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The outcome of loop ileostomy closure: a prospective study

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Aims: The use of a loop ileostomy is an effective method to protect pelvic anastomoses. Its use has increased recently, although there is some debate as to the routine use of a stoma. A second operation is required to close the stoma, with potential complications. The aim of this study was to assess prospectively the morbidity of closure of loop ileostomy.

Methods: All patients scheduled for loop ileostomy closure over a 12-month period were included. The operative technique, complications and length of stay were recorded.

Results: A total of 50 consecutive patients (28 male, 22 female) with a median age (interquartile range, IQR) of 56 years (42–73) underwent ileostomy closure, at a median time (IQR) of 28 weeks (18–48) after formation. Twenty-four (48 per cent) were formed after low anterior resection for carcinoma, 20 (40 per cent) after ileal pouch anal anastomosis for ulcerative colitis and 6 (12 per cent) after other procedures. Thirty-eight (76 per cent) had a stapled closure and 12 (24 per cent) sutured. Twelve patients (24 per cent) developed complications; 6 (12 per cent) had intestinal obstruction of which one required a laparotomy, 4 (8 per cent) had wound infections of which one required re-operation, 1 (2 per cent) had an ileal anastomotic leak and subsequently died and 1 (2 per cent) died from a myocardial infarction. The median length (IQR) of hospital stay was 8 days (7–10).

Conclusions: We have demonstrated that a quarter of patients develop complications after loop ileostomy closure. The majority of these are minor. Methods to reduce the number of complications, such as optimum time to closure and distal limb irrigation techniques, need to be studied.

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Topical perioperative application of 0.2 per cent GTN paste protects the anal sphincters from colorectal stapled anastomotic related injury

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Aim: Transanal stapled colorectal anastomosis is associated with internal anal sphincter (IAS) injury and postoperative incontinence. A randomized trial was conducted to investigate whether perioperative perineal application of 0.2 per cent GTN paste, which causes IAS relaxation, could prevent such injury.

Methods: Fifty patients undergoing cancer resection were randomized between January 1999 and October 2000 to receive perioperative perianal 0.2 per cent GTN paste (23 patients) or placebo gel (27 patients) 20 min prior to their transanal stapled anastomosis. Pre- and postoperative (12 months) continence scores, pre- and postoperative transanal ultrasound, ease of insertion of the stapler and perioperative patient blood pressure were recorded.

Results: All patients were continent without ultrasound evidence of anal sphincter defects preoperatively. The median height of the anastomosis from the anal verge was 10 cm (range, 7–11). There were no adverse episodes of intraoperative hypotension. Six patients in the placebo group had evidence of IAS injury. It was more difficult to insert the stapler in the placebo group (difficult: PLACEBO 8 GTN 1; some resistance: PLACEBO 16, GTN 8; no resistance: PLACEBO 3, GTN 14). Postoperative continence scores were better in the GTN group (PLACEBO 5.1 ± 1.1; GTN 3.3 ± 0.7; $P=0.01$, Fishers Exact Test).

Conclusion: Perioperative perineal 0.2 per cent GTN paste application protects anal sphincter integrity and postoperative function.

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The resting pressure gradient (RPG) is an early indicator of faecal incontinence

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Aims: Incontinence scores are used to quantify faecal incontinence and allow comparison between patients. Anorectal manometry is routinely used for the assessment of incontinence. Patients with mild incontinence often have normal results. We have reported the measurement of RPG in the assessment of incontinence. This study examined the role of this technique in patients with varying degrees of incontinence.

Methods: Patients referred for anorectal investigations were recruited. Patients completed a Wexner incontinence score (WIS). Patients were grouped by incontinence score: continent (WIS 0, $n=37$), mildly incontinent (WIS 1–7, $n=29$), moderately incontinent (WIS 8–13, $n=34$) and severely incontinent (WIS 14–20, $n=16$). Patients underwent standard anorectal manometry. The following manometric measurements were recorded: maximum mean resting pressure (MMRP), maximum mean squeeze pressure (MMSP), vector volume (VV) and resting pressure gradient (RPG). The Mann–Whitney U -test was used to analyse results.

Results: A total of 116 patients were recruited into the study [92 females, 24 males: median age 51 (interquartile range 37–67) years]. Each measurement was compared between the continent group and: (a) all incontinent patients (b) moderately and severely incontinent patients and (c) mildly incontinent patients.

	RPG	MMRP	MMSP	VV
Continent vs. group (a)	0.005*	0.001*	0.021*	0.004*
Continent vs. group (b)	0.008*	<0.001*	0.001*	<0.001*
Continent vs. group (c)	0.029*	0.217	0.877	0.356

Values are P -values *indicates significance

Discussion: This study shows that RPG is an early indicator of faecal incontinence. Standard measurements of MMRP, VV and MMSP are often normal in patients with mild incontinence and only become significantly lower in patients with at least moderate symptoms. We recommend the routine use of RPG in the manometric assessment of faecal incontinence.

