

# Overview on Colorectal papers

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## Crohn's disease

### 1. Clinical aspects and research

#### Infliximab

The impact of infliximab on Crohn's disease (CD) treatment remains a major interest subject in current literature. [Rubenstein and cols](#) suggested that despite inducing remission and healing fistulas, infliximab is more costly than traditional therapies and performed a study to assess its impact upon resources used in CD. The incidence of procedures undertaken for in and outpatients related to CD for at least 1 full year both before and after initial infliximab infusion were studied. A decrease was seen in the annual incidence of all surgeries, endoscopies, ER visits and radiologic examinations. They concluded that patients with CD decreased their use of some services, with a decreased number of hospitalizations and a decrease in the use of surgical services seen primarily in the patients infused for fistulas. This decrease in use of healthcare resources raises the potential of overall cost savings in CD patients receiving this drug.

[Ochsenkuhn and cols](#) evaluated the combination of infliximab with 6-mercaptopurine/azathioprine as therapy for fistulas in 16 patients with Crohn's disease and observed in 12 (75%) a complete closure of the fistulas that persisted for >6 months. They concluded that concomitant and long term 6-MP/azathioprine therapy could prolong the effect of an initial infliximab therapy.

In order to overcome the problem of reactions to infliximab, [Kane and cols](#) reported a four patient experience in which thalidomide appears to be a safe and effective alternative for short-term healing in patients who develop infliximab-induced delayed hypersensitivity reaction and may be an alternative strategy for those at risk.

Similar results were found by [Sabate and cols](#), who started thalidomide on fifteen patients with severe, refractory disease after they had responded to infliximab, with remission rates of 92%, 83% and 83% at 3, 6 and 12 months, respectively, after the last infliximab infusion.

[Ardizzone and cols](#) reported their clinical experience using infliximab in 63 patients for refractory/inflammatory and/or fistulizing Crohn's disease and found 80.6% of clinical response and 71% of clinical remission in ten weeks.

Another observational study was conducted by [Van Balkom and cols](#) in 65 patients with active or fistulizing disease. In the active disease group, at week 4, the mean total and dimensional inflammatory bowel disease questionnaire scores

improved compared to baseline ( $P < 0.001$ ), while in the fistulizing group, at week 6, all scores changed from baseline ( $P < 0.05$ ).

The effect of infliximab on quality of life in patients with active Crohn's disease (CD) inadequately responsive to concomitant therapies was assessed by [Lichtenstein and cols](#) using the Inflammatory Bowel Disease Questionnaire and found that patients treated with infliximab had a significantly larger improvement in overall IBDQ score than those treated with placebo at 4 weeks.

Despite this effective response to treatment of refractory Crohn's disease, episodic retreatment with infliximab can be associated with severe acute and delayed systemic reactions. [Kugathasan and cols](#) analyzed episodic infliximab retreatment over 30 months in 86 adult and pediatric patients receiving 304 infusions to determine factors associated with the development of severe systemic reaction. Episodic infliximab retreatment--specifically, a distant second infusion--was associated with high rates of severe systemic reaction in adults, but not children. They recommended multiple early infusions of infliximab if retreatment is anticipated in adult patients to avoid the development of delayed severe systemic reactions.

[Suenaert and cols](#) studied the intestinal permeability in refractory Crohn's disease before and after treatment with a single infusion of infliximab in twenty-three patients. They found that inhibition of the proinflammatory cytokine tumor necrosis factor dramatically reduces gut inflammation and largely restores the gut barrier in Crohn's disease, confirming the central role of TNF in gut barrier modulation in inflammatory conditions in vivo.

Nearly 30% of patients do not respond to treatment with infliximab and so far no parameters predictive of response to anti-TNF have been identified. [Esters and cols](#) undertook a cohort study with 279 CD patients to determine whether serological markers ASCA (anti-Saccharomyces cerevisiae antibodies) or pANCA (perinuclear antineutrophil cytoplasmic antibodies) could identify Crohn's patients likely to benefit from anti-TNF therapy. No significant relationship was found between these two markers and response to therapy.

