

# Restorative proctocolectomy for distal ulcerative colitis

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## Abstract

**Background**—Chronic distal colitis may cause troublesome symptoms and alter quality of life. When medical treatment fails to control symptoms, patients and doctors are often reluctant to consider surgical resection because of the relatively small portion of the large bowel affected by the disease.

**Aim**—To assess the outcome of restorative proctocolectomy (RP) in patients with distal colitis who required surgery for chronic debilitating symptoms and failed medical management.

**Patients/Methods**—From 1986 to 1996, of 263 patients receiving RP for ulcerative colitis, 27 (16 men) were operated on for distal ulcerative colitis limited to the rectum and sigmoid colon. Bowel function and quality of life were compared before and one year after RP.

**Results**—The mean (SD) duration of ulcerative colitis was 11 (6) years. RP was performed at a mean age of 46 (10) years. All the pouches were J-shaped, and a diverting loop ileostomy was always performed. Mean (SD) hospital stay was 25 (10) days. Seven complications occurred in six patients. Previously unknown severe dysplasia was discovered on the colectomy specimen in two patients. After RP there was a significant decrease in mean (SD) daytime stool frequency (8.2 (4) *v* 4.7 (2), *p*<0.05), night-time stool frequency (2 (2) *v* 1 (1), *p* = 0.05), and the number of patients with urgency to defecate (26/27 *v* 1/27, *p*<0.001). Sex life was improved in eight patients, social life in 26, and professional life in eight. Twenty six patients were satisfied with the results, and 25 wished that they had received surgery earlier in the course of their disease.

**Conclusion**—RP can improve bowel function and quality of life in patients with disabling chronic symptoms of distal ulcerative colitis.

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Keywords: proctocolectomy; ulcerative colitis; bowel; quality of life

Numerous reports have established that restorative proctocolectomy (RP) is a safe procedure with good functional results.<sup>1-3</sup> The operation has gained widespread acceptance in the treatment of ulcerative colitis and is clearly indicated for complicated acute severe colitis, extensive colitis poorly controlled by medical treatment, or when high grade dysplasia or car-

cinoma occurs. In these cases, coloproctectomy is inevitable and RP procures acceptable bowel function and undoubtedly improves quality of life.<sup>4,5</sup> In about one third of patients with ulcerative colitis, inflammation is limited to the rectum and sigmoid colon and symptoms are usually well controlled by medical treatment. However, in a few cases, refractory proctitis with recurrent bleeding episodes or chronic inflammation resulting in microrectum with urgency in the need to defecate and high stool frequency may considerably alter the quality of life of the patients. In these cases, RP can cure the disease while offering obvious advantages over permanent colostomy or ileostomy, but doctors and patients are often reluctant to accept a major operation because of absence of life threatening complications. In this setting, surgery should not only be safe and efficacious but it should also produce a better quality of life than medical management.

The aim of this study was to compare bowel function and quality of life before and after RP in a cohort of patients operated on for distal colitis.

## Patients and methods

Among the 263 patients who had RP for ulcerative colitis in our surgical unit between 1984 and 1996, 27 were operated on for distal colitis and form the basis of this report.

## PATIENTS

There were 16 men and 11 women whose mean (SD) age at diagnosis of ulcerative colitis was 45 (8) years (range 20-65). Mean (SD) duration of symptoms before surgery was 10 (5) years (range 2-30), and the disease never extended beyond the sigmoid colon, as assessed by endoscopic or radiological examination during the course of the disease. Eleven patients required daily steroid enemas, 14 received mesalamine, and in four cases azathioprine was given for more than five months without beneficial effect. Seven patients had extraintestinal manifestations of inflammatory bowel disease. Two of them had ankylosing spondylitis and the remaining five experienced two to seven episodes of peripheral arthritis that responded to non-steroidal anti-inflammatory drugs. Surgery was indicated for repeated episodes of acute colitis (more than three a year) poorly controlled by medical treatment in 14 cases and for poor bowel function with intolerable frequency of defecation, urgency in the need to defecate with subsequent incontinence.

