigmoidectomy ($P = 0.0001$) and postoperative recovery without ICU ($P = 0.0059$) were statistically significantly related to G1. Patients with short stay hospitalization did not show higher rates of readmission or postoperative complications.
Conclusion: Short hospital stay is safe and feasible in laparoscopic colorectal surgery without increasing morbidity or the readmission rate. There exist predictive factors that identify patients suitable for this management.