### **Effects of steroids**

Osteoporosis is frequently found in Crohn's disease, but its etiology remains unclear. [de Jong and cols](#) studied 91 patients with CD who were admitted for osteoporosis by a questionnaire and from patients' medical records. Bone mineral density (BMD) was measured at the femoral neck and lumbar spine by dual energy x-ray absorptiometry. In the linear regression analysis, the only significant independent predictors for osteoporosis of the lumbar spine and femoral neck were body mass index and history of bowel resections. Despite the high dose of steroids used in this study, no detrimental effect could be demonstrated as independent predictor for osteoporosis.

This high incidence of osteoporosis in CD patients was also subject of a study performed by [Loftus and cols](#), in order to review their risk of actual fractures. Patients diagnosed with Crohn's disease were reviewed for evidence of subsequent fractures compared with a control group of control residents at the same county matched by

age and sex. In this population-based inception cohort of patients with Crohn's disease, the risk of fracture was not elevated relative to age- and sex-matched controls.

A systematic review about the effectiveness of budesonide therapy for Crohn's disease was undertaken by [Kane and cols](#) , including randomized controlled trials comparing budesonide to corticosteroids, 5-ASA products or placebo. They found that budesonide is significantly more effective than placebo or 5-ASA for inducing remission of active Crohn's disease. Although budesonide is 13% less effective for the induction of remission in active Crohn's disease than conventional corticosteroids, it is less likely to cause corticosteroid-related adverse effects. Budesonide is ineffective in maintaining remission.

[Tremaine and cols](#) studied the effect of budesonide controlled ileal release (CIR) capsules in a multicenter, double blind, randomized trial including 200 patients with mild to moderate Crohn's disease involving the distal ileum and/or ascending colon. Results assessed by the Crohn's Disease Activity Index [CDAI]. Although the remission rate did not significantly differ from the placebo response, there was a significant change in the mean CDAI from baseline in the combined treatment groups relative to the placebo.

[Steinhart and cols](#) conducted a double-blind multicenter study of patients with active Crohn's disease of the ileum, right colon, or both, to assess the role of combined budesonide and antibiotic therapy. All patients received oral budesonide but were randomized to receive oral ciprofloxacin and metronidazole or placebo. Significant effectiveness of this antibiotic combination was only demonstrated when there was involvement of the colon.

### **Effect of enteral diet**

Dietary fat has been suggested to determine the therapeutic effect of enteral diets in Crohn's disease. [Gassull and cols](#) published a study with sixty two patients with active Crohn's disease who were randomised to receive protein based diets with different fat compositions. Overall remission rates were significantly different among the groups and suggested that the type of dietary fat may be of importance for the primary therapeutic effect of enteral nutrition in active Crohn's disease.

## ***2. Surgical treatment***

### **Surgical results**

[Lauschke and cols](#) published their long-term results in a series of 88 operations for Crohn's disease undertaken in 81 patients. In a postoperative observation period of 3.5 years 3 of 57 patients (5 %) had to undergo surgery again, due to recurrence. Altogether 25 of 81 (31 %) patients revealed a recurrence. They concluded that The surgical therapy of Crohn's disease can be performed safely and provides long-term recurrence and complaint free periods.

### **Laparoscopic and minilaparotomy surgery**

[Watanabe and cols](#) reported their experience with laparoscopic approach in 37 patients with stricturing ileal or ileocolonic Crohn's disease. Twenty of these patients (54%) were effectively operated by laparoscopy in a total of 25 operations. Four complications were observed in 25 operations and there were no intraoperative or postoperative deaths. They conclude that laparoscopic treatment for Crohn's disease complicated by fistulas is feasible without high complication or conversion rates. Recurrent disease requiring reoperation can also be successfully treated using laparoscopic methods.

[Nakagoe and cols](#) propose the use of a minilaparotomy through a skin incision of less than 7 cm to approach to terminal ileal Crohn's disease and reported an initial series of nine patients with no complications. According to this experience they suggest that the minilaparotomy approach to terminal ileal Crohn's disease without an enteric fistula is feasible, safe, and less invasive than the conventional approach.