**Abbreviation used in this paper:** RP, restorative proctocolectomy.

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Table 1 Functional results in 27 patients with distal ulcerative colitis before and one year after restorative proctocolectomy and ileal pouch-anal anastomosis (IPAA)

	Before IPAA	One year after IPAA	p Value
Mean (SD) stool frequency			
24 hours	8 (4)	4.5 (2)	<0.05
Night	2 (2)	1 (1)	<0.05
Perfect continence (%)			
Day	15 (55%)	25 (92%)	NS
Night	14 (52%)	20 (75%)	<0.05
Urgency	26 (96%)	1 (4%)	<0.001
Perianal skin irritation	10 (37%)	6 (22%)	NS
Discrimination gas-stool	25 (92%)	22 (81%)	NS
Medication	23 (74%)	5 (18%)	<0.05
Dietary restrictions	13 (48%)	8 (29%)	NS

#### SURGICAL TECHNIQUE

The same surgical technique was used for all patients and included an abdominal colectomy and proximal proctectomy, construction of a J-shaped stapled ileal reservoir with 18 cm limbs, a perineal mucosectomy beginning at the dentate line and including the columns of Morgagni, a hand sewn ileoanal anastomosis, and a diverting loop ileostomy. The ileostomy was closed 6–10 weeks later after radiological control of the reservoir and anastomosis.

#### EVALUATION OF BOWEL FUNCTION AND QUALITY OF LIFE

For all patients having RP in our unit, a prospective evaluation of functional results and quality of life is performed by an independent observer before RP, three, six, and 12 months after the operation, and yearly thereafter. For the purpose of this study, data obtained before and one year after RP were retrieved from the patients' notes. For bowel function, variables studied included stool frequency, daytime and nocturnal continence (perfect, occasional staining, or frank soiling), need to wear protective pads, inability to defer defecation for more than 15 minutes (urgency), ability to discriminate gas from stool, perianal skin irritation, and need for antidiarrhoeal medication or strict diet.

For quality of life, patients were asked to evaluate their satisfaction with five performance activities including sex life, social activities, recreation, travel, and work. Each category was scored as follows: 1 = severely restricted, 2 = mildly restricted, 3 = minor restricted, 4 =

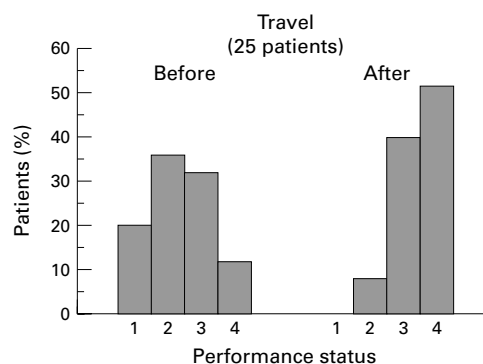


Figure 1 Comparison of performance status with regard to travel. Overall distribution of performance scores before and one year after restorative proctocolectomy are shown. Higher scores were obtained after the operation ( $p < 0.01$ ; Wilcoxon signed rank test).

not restricted. Overall satisfaction with the operation was also assessed; degree of satisfaction one year after the ileostomy closure was quoted as: 1, completely satisfied; 2, well satisfied; 3, little satisfied; 4, not satisfied.

#### STATISTICAL ANALYSIS

Results are given as mean (SD) or median and range. Comparisons of ordinal variables before and after RP in the same individuals were made using the Wilcoxon signed rank test and comparison of nominal variables using McNemar's test.

#### Results

##### POSTOPERATIVE COURSE

There were no deaths. The mean hospital stay was 25 (10) days (range 16–94). Seven post-operative complications occurred in six patients (22%) including one small bowel obstruction, two pelvic sepses, one anastomotic leak after ileostomy closure, one wound infection, one urinary retention, and one chest infection. After a mean follow up of 35 months (range 14–109), no late complications were observed, but three patients had a single episode of acute pouchitis which resolved promptly with oral antibiotics. These three patients had extraintestinal manifestations of ulcerative colitis before surgery (one spondylitis, two peripheral arthritis).

Pathological examination of specimens showed moderate dysplasia in the rectal mucosa of two patients, which had not been diagnosed by biopsy before surgery in 13 cases.

