SHORT REPORT

Intersphincteric proctectomy with end-colostomy for anorectal Crohn's disease results in early and severe proximal colonic recurrence

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Abstract

Background: Perianal Crohn's disease (CD) represents a more aggressive phenotype of inflammatory bowel disease and often coincides with proctocolitis. This study aims to assess the outcome of patients undergoing proctectomy with end-colostomy.

Methods: A retrospective outcome analysis of 10 consecutive patients who underwent intersphincteric proctectomy with end-colostomy between February 2007 and May 2011 was performed. All patients suffered from refractory distal and perianal CD. The proximal colon was normal at endoscopy. All data were extracted from a prospectively maintained database. The main outcome parameter was disease recurrence and need for completion colectomy.

Results: Severe and early endoscopic recurrence in the proximal colon occurred in 9/10 patients at a median time interval of 9.5 months (range: 1.9–23.6 months). Despite protracted medical treatment, completion colectomy was necessary in 5 patients. One patient, who underwent a second segmental colectomy with a new end-colostomy, showed again endoscopic recurrence and is currently treated with anti-TNF agents.

Conclusions: Intersphincteric proctectomy with colostomy seems to be an ineffective surgery for perianal CD with coexisting proctitis and results in a high risk of recurrence of the disease in the remaining colon. Therefore, despite a normal appearance of the proximal colon, a proctocolectomy with end-ileostomy seems to be the surgical approach of choice in these patients.

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1. Introduction

Approximately one-third of patients with CD will develop rectal and/or perianal manifestations of the disease.\(^1\) There is a broad range of clinical manifestations of perianal Crohn’s disease including skin tags, ulcers, low and high fistulas, rectovaginal fistulas, perianal abscesses, anoctal strictures and cancer. Perianal disease significantly jeopardizes the quality of life as the relapsing and penetrating nature of the disease may result in persistent perianal drainage, pain, dyspareunia, dyschezia and progressive destruction of the anal canal and sphincters causing intractable anal incontinence.\(^2\)

Surgery for small bowel or ileocolic disease is well established and includes segmental resection and strictureplasty. In patients with large bowel Crohn’s disease and rectal sparing a segmental or (sub)total colectomy can be performed. In patients with anoctal involvement proctocolectomy with definitive ileostomy has been the surgical approach of choice. In a recent meta-analysis comparing segmental vs. subtotal colectomy, both procedures were equally effective but at the expense of earlier recurrence in the segmental colectomy group.\(^3\) From this observation one could expect that proctectomy with colostomy would be an effective surgery in patients with anoctal disease and rectosigmoidal involvement without proximal colonic disease. This study aims to assess the outcome of patients undergoing proctectomy with end-colostomy for intractable perianal Crohn’s disease.

2. Patients and methods

All patients had disabling rectoanalfal disease despite optimized local surgery and protracted medical therapy with immunomodulators and anti-tumor necrosis factor (anti-TNF). The anal function of all patients was impaired, due to penetrating disease and multiple surgical interventions. For all patients the indication for intersphincteric proctectomy was decided by an IBD multidisciplinary team. Patient data were retrieved from a prospectively maintained database. The study was approved by the medical ethical committee. The following data were analyzed: date of CD diagnosis, history of proximal bowel involvement, date of last preoperative colonoscopy, extent of disease, date of surgery, medication at surgery, length of hospital stay, postoperative mortality and morbidity (according to the Clavien–Dindo-classification),\(^4\) pathologic findings, date of first postoperative colonoscopy, date of symptomatic or endoscopic recurrence, medical treatment after recurrence, date and type of re-resection, and related hospital stay, morbidity and mortality and length of follow-up. Recurrence was assessed clinically, with blood analysis (CRP, leukocytosis...) and confirmed by colonoscopy. None of the patients received prophylactic medical treatment after primary surgery. Therapy was started only after objective evidence of recurrence. All data are represented as median and range. Patients were followed on a regular basis at the outpatient’s clinic. A control colonoscopy was performed one year postoperatively unless an earlier assessment was necessary because of clinical concerns.