### **Perianal Crohn's disease**

[Mueller and cols](#) explored the hypothesis that Crohn's disease patients without rectal inflammation have abnormal anorectal function due to histological alterations in the enteric nervous system. Comparative manometric study to controls showed significant differences regarding rectoanal inhibitory reflex and rectal sensation. A standardized interview revealed additional disorders of anorectal function in patients with CD. Anorectal function appears to be altered in many patients with CD even in the absence of macroscopic anorectal disease and is. This may be due to a disorder of the ENS.

[Pikarsky and cols](#) propose an alternative scoring system to evaluate and predict outcome of surgical intervention in perianal Crohn's disease. This scoring system was validated against the surgical outcome, which was classified as poor, satisfactory, or good. It correlated well with the short-term outcome of surgical intervention in patients with perianal Crohn disease and it is suggested it may be possible to alter therapy based on preoperative prediction of the expected postoperative outcome.

Tumor necrosis factor antagonist therapy in the form of infliximab has been shown to promote significant healing in fistulizing Crohn's disease and therefore is often considered as a possible alternative to surgery. [Poritz and cols](#) performed a retrospective chart review of adult patients to evaluate the role of infliximab in supplanting surgery for fistulizing Crohn's disease. In a series of 26 patients who received infliximab fourteen (54 percent) patients still required surgery for their fistulizing Crohn's disease after infliximab therapy. They conclude that although it was associated with a 61 percent complete or partial response rate, infliximab therapy did not supplant the need for surgical intervention in patients with fistulizing Crohn's disease.

## **Strictureplasty**

As an alternative to resection, strictureplasty may allow for preservation of intestinal length and avoidance of short-bowel syndrome in patients with diffuse Crohn's jejunoileitis. However, the long-term durability of the procedure and its safety have not been confirmed. [Dietz and cols](#) undertook a study to report the Cleveland Clinic experience with strictureplasty for diffuse Crohn's jejunoileitis. A total number of 701 strictureplasties were performed in 123 patients. The overall morbidity rate was 20 percent and septic complications occurring in 6 percent. The surgical recurrence rate was 29 percent with a median follow-up period of 6.7 years. The recurrence rate in diffuse jejunoileitis patients did not differ from that seen in patients with limited small-bowel Crohn's disease. They conclude that Strictureplasty is a safe and durable alternative to resection in diffuse Crohn's jejunoileitis.

Similar conclusions were reported by [Laurent and cols](#), who performed a retrospective review of 68 strictureplasties performed in 18 patients in a median follow-up of 63 months.

## ***Polyps and polyposis***

### **Polyps and selenium**

Selenium is a fundamental nutrient to human health that might have anticarcinogenic effects. Previous studies have assessed the possible relationship of selenium status to colorectal adenomas with controversial results. [Fernandez-Banares and cols](#) measured serum selenium levels in patients with large size sporadic adenomatous polyps, colorectal adenocarcinomas, and healthy individuals. They found that high selenium status may decrease the risk of large size adenomas in a low selenium region, and that this preventive effect seems to be exclusive to subjects  $\leq 60$  yr.

### **CT colography x colonoscopy**

[Macari M and cols](#) undertook CT colonography in 105 patients immediately before colonoscopy and found that sensitivities for detection of polyps smaller than 5 mm, 6-9 mm, and larger than 10 mm in diameter were 12%, 70%, and 93%, respectively. They concluded that low-dose multi-detector row CT colonography has excellent sensitivity and specificity for detection of colorectal neoplasms 10 mm and larger.

[Gluecker and cols](#) performed a similar prospective blinded study to compare computed tomography (CT) colonography with conventional colonoscopy in fifty patients and detected 82% of lesions  $>10$  mm, 33% lesions of 6-9 mm and only 3% polyps  $<5$  mm. They also concluded that MDCT colonography provides good data quality, sensitivity and specificity for the detection of colonic lesions of 10 mm or more.

[Laghi and cols](#) evaluate the performance of computed tomographic colonography (CTC) in 66 symptomatic patients and were able to identify 92.8% of polyps greater than 10.0 mm, 84.6% of polyps between 6.0 and 9.0 mm 24% of polyps smaller than 5.0 mm.