##### BOWEL FUNCTION

Table 1 lists the overall functional results before and one year after RP. After RP there was a significant decrease in daytime and nocturnal stool frequency. An increased number of patients had perfect continence and the number of patients with faecal incontinence decreased from 8 to 0 during the day and from 7 to 3 at night. Before the operation, 26 patients were unable to defer defecation for more than 15 minutes and this troublesome symptom disappeared in all but one patient after RP. No patient complained of incomplete evacuation after the operation.

##### QUALITY OF LIFE

Figures 1 to 5 illustrate the responses of the patients in all five activity categories. The histogram is the distribution of the performance scores before and after RP. The statistical comparison using the Wilcoxon signed rank test showed a significant improvement in scores after surgery for all activities. Overall satisfaction with the operation was high. Nineteen patients were completely satisfied with the results of the operation, six were well satisfied, one little satisfied, and the one who still suffered from urgency after RP was not satisfied. Twenty five patients (93%) wished that they had had surgery earlier in the course of their disease with a mean of 3 (2) years.

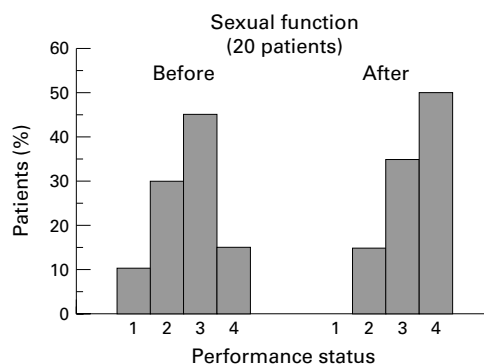


Figure 2 Comparison of performance status with regard to sexual function. Overall distribution of performance scores before and one year after restorative proctocolectomy are shown. Higher scores were obtained after the operation ( $p < 0.05$ ; Wilcoxon signed rank test).

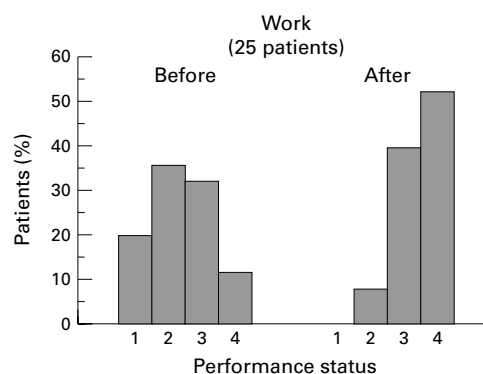


Figure 5 Comparison of performance status with regard to work. Overall distribution of performance scores before and one year after restorative proctocolectomy are shown. Higher scores were obtained after the operation ( $p < 0.01$ ; Wilcoxon signed rank test).

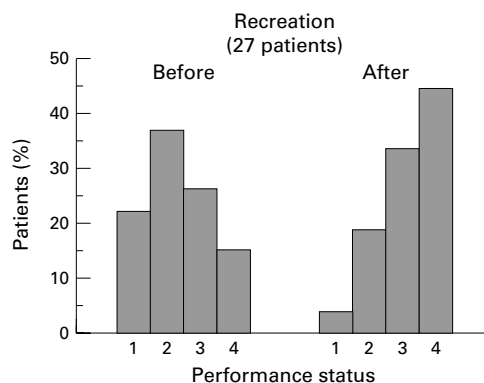


Figure 3 Comparison of performance status with regard to recreation. Overall distribution of performance scores before and one year after restorative proctocolectomy are shown. Higher scores were obtained after the operation ( $p < 0.05$ ; Wilcoxon signed rank test).

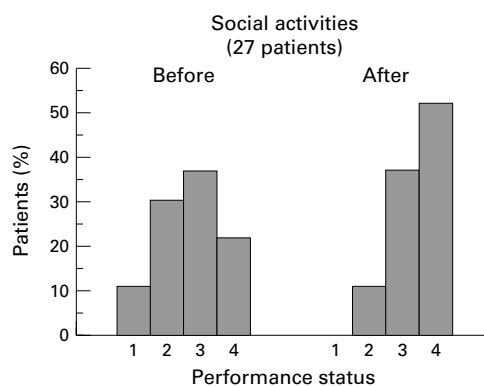


Figure 4 Comparison of performance status with regard to social activities. Overall distribution of performance scores before and one year after restorative proctocolectomy are shown. Higher scores were obtained after the operation ( $p < 0.05$ ; Wilcoxon signed rank test).

## Discussion

This study shows that RP can be beneficial to selected patients with distal ulcerative colitis. The morbidity was acceptable, and after surgery bowel function was improved. Consequently quality of life was better and satisfaction with the operation was high.

In over half of patients with ulcerative colitis, the disease is limited to the rectum and sigmoid colon and in most cases the upper margin of inflammation will not extend more proximally.<sup>6</sup> In these cases of distal colitis, inflammation is

usually amenable to topical (rectal) treatment with mesalamine or steroids, for example. A brief course of oral steroids to induce clinical remission is sometimes required in patients presenting with moderate to severe lesions with more than six to ten bowel movements a day, tenesmus, anaemia, fever, or tachycardia.<sup>7</sup> Maintenance treatment with oral or rectal mesalamine has proved to be effective in preventing recurrence, the risk of which is similar to that observed in patients with extensive colitis. However, despite medical treatment, some patients experience a poor quality of life and restrictions in their social activities because of either frequent relapses or the formation of a microrectum resulting in increased frequency, incontinence, and urgency in the need to defecate.

Among the surgical treatment options that can be offered to these patients, proctocolectomy with permanent ileostomy is unacceptable and proctectomy with coloanal anastomosis is always associated with recurrence of the inflammation in the proximal colon.<sup>8,9</sup> Proctocolectomy with a pelvic ileal reservoir has been shown to be very safe despite some postoperative morbidity and ensures acceptable bowel function and a good quality of life.<sup>1,2,4</sup> However, patients undergoing RP need to be informed about the potential advantages over medical treatment and very few data are available on the outcome of RP for distal colitis. In a consecutive series of 177 patients receiving RP for ulcerative colitis, the outcome of 20 patients with distal colitis was compared with that for patients with more extensive disease. The incidence and range of early morbidity, the functional results in terms of bowel frequency and continence, and the risk of developing pouchitis was similar in the two groups.<sup>10</sup> This study showed that the results of RP do not depend on the extent of colitis before surgery. Whether RP procures any advantage over medical treatment has been examined in another study in which 103 patients who had undergone RP were compared with 95 in remission with medical treatment.<sup>5</sup> In this retrospective study, patients with a pouch had a greater frequency of bowel movements (five compared with two) but less urgency to defecate (11.7% v 72.6%). Continence, the use

of protective pads, discrimination between flatus and stools, and perianal soreness were similar in the two groups. Limitation of social activities and Hospital Anxiety and Depression scores were significantly higher in medically treated patients. In this study, 54.7% of the medically treated patients had distal colitis whereas the proportion of patients operated on for distal colitis was not mentioned but was presumably low. Comparison of results for subgroups of patients with distal colitis is therefore impossible.

Because quality of life is of major relevance in the decision to perform RP for distal colitis, we compared functional results, social restrictions, and overall satisfaction before and after surgery in the same group of patients. Our results clearly indicate that RP is beneficial to patients that are severely restricted by their disease, even though the segment of inflamed bowel is short.

Bowel function was improved, with a decrease in stool frequency and incontinence, but, most of all, it was the disappearance of the urgency in the need to defecate that most strongly correlated with improved quality of life and a high degree of satisfaction with the operation. The presence of such a disabling symptom despite medical treatment in patients with distal colitis could be a selection criterion for RP. A quality of life study on inflammatory bowel disease certainly requires very precise evaluation. In our study, the degree of satisfaction of the patient with several activities before and one year after RP may not be as accurate as performance scores. However, it shows an

improvement after the operation for all activities studied and is consistent with the improvement in bowel function and the degree of satisfaction with the operation.

The results of this study suggest that RP can be offered to patients with distal colitis whose quality of life is altered by refractory proctitis or increased bowel frequency and urgency. The results in terms of morbidity are acceptable, and after RP bowel function and quality of life were improved.

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