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The role of transanal endoscopic microsurgery in the management of malignant rectal tumours

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Aims: The role of local resection for benign rectal disease is well established, however, controversy still exists regarding its use in the treatment of malignant tumours. The aim of this study is to evaluate the role of Transanal Endoscopic Microsurgery (TEM) in the management of rectal tumours, in particular cancers.

Methods: A total of 56 successive patients, mean age of 68 (range 37–91) years, underwent TEM by a single surgeon for rectal tumours over a 5-year period. Data were collected prospectively and reviewed with regards to diagnosis, TNM stage, length of operation and hospital stay, resection margins and recurrence rates.

Results: Mean follow up was 21 months (range 3–60). 37 patients had benign rectal tumours and 19 had cancers of which 7 were T1, 9 T2, and 3 were T3. Mean length of surgery was 83 min (range 43–180) and mean hospital stay was

3.6 days (range 1–10). Margins were clear in 54 patients (96 per cent). Involved margins were observed in one patient with benign disease and one patient with rectal carcinoma, who had a palliative resection and died of metastatic disease. Hospital mortality was zero and only minor morbidity was observed in 23 per cent, which included bleeding, transient faecal incontinence and urinary retention. Recurrence rates for T1 and T2 tumours were 0 and 43 per cent, respectively.

Conclusions: TEM for both benign and malignant disease is safe with zero mortality and low morbidity. However, its use in the surgical management of rectal cancer should be limited to those with early disease (T1) or for palliation.

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Magnetic resonance imaging remains an imprecise tool for staging rectal cancer

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Aim: Long and short course preoperative radiotherapy are increasingly employed for the treatment of patients with rectal cancer and magnetic resonance imaging (MRI) has been advocated as the gold standard for staging these patients as part of their treatment planning process. We have prospectively evaluated the value of MRI in staging rectal cancer patients.

Methods: A total of 45 consecutive patients undergoing surgery for rectal cancer were assessed. Each underwent preoperative spiral CT of their lungs, liver and pelvis combined with pelvic MRI (1.0T Whole Body Siemens Harmony System with a phased array coil). Tumours were staged preoperatively by MRI/CT using the Dukes' and TNM systems and these results were compared with formal histopathology. Circumferential resection margins were additionally predicted radiologically and compared with actual histology.

Results: Histopathology assessment revealed there to be 10 patients with a Dukes' A tumour, 19 Dukes' B and 16 with stage Dukes' C. MRI understaged four patients, overstaged 14 and correctly staged 27 (sensitivity 60 per cent). Radiological assessment of circumferential resection margins was hampered for patients with anterior tumours and lateral tumours with an anterior component because of blurring of the mesorectal margin.

Conclusions: MRI remains an as yet insensitive method of staging rectal cancer. The images obtained in many patients prevents useful analysis of predicting circumferential resection margins.

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Prognostic significance of elevated plasma big endothelin-1 levels in patients with colorectal cancer

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Aims: Clinical, laboratory and pathological variables in patients with colorectal cancer may identify high-risk groups to whom beneficial adjuvant therapy could be given. This prospective study was performed to determine whether preoperative plasma big ET-1 levels might be a useful as a prognostic indicator in patients with colorectal carcinoma.

Methods: Sixty-five consecutive patients with colorectal cancer confirmed by biopsy were entered prospectively into this study over a 12-month period. Plasma samples from a peripheral vein were obtained prior to surgery and were analysed by using a single step sandwich enzyme immunoassay (Biomedica, Austria). Univariate analysis of survival using age (< or >70 years), sex, Dukes' stage (A & B versus C), tumour size (< or >50 mm), vascular invasion and plasma big ET-1 levels were performed and significant factors were then analysed in a multivariate Cox regression model.

Results: Three variables, age, Dukes' tumour stage and plasma big ET-1 levels were found to have a prognostic significance ($P < 0.05$). Factors associated with

a poorer prognosis were age more than 70 years ($P = 0.02$), Dukes' C tumours ($P = 0.04$) and plasma big ET-1 levels more than 4.2 pg/mL ($P = 0.02$). The Cox regression model identified the same three variables as having independent prognostic value for survival.

Conclusion: Preoperative plasma big ET-1 levels may be useful in predicting overall survival in patients with colorectal cancer. In particular, plasma big ET-1 levels may be useful in the selection of high-risk lymph node negative patients with colorectal cancer for adjuvant therapy.

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The impact of colorectal subspecialization on outcomes for rectal cancer: a 5-year review

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Aim: Subspecialization is intended to improve surgical and oncology related outcomes in cancer patients. This study analysed the impact of colorectal subspecialization on rectal cancer outcomes in a unit with four existing experienced general surgeons.

Methods: A 5-year review of surgical and oncological outcomes in 207 consecutive patients was conducted. The results were reviewed externally.

Results: A total of 127 procedures were performed by two colorectal surgeons (CRS) and 80 by four general surgeons (GS). Permanent stoma rates (CRS 21 per cent, GS 29 per cent; $P = 0.5$, 95 per cent CI 0.4–1.47), postoperative morbidity (CRS 43 per cent, GS 35 per cent; $P = 0.47$; 95 per cent CI 0.7–2.2) and 30 day mortality (CRS 5 per cent, GS 6 per cent; $P = 0.75$, 95 per cent CI 0.22–2.5) were comparable between CRS and GS. Local recurrence rates (CRS 13 per cent, GS 15 per cent; $P = 0.68$, 95 per cent CI 0.37–1.68) and the risk of developing disseminated disease (Odds Ratio 0.72; $P = 0.38$, CI 0.37–1.22) were also similar between the two surgeon groups.

Conclusions: Colorectal subspecialization has not resulted in improved crude measures of surgical and oncological outcomes for patients with rectal cancer. The decision of individual units to subspecialize should consider local results through careful audit in relation to national guidelines.

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Resection or radiofrequency ablation for solitary colorectal liver metastases?

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Aim: Liver resection is the accepted treatment of choice for patients with solitary colorectal liver metastases. In recent years, however, the role of radiofrequency ablation has occupied an increasingly prevalent role. In the absence of randomized controlled trials this study aims to compare outcome in patients with solitary colorectal liver metastases treated by surgery and radiofrequency ablation.

Methods: Twenty-five patients with solitary colorectal liver metastases were treated by radiofrequency destruction (mean age 57, 34–80). The indications were extrahepatic disease in 7, vessel contiguity in 9 and comorbidity in 9. Outcome measures were compared with 20 patients treated by appropriate liver resection for solitary metastases. Most patients in both groups received systemic chemotherapy in addition.

Results: The median survival following liver resection was 40.6 months (range 0–97 months) with a 3-year survival of 55 per cent. There was one postoperative death and morbidity was minimal. Median survival following radiofrequency was 37 months (range 9–67 months) and 3-year survival of 52 per cent.

Conclusions: Resection and radiofrequency ablation of solitary metastases result in apparently comparable survival. The latter is less invasive and requires either an overnight stay or day case facilities only. A prospective randomized controlled trial comparing these two modalities is indicated.

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One hundred consecutive cases, predominantly of pseudomyxoma peritonei, referred to a peritoneal surface malignancy unit: operability and early outcomes

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Aims: Peritoneal malignancy is common and almost inevitably fatal in many intra-abdominal cancers. A small proportion of patients with peritoneal surface disease, particularly with pseudomyxoma peritonei (incidence one per million per year and almost always from an appendix primary) may be amenable to complete cytoreductive peritonectomy with good palliation, long-term disease free survival and possibility of cure.

Methods: One hundred consecutive referrals (1994–2000) to a peritoneal surface malignancy unit were received between January 1994 and August 2001. Assessment of suitability for complete tumour removal and intraperitoneal chemotherapy was made by CT and clinical examination. Sixty-two of 100 underwent laparotomy (54 pseudomyxoma peritonei, 4 adenocarcinoma, 3 mesothelioma and 1 leiomyoma).

Results: Complete tumour removal was achieved in 38/54 pseudomyxoma peritonei (17 males), 2/3 mesothelioma, 2/4 adenocarcinoma and 1/1 leiomyoma. Major palliative debulking was achieved in 13 pseudomyxoma and 1 mesothelioma. Three patients with pseudomyxoma and 2 with adenocarcinoma were inoperable. Median operating time for the 43 completed cases was 10.5 (3–18) hours, with median ITU and hospital stay of 7 and 24 days, respectively. There were 3/43 (7 per cent) postoperative deaths (2 multi-organ failure and 1 pulmonary embolus).

Conclusions: Just over half the patients referred (62 per cent) underwent surgery and 69 per cent of these had complete cytoreduction. Surgery is radical, time consuming and expensive, and requires careful patient selection to optimise outcomes.

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Laparoscopic surgery for recurrent Crohn's disease

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Aims: The role of laparoscopic surgery for Crohn's disease remains to be defined, although increasingly difficult cases are being treated using minimally invasive techniques. The aim of this study was to clarify the feasibility of laparoscopic surgery for recurrent Crohn's disease.

Methods: Between 1994 and 2001, 57 laparoscopic operations were attempted in 48 patients (39 males and 9 females; mean age: 30 years) with ileal or ileocolonic Crohn's disease. Of these, 15 operations were performed due to recurrence at the anastomotic site (recurrent group). The remaining 42 operations were performed as a primary case (control group). The median follow-up was 45 months (range: 1–87 months).

Results: The median time to reoperation was 46 months. The incidence of patients with enteric fistulas did not differ between the two groups (recurrent group: 6/15, 40 per cent vs. control group: 23/42, 55 per cent). Conversion to open procedure occurred in two attempts in the recurrent group (2/15, 13 per cent) and three in the control group (3/42, 7 per cent) without any significant differences. Operative blood loss and time did not differ between the two groups (recurrent group: 80 mL and 210 min, control group: 60 mL and 180 min). There were no differences between the two groups in terms of the postoperative complications (recurrent group: 3/15, 20 per cent vs. control group: 6/42, 14 per cent) and hospital stay (recurrent group: 8 vs. control group: 8 days). There were no deaths in either group.

Conclusions: Laparoscopic surgery for recurrent Crohn's disease is feasible in selected patients without increasing operative time, conversion rate and post-operative complications.