### **Magnetic resonance colography (MRC) without colon cleansing**

As residual colonic stool cannot be differentiated from polyps, MRC requires a clean colon. However, the rigors associated with colonic cleansing considerably reduce patient acceptance. To overcome this problem, [Lauenstein and cols](#) used barium as an oral fecal tagging agent to render stool dark, and barium for the enema was used to distend the colon during MRC. The colonic wall and polyps arising from it were made visible after intravenous administration of Gd-based extracellular contrast. This method provided sufficient contrast between the darkened colonic lumen and the brightly enhanced colonic wall to permit virtual endoscopic rendering. Preliminary results showed an exact correlation with findings of conventional endoscopy and surgery. They concluded that fecal tagging obviates bowel cleansing and therefore should enhance patient acceptance for MR colonoscopy and that barium as the tagging agent is promising because it is inexpensive, commercially available, and characterized by an excellent safety profile.

### **Familial adenomatous polyposis**

[Church and cols](#) conducted this study to investigate the risk of cancer in teenagers from FAP families if surgery is deferred. A questionnaire asked for the number of teenage or younger patients in registries affiliated with the Leeds Castle Polyposis Group diagnosed with invasive colorectal carcinoma. Replies received from 26 of 52 registries identified 14 patients as having invasive colorectal cancer younger than 20 years, the youngest of whom was 9 and the oldest 19. They concluded that cancer occurs rarely in familial adenomatous polyposis patients younger than 20 years, and only 1 case was reported younger than 15 years. Thus, surgery for colorectal polyposis may be deferred safely until at least the age of 15, unless suspicious lesions are found.

### **Effect of COX-2 inhibitors in FAP**

[Phillips and cols](#) published a randomised, double blind, placebo controlled study of celecoxib (100 mg twice daily or 400 mg twice daily) versus placebo, given orally for six months to patients with FAP. They found that patients with clinically significant disease at baseline (greater than 5% covered by polyps) showed a 31% reduction in involved areas with celecoxib 400 mg twice daily compared with 8% on placebo (p=0.04) and conclude that COX-2 inhibition may help this otherwise untreatable condition.

### **Role of endoscopic screening**

[Syrigos and cols](#) performed a study to evaluate the use of total colonoscopy as the optimal screening test in 249 asymptomatic individuals who had one or two first-degree relatives (FDRs) with CRC. Eighty-six colonic lesions were found in 51 individuals (20.5%). Twenty-seven patients had neoplastic polyps and 29 had metaplastic polyps. Although no invasive cancer was detected, in 14 individuals the lesions had a high malignancy potential because of their size and histopathology. They concluded that colonoscopy is the optimal screening procedure for the examination of asymptomatic individuals with a family history of CRC.

[Imperiale and cols](#) assessed the prevalence of colorectal lesions in 906 consecutive persons 40 to 49 years of age who voluntarily participated in an employer-based screening-colonoscopy program. Among these, 78.9% had no detected lesions, 10%

had hyperplastic polyps, 8.7% had tubular adenomas, and 3.5% had advanced neoplasms, none of which were cancerous. They concluded that colonoscopic detection of colorectal cancer is uncommon in asymptomatic persons 40 to 49 years of age and that this result is consistent with current recommendations about the age at which to begin screening in persons at average risk.

[Zheng and cols](#) reported an interesting study from China, where physicians screened the population of Haining County using 15 cm rigid endoscopy in over 240000 participants. Precursor lesions were found in 4076 of them, either adenomas or non-adenomatous polyps, which were then removed surgically. All individuals with precursor lesions were followed up and reexamined by endoscopy every two to five years. After the initial screening, 953 metachronous adenomas and 417 non-adenomatous polyps were detected and removed from the members of this cohort. According to the population-based cancer registry, observed cumulative 20-year rectal cancer incidence was 31% lower than the expected in the screened group and the mortality due to rectal cancer was reduced in 18%. They concluded that mass screening for rectal cancer and precursor lesions with protoco-scopy in the general population and periodical following-up with routine endoscopy for high-risk patients may decrease both the incidence and mortality of rectal cancer.

