

Early surgical intervention in ulcerative colitis

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Ulcerative colitis (UC), one of the major categories of inflammatory bowel disease (IBD), is characterised by chronic colonic mucosal inflammation of unknown aetiology. Unlike the other major form of IBD, Crohn's disease (CD), UC is pathologically limited to the rectum and colon, facilitating definitive surgical therapy. Whereas the role of surgery in CD is primarily to treat complications of the disease process, surgery in UC is curative for the intestinal manifestations of the disease and nearly eliminates the risk of future malignancy. There exist three major indications for surgical intervention in UC. The first indication is for treatment of acute, medically unresponsive flares. The second is for poorly controlled symptomatic disease or to address intolerable treatment side effects. Lastly, surgery is performed for the possibility of malignancy after longstanding symptomatic or asymptomatic disease. Because there are indications for surgery, both early in the course of the disease and during the chronic disease phase, which may be asymptomatic, early curative surgical intervention is a reasonable alternative to prolonged medical management. Currently, surgical intervention is accomplished safely, with good functional results, and with a high degree of patient satisfaction.

Historically, definitive surgical treatment of UC required removal of the colon, rectum, and anus and creation of a permanent ileostomy. Since the early 1980s, surgical therapy has evolved to removal of the entire colon and rectum followed by construction of an ileal pouch that is anastomosed to the anal canal. This procedure is known as a proctocolectomy and ileal pouch anal anastomosis (IPAA).¹ IPAA avoids the need for a permanent ostomy and maintains the normal route of defecation, albeit with altered frequency. The operation is usually performed in one or two stages: a preliminary colectomy with rectal preservation, which adds a third stage to the procedure, is reversed for severely ill patients. The severity and frequency of complications related to surgery have decreased significantly and the functional results are durable.²⁻⁴ The most common early complications are pelvic sepsis from a pouch leak (3%), abdominal wound infections (3%), and early small bowel obstructions (15%).² Equally important as good functional results are the patients' perceptions of their life after the procedure. Numerous studies using validated quality of life (QoL) measures indicate that there is markedly improved QoL after restorative surgery. Most patients report "perfect health" at 12 months after surgery.⁵⁻⁷ Even UC patients with well

controlled disease preoperatively continue to perceive themselves as having a lower QoL due to living with a chronic illness and score similarly to patients with diabetes.⁵ What is clear from these and other studies is that patients who undergo surgery for UC have an overall and health related QoL comparable with the healthy general population, despite alterations in their bowel habits.

While fulminate disease, failure of medical therapy, or intractability of disease symptoms are clear indications for surgical intervention, protracted disease, even when asymptomatic, is an equally important indication for colectomy due to the increased risk of malignancy. While there are reports of no increased risk of malignancy in the setting of chronic UC, the majority of the literature supports the contention that chronic UC patients represent a population at high risk for developing colorectal cancer.⁸⁻¹¹ It is generally accepted that the risk of colorectal cancer in the setting of UC increases with duration of disease activity. One estimate puts that risk at 25-30% after 25 years of disease activity.¹² In those UC patients managed chronically with medications, it is recommended that they undergo colonoscopic surveillance. Yet the optimum time course and frequency for surveillance is currently unclear. A survey of gastroenterologists found that the majority practise surveillance in a disorganised fashion.¹³ To make this issue more confusing, recent evidence would suggest that the presence of any dysplasia, even low grade, occurring in the background of chronic UC may be an indication for colectomy. This was first suggested by Taylor *et al*, and recently by Gorfine *et al*, who demonstrated that colon specimens with dysplasia of any grade were 36 times more likely to harbour a cancer.^{14, 15} The knowledge of dysplasia associated risk by gastroenterologists leads to inconsistency of management which can harm patients. Only 53% of surveyed gastroenterologists recommended colectomy in the setting of high grade dysplasia while 16% were unaware of the significance of a dysplasia associated lesion or mass.¹³ Also important to this discussion is whether asymptomatic patients who have the IPAA procedure for dysplasia are any less satisfied with the result. Many of these patients may have near normal preoperative bowel function. However, in QoL measurements among patients who had the IPAA for active colitis compared with those with dysplasia, there were no differences in QoL; both groups reported a high degree of satisfaction with their post-operative condition.¹⁶ The inconsistency of practice by gastroenterologists, the risks and costs of surveillance, and the known cancer risk, makes it

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unclear if there is any benefit to deferring surgery in those patients with chronic disease, even if they are asymptomatic.

The cost of UC to the individual and society is significant. The reported incidence of UC in Europe and the USA has been estimated at approximately seven patients per 100 000 population.¹⁷ The estimated annual cost of UC in the USA in 1990 was estimated at \$0.4–0.6 billion dollars, with an average per patient cost of approximately \$1488/year.¹⁸ This does not include productivity loss due to illness and the impact on patient lifestyle related to symptoms or treatment side effects. With increased use of immunomodulator therapy for UC, there might be an increasing tendency to defer surgical treatment. However, aggressive medical therapy in the long term might be more costly to the individual and society due to a delay in definitive surgical therapy that nearly all patients will eventually require.^{19–20} In a cost analysis of patients treated with aggressive medical therapy, Sher *et al* reported that the mean total hospital cost for medically treated patients admitted with a severe UC flare was \$28 477 per individual for that hospitalisation.²⁰ The onetime cost for a three stage restorative procedure was \$33 041 patient. If patients had undergone surgery earlier, they might have avoided the three stage procedure that is associated with increased morbidity and cost.

Surgical therapy for UC provides definitive treatment for the intestinal manifestations of the disease. When performed by experienced surgeons, the complication rate is low and the functional results are predictably good. In fact, most patients report a quality of life comparable with that of normal healthy patients. While

many patients with symptoms can be managed effectively on medical therapy, these same patients will eventually be referred for surgery due to the duration of the disease and the increased risk of malignancy. Given the annual financial and personal cost of prolonged medical therapy, the risk of failed medical therapy and possible emergent surgery, and the need for surveillance procedures due to the risk of malignancy, early planned surgical therapy should be advocated. Definitive surgical therapy in the form of IPAA allows UC patients to resume normal healthy lives with an excellent quality of life.

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Summary points

- UC is curative for the intestinal manifestations of the disease and nearly eliminates the risk of future malignancy.
- Proctocolectomy with IPAA can be performed safely with a low complication rate and maintains the normal route of defecation albeit with slightly altered frequency.
- Patients report significantly improved overall and health related quality of life after restorative surgery even when the surgery was performed for asymptomatic disease.
- At present, medical therapy does not decrease the markedly elevated risk of colonic malignancy associated with chronic UC requiring the patient to eventually undergo surgery even if they have asymptomatic disease.
- Aggressive medical therapy may be less cost effective than early surgery and may increase the morbidity of the surgical procedure.

Debate