

Management of Crohn's disease and ulcerative colitis

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Abstract

Crohn's disease and ulcerative colitis (UC) are complex, contrasting disease processes that require multidisciplinary team management. The treatment modalities in inflammatory bowel disease are varied and the indications and threshold for surgery quite different in patients with UC compared with Crohn's disease. We discuss the panoply of surgical techniques available to the surgeon and IBD-patient whilst highlighting the potential sequelae, complimentary medical therapies, nutritional considerations and innovative techniques for reconstruction of the gastrointestinal tract.

Keywords Crohn's disease; inflammatory bowel disease; surgical management; ulcerative colitis

Ulcerative colitis

Disease process

Ulcerative colitis is an idiopathic relapsing and remitting condition affecting the rectum and a variable length segment of the colon. The disease is confluent and involves the mucosa and lamina propria. It can be thought of as superficial compared with the transmural nature of Crohn's.

Indications for surgery in UC

Surgery to excise the colon is curative if the rectum is also removed. In the emergency setting a total colectomy is indicated for severe fulminant colitis, toxic megacolon, intractable bleeding or colonic perforation. The most popular clinical scoring systems used to assess the likelihood of failure of medical therapy and need for emergency surgery in acute severe colitis, are the Travis score and Ho score. Both are applied after 72-hours' intravenous steroid therapy with high-risk scored subjects facing a 33–34% risk of requiring surgery by Travis and the Ho scores respectively.¹

In the acute situation a total colectomy and end ileostomy is most commonly undertaken, leaving the rectum in situ. This reduces the potential morbidity associated with pelvic dissection. In particular the risks of pelvic nerve injury and hazards of reduced fertility are mitigated.

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Indications for surgery in the elective setting include colitis refractory to medical therapy, growth retardation in children, mucosal dysplasia or malignancy and occasionally in attempt to ameliorate extra-intestinal manifestations of the disease.²

Surgical options

Laparoscopic surgery is now the standard,³ with reduced hospital stay, postoperative pain, ileus and wound complications conferring enhanced recovery and facilitating a laparoscopic approach to future surgery. In the context of toxic megacolon, or perforation, open surgery at laparotomy may still be mandated.

The rectal stump

At emergency surgery for UC the rectal stump is usually left in situ, despite this often being the focus of most severe inflammation. Diversion of the faecal effluent allows the inflammation to settle. Moribund patients were historically treated by performing a blow hole colostomy and ileostomy – the Turnbull procedure⁴ – as a minimally invasive, temporizing measure. This is seldom used now.

The closed rectal stump is at risk of 'blow-out' after emergency subtotal colectomy with consequent pelvic sepsis. Of this reason many surgeons over-sew (reinforce the staple line) the rectal stump – and place a wide-bore rectal drain for decompression and lavage. Alternatively the rectal stump can be tacked onto the posterior aspect of the midline wound, or a formal rectal mucous fistula can be fashioned (Figure 1).

Proctectomy

Excision of the rectum (proctectomy) is ultimately recommended to prevent recurrence of disease and to remove the risk of rectal stump malignancy. The lifetime risk of dysplasia or malignancy in the retained stump is thought to be in the order of 10%; however, case series report rates ranging from 0 to 25%.⁵ Surgery to excise the rectum is often deferred until patients have completed their families.

Panproctocolectomy is the synchronous excision of the colon and rectum (Figure 2). This may be performed with close excision of the anal complex or an intersphincteric plane can be developed during the perineal dissection, thereby preserving the muscle of the external anal sphincter for closure.

The options for reconstruction are either to perform an ileo-rectal anastomosis (with the risk of recurrent disease and the need to survey the rectal stump for resurgent inflammation and potential neoplastic development), or the creation of an ileal pouch–anal anastomosis (IPAA). Alternately a proctectomy can be offered without reconstruction if the patient prefers a permanent ileostomy (Figures 3 and 4).

Ileal pouch–anal anastomosis (IPAA) is the gold standard for restorative proctectomy (Figure 5). A variety of surgical methods may be employed to create a small bowel reservoir with a pouch–anal anastomosis. The variations in technique largely focus on the configuration of the small bowel. The J-pouch being the most commonly performed technique, however the larger volume S- and W-pouch are alternatives. Full bowel mobility may need to be exploited (with careful mobilization at the DJ flexure, mesentery, and peritoneum) to allow the small bowel conduit to reach the pelvic floor. The aims are to return continence, freedom from stoma and an anticipated bowel frequency

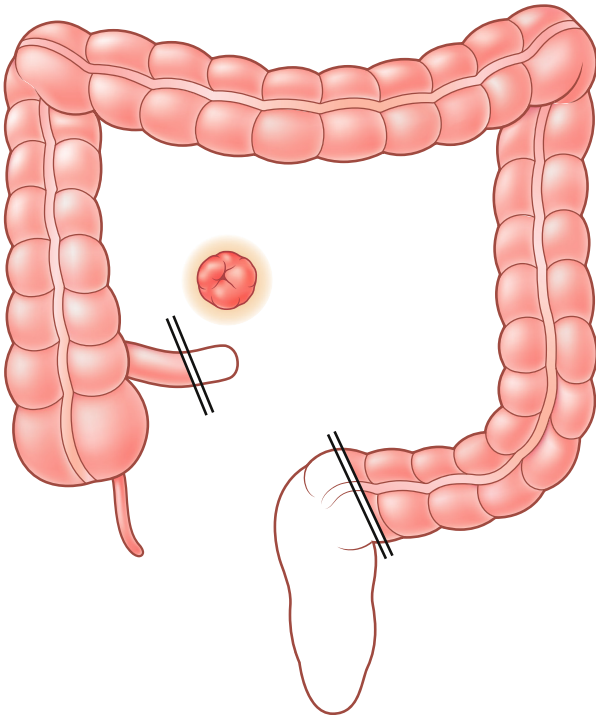


Figure 1 Subtotal colectomy and end ileostomy – preserved rectum unshaded

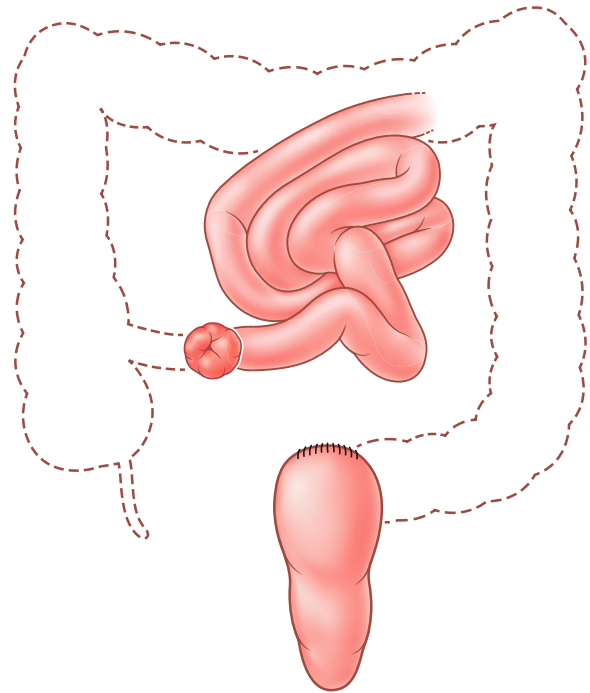


Figure 3 Subtotal colectomy, preserved rectal stump, end ileostomy

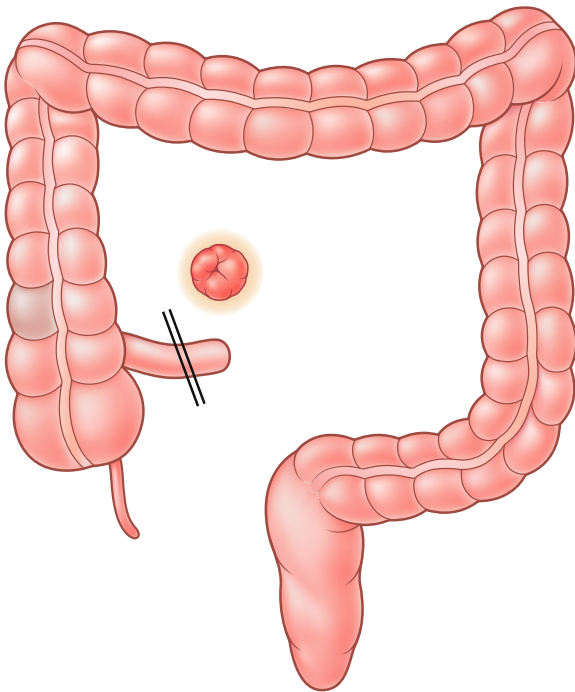


Figure 2 Panproctocolectomy and end ileostomy – resected tissue shaded red

on average of four to six motions per day. The procedure is complex with short-term sequelae including anastomotic leak, subsequent pelvic sepsis and poor long term pouch function as a potential result. Even successful pouches face a 50% risk of intermittent episodes of pouchitis,⁶ with inflamed pouch mucosa and diarrhoea resulting from bacterial overgrowth. Oral antibiotics (ciprofloxacin ± metronidazole) and the probiotic VSL-3 are

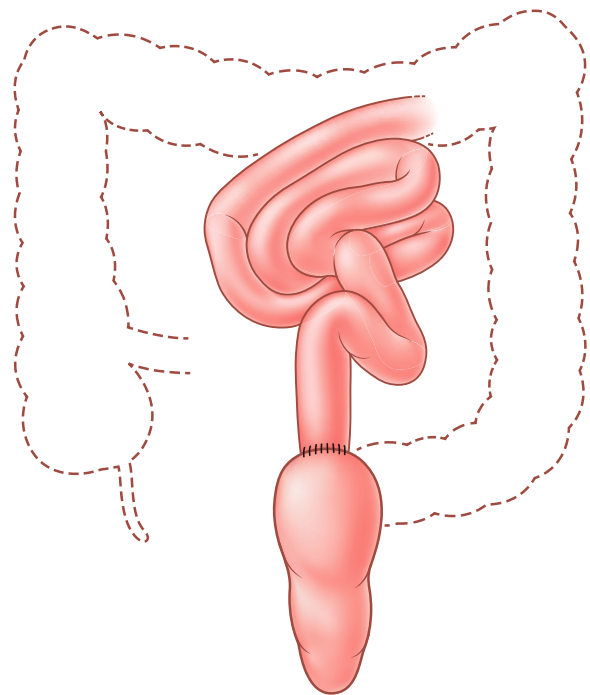


Figure 4 Ileo-rectal anastomosis

used in the treatment and prophylaxis of this debilitating sequelae.⁷ A diagnosis of pouchitis relies on the combination of clinical symptoms and pathologically graded inflammation. The pouch can also suffer from cuffitis and irritable pouch symptoms.

Interesting developments: there is evidence that appendicectomy for appendicitis is protective for ulcerative colitis - based on the hypothesis that the appendix acts as a source of bacteria,

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