## ***Fecal incontinence***

### **Obstetric and anal sphincter morphology**

[Williams and cols](#) reported a prospective observational study with 22 women who were examined before and after delivery using three-dimensional anal endosonography, manometry and a questionnaire assessing functional symptoms. Despite no endosonographic evidence of perineal trauma after delivery, a significant shortening of the length of the anterior external anal sphincter in the sagittal plane was found. They concluded that anal sphincter morphology changes after an otherwise atraumatic vaginal delivery but this change does not correlate with any functional symptoms.

[Nazir and cols](#) undertook a study in 86 women to determine whether there exists a correlation between anal incontinence, occult sphincter injuries, anal manometry values, and delivery variables in primiparous women after first time vaginal delivery. Transanal ultrasonography (TAUS) and vector volume manometry (VVM) was performed and bowel symptoms were recorded at 25 weeks of pregnancy and 5 months after labor. Twenty-five percent experienced flatus incontinence postpartum and after 12 months, only one-third of the women were still incontinent. Anal sphincter injuries as seen by TAUS were not associated with either VVM values or any delivery variable. Baby head circumference was the only delivery variable significantly associated with flatus incontinence.

[Willis and cols](#) performed a study to assess disturbance of anal continence after vaginal delivery. They examined 42 unselected women by anal vector manometry, endoanal ultrasonography, pudendal nerve terminal motor latency (PNTML) and rectal sensibility in the 32th week of pregnancy and 6 weeks after delivery. Overall continence after vaginal delivery did not differ significantly from that before delivery,

but there was a significant reduction in postpartum anal squeeze and resting pressures in all patients. Obstetric tears of grade III or IV occurred in 9% of the patients. Endosonography revealed occult lesions of the internal and external anal sphincter in an additional 19% of women who clinically seemed to have an intact sphincter. Manometric results and continence in these women did not differ significantly from those with intact sphincter and remained unchanged after 12 weeks. They concluded that only endoanal ultrasonography is suitable for detection of occult sphincter lesions after vaginal delivery.

### **Role of internal anal sphincter inhibitory reflex in fecal incontinence**

The transient relaxation of the internal anal sphincter in response to rectal distention is believed to play an important role in the continence mechanism. [Kaur and cols](#) assessed the parameters of the rectoanal inhibitory reflex in incontinent and constipated patients and healthy control subjects, in an attempt to analyze differences in internal anal sphincter function in these groups. There was a significant correlation between the volume required to elicit the rectoanal inhibitory reflex and that at which sensation was first felt only in the incontinent group. Significantly greater sphincter relaxation was seen at each volume ( $P = 0.001$ ) in the incontinent as compared with the constipated patients. With progressive rectoanal inhibitory reflex, consistently progressive increases in internal anal sphincter relaxation were found only in the incontinent group. This consistent relationship was not seen in the constipated patients or in healthy control subjects. These results suggest that altered responses of the internal anal sphincter may play an important role in fecal incontinence pathophysiology.

### **Results of different methods to treat fecal incontinence:**

#### **Sacral nerve stimulation**

[Rasmussen and Christiansen](#) present their experience with fourteen patients treated for severe faecal incontinence with sacral nerve stimulation. The result of the test stimulation was good in ten of the 14 patients and a permanent system was implanted. After a median of 4.5 months' stimulation, nine of the ten patients continued to respond to respond well. They concluded that this method shows promising results and is minimally invasive compared to other more advanced forms of treatment.

[Kenefick and cols](#) reports the experience of St Mark's Hospital over 5 years with 15 incontinent patients who underwent temporary, and subsequent permanent, stimulation. Continence had improved in all patients at median follow-up of 24 months. Eleven patients were fully continent. There were no major complications. They concluded that sacral nerve stimulation is a safe and effective treatment for faecal incontinence when conventional treatment has failed.

#### **Radio-frequency energy**

[Takahashi and cols](#) studied ten patients with fecal incontinence treated by radio-frequency energy delivery deep to the mucosa of the anal canal. This procedure was undertaken by delivering temperature-controlled radio-frequency energy via an anoscopic device with multiple needle electrodes to create thermal lesions deep to the

mucosa of the anal canal, using conscious sedation and local anesthesia. All parameters in the fecal incontinence-related quality of life were improved and protective pad use was eliminated in five of the seven baseline users.

### **Injectable silicone biomaterial**

[Kenefick and cols](#) reported their experience treating six incontinent patients injecting silicone based biomaterial circumferentially, trans-sphincterically, at or just above the dentate line. At a median follow up of 18 months, five of six patients had marked symptom improvement. There was a corresponding physiological increase in maximum anal resting and squeeze pressures. Ultrasound showed the Bioplastique to be retained in the correct position in the improved patients without migration. There were no complications. They concluded that trans-sphincteric injection of silicone biomaterial can provide a marked improvement in faecal incontinence related to a weak or disrupted internal anal sphincter.

### **Biofeedback**

[Pager and cols](#) reported a study to assess the long-term clinical and quality of life outcomes for patients after a four-month treatment program for fecal incontinence based on pelvic floor exercises and biofeedback. Eighty-three patients were contacted for interviews at a median of 42 months after program completion. They continued to enjoy strongly significant improvements in all outcome measures, with 75% perceiving a symptomatic improvement and 83% reporting improved quality of life. It is concluded that this study confirms the long-term improvement in fecal incontinence achieved through treatment with biofeedback and pelvic floor exercises.

### **The rectal trumpet**

[Grogan and Kramer](#) undertook a study to determine if a nasopharyngeal airway (rectal trumpet) could be used as a fecal containment device in 22 critically ill adult and geriatric patients with ongoing fecal incontinence who were receiving care in an intensive care and intermediate care unit. All patients had containment or improved containment of stool. Observable healing or restoration of skin integrity occurred in 90% of the patients with acquired skin injury. They concluded that use of a rectal trumpet was well tolerated by patients, practical for nurses and provided benefits to the patient included wound healing and improved comfort.

### **Artificial anal sphincter**

[Ortiz and cols](#) report their experience with postoperative complications and functional outcome following 24 consecutive implantations of an artificial anal sphincter in a mean follow-up period of 28 months. During the postoperative period, complications occurred in nine patients, two of whom required reoperation. During follow-up, complications developed in ten patients, nine of whom were reoperated. Definitive device explantation was necessary in seven patients. The cumulative probability of device explantation was 44 per cent at 48 months. Only five patients were free of complications. In 15 patients with functioning implants continence grading improved from a mean of 18 in the preoperative period to 4 after operation ( $P < 0.001$ ). They concluded that artificial anal sphincter is a useful alternative for

refractory faecal incontinence but the incidence of late postoperative complications is high.

### **Dynamic graciloplasty**

In this multicenter report, [Wexner and cols](#) assessed the long-term efficacy of dynamic graciloplasty in 115 patients treated for fecal incontinence considering the existence of pre-operative ostomy or not. Success was achieved in 56% of nonstoma patients and 43% in the stoma patients at 24 months. The measured physiologic continence parameters did not correlate with continence outcome. They concluded that dynamic graciloplasty was successful in the majority of patients with end-stage fecal incontinence.

## **Anal Fissure**

### **Nicorandil x anal ulceration**

[Watson and cols](#) report a series of five patients with non-specific anal ulceration, all of whom received nicorandil, a vasodilator used to control angina, which has been associated with oral ulceration and stomatitis. Histological appearances were similar and the ulcers healed on withdrawal of the drug. They suggest that nicorandil might be a cause of anal ulceration.

### **Topically applied nitroglycerin**

[Svendsen and cols](#) and cols present a systematic review of evidence-based background for treating chronic anal fissure with topically applied nitroglycerin including ten randomised clinical trials. In five of six studies, NTG had an effect on healing that was better than that of placebo or lignocaine. Lateral internal sphincterotomy and topical NTG were compared in four trials. Surgery had a better healing rate, but more late complications. The results suggest that in 31-65% of patients an operation could be avoided with NTG therapy, but the possibility still remains that the observed effect may be the outcome of publication bias.

The economic impact of managing a chronic anal fissure with nitroglycerin was assessed by [Christie and cols](#), comparing with lateral internal sphincterotomy in the United Kingdom (UK), from the perspective of the National Health Service (NHS). They found that it affords a potential cost reduction of 224 pounds per patient without any loss in effectiveness and concluded that GTN is potentially a cost-effective first-line treatment strategy for the management of a chronic anal fissure.

### **Diltiazem is a good option in resistant fissures**

[Jonas and cols](#) reviewed the effect of diltiazem in 39 anal fissure patients after failed treatment by glyceryl trinitrate or discontinuation due to headaches. Anal resting pressures were lowered by 20 percent and fissures healed in 49% within 8 weeks. They concluded that topical 2 percent diltiazem is effective treatment for glyceryl trinitrate-resistant chronic anal fissures. Side effects, mainly perianal itching, may occur in 10 percent of patients but are generally tolerated.

## **Botulinum toxin injection**

[Madalinski and cols](#) analysed prospectively the side effects of botulinum toxin A (BT-A) injections in the treatment of chronic anal fissure (n=105) and functional outlet obstruction (n=34). No life-threatening side effects after 181 injections of BT-A were observed and most of the side effects were only transient symptoms. They concluded that treatment with BT-A is safe and no severe side effects are observed.

[Minguez and cols](#) analyzed the long-term outcome of patients in 57 patients with healed anal fissure botulinum toxin injection and the factors contributing to recurrence. Fissure recurrence was shown in 41.5% of patients and was associated with anterior location of the anal fissure, prolonged illness, need for reinjection, high doses to achieve healing and a lower decrease of maximum squeeze pressure after treatment.

## **Anal Fistula**

### **Use of setons with no surgery**

[Theerapol and cols](#) reported their experience patients with 47 anal fistula patients treated using setons alone, with no associated surgical procedure. At least two setons were inserted through each fistula. One was tied tightly to function as a cutting seton which sequentially tightened by the patient and another was tied loosely for drainage. Seventy percent of patients had the placement of setons in the clinic without any anaesthesia. Fistula was healed 37 patients (78%). The median healing time was nine weeks. One patient developed recurrent fistula and was healed after another seton placement. No patient developed any faecal incontinence and all patients were satisfied with this treatment. They concluded that routine seton method is safe, cheap and effective in the treatment of anal fistula regardless of type.

### **Muscle-filling procedure for transsphincteric fistulas**

[Wang and cols](#) designed a study to evaluate long-term results and quality-of-life outcomes in 207 patients who had been treated by the muscle-filling procedure for posterior transsphincteric fistulas with cryptoglandular origin. One hundred fifty-one patients who returned their questionnaires were included. Fistulas recurred in 4.6%, 56% reported some reduction in their sense of sphincter-tightening ability and 52% reported some degree of incontinence. They concluded that muscle-filling procedure is a viable option in the treatment of transsphincteric fistulas, with a favorable recurrence rate and an overall patient satisfaction rate above 88%.

## **Radiation proctitis**

### **Amifostine for prevention of radiation rectal injury**

Ben-Josef and cols undertook a phase I dose-escalation clinical trial to assess the potential role of intrarectal application of amifostine to prevent late injury to the rectal wall in 29 patients with prostate cancer treated with external beam irradiation. All patients completed therapy with no amifostine-related toxicity at any dose level.

The application was feasible and well tolerated. With a median follow-up of 26 months, 9 patients (33%) developed rectal bleeding (8 Grade 1, 1 Grade 2), mostly confined to the anterior rectal wall. No visible mucosal edema, ulcerations, or strictures were noted. They concluded that this preliminary efficacy data are encouraging, and further clinical studies are warranted.

## ***Rectal prolapse***

### **Laparoscopic treatment of rectal prolapse**

[Rose and cols](#) reported the findings of a prospective multicenter observational study of 150 patients undergoing laparoscopic or laparoscopic-assisted colorectal surgery for rectal prolapse including rectopexy combined with resection (n=124) and rectopexy alone (n=26). The conversion rate was 5.3%; perioperative complications (21 surgical and 35 general perioperative) were recorded in 24.7%. Reoperation rate was 5.3% (bleeding 2, anastomotic leak 2, ileus 4). They concluded that techniques of conventional prolapse surgery can readily be translated to the laparoscopic modality. The usually elderly patients in this group may benefit with reduced surgical trauma.