3. Results

3.1. Study population

Between February 2007 and May 2011, 10 consecutive CD patients underwent a proctectomy with end-colostomy. The median age at surgery was 40 years (22–61) with median disease duration of 15 years (6–31). The majority of patients were female (n=7). Five patients never had documented proximal colonic and ileal disease before. Four patients had at least one flare of terminal ileitis, resulting in ileocecal resection in two patients. One patient had a history of pancolitis, however at the time of surgery, endoscopic assessment of the colon could not withhold any inflammation proximal from the rectum. All patients, except one, were taking immunosuppressant drugs and or TNF-inhibitors before primary surgery. Two patients were active smokers. Nine out of ten patients had a flexible ileocolonoscopy at a median interval of 3.3 months (0.1–9.2) before surgery. In one patient endoscopic evaluation of the proximal colon was not possible because of rectal stricture. This patient had no evidence of previous proximal colonic involvement. Ileocolonoscopy showed a median proximal extent of the disease of 35 cm (15–50) with only 2 patients showing mild inflammation higher up. The first one had loss of haustration of the transverse colon, but without any ulceration, the second patient showed little ulceration more proximal in the colon. All other patients (n=8) had no signs of colonic inflammation proximal to the described limit. All patients consented to undergo proctectomy with end-colostomy. All data are summarized in Table 1.

3.2. Surgery

An intersphincteric proctectomy with end-descendostomy was performed in 9 cases; a transversostomy was used in one patient. The proximal colon had a normal macroscopic appearance in all patients. Microscopic analysis of the specimens showed negative section margins in 5 specimens. In the other 5 patients there was microscopic evidence of

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Patient's demographics.</th>
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<tbody>
<tr>
<td>Gender</td>
<td>3  female 7</td>
</tr>
<tr>
<td>Age at surgery</td>
<td>40 years 22–61 years</td>
</tr>
<tr>
<td>Duration of disease</td>
<td>15 years 6–31 years</td>
</tr>
<tr>
<td>Extension of colon involvement</td>
<td>35 cm 15–50 cm</td>
</tr>
<tr>
<td>Active smoker</td>
<td>Yes 2 No 8</td>
</tr>
<tr>
<td>Follow-up</td>
<td>Median 26 months Range 2.2–48 months</td>
</tr>
</tbody>
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inflammation at the proximal section margin. Median length of stay was 9.5 days (range: 7–17) with only minor morbidity in 5 patients (perineal wound dehiscence, Grade 1). Perineal wound complications are very frequent after proctectomies for CD, however in our patients wound problems were superficial, secondary to the limited (intersphincteric) resection, avoiding tension on the wound. There was no mortality. No patients received medical therapy after primary surgery.

3.3. Follow-up data

Early symptomatic recurrence occurred in 9/10 patients after a median follow-up of 9.5 months (1.9–23.6). Six patients (6/10) developed a luminal relapse in the proximal colon with involvement of the peristomal skin (Figs. 1, 2 and 3). Two patients (2/10) had recurrent colitis without skin involvement and one patient (1/10) developed mainly ileal disease and only mild colitis. In all but one patient anti-TNF treatment or immunomodulators were restarted. At a median follow-up of 26 months (2–48), 6 patients needed further surgery. Completion colectomy with end-ileostomy was performed in 5 patients and a segmental colectomy with terminal transversostomy was performed in 1 patient. However, despite anti-TNF treatment this patient developed again endoscopic recurrence requiring surgery. The median interval between primary and re-resection was 15.7 months (4–32). The median length of stay was 10 days (9–29), without any mortality but with increased morbidity. Two patients developed respiratory distress and two patients developed abdominal sepsis. One of them needed an explorative laparotomy. Three patients have continued medical therapy but no mucosal healing could be obtained. Follow-up data are summarized in Table 2.

4. Discussion

This outcome assessment heralds an important clinical observation about the high rate of recurrence after proctectomy with end-colostomy for patients with anorectal CD. Though in all cases the proximal section margin was macroscopically free of ulcers and inflammation, which was confirmed microscopically in five cases, nine of the ten patients developed early recurrent peristomal and/or distal colonic disease after primary surgery.

Fazio et al. showed in a randomized trial that the remaining microscopic inflammation at the section margin has no impact on the development of recurrent disease. The relevance of this study, focusing on ileocolic disease, is uncertain in the setting of colonic CD.

Temporary fecal diversion can lead to remission in the defunctioned bowel segment in some patients. However, after closing the diverting ostomy, many patients recur and need a definitive proctectomy. In this series the anal function of all patients was completely affected and no conservative surgery, even fecal diversion, could be proposed. Therefore all patients underwent a definitive proctectomy.

Restorative proctectomy with coloanal anastomosis has been proposed as an ultimate alternative for proctectomy and definitive ostomy in selected patients. However in the long term, perianal Crohn’s disease represents a more aggressive pattern of the disease and up to 25% of patients (even more when proctitis is present) ultimately undergo proctectomy as a last resort to improve quality of life.

Clinical relapse followed a constant pattern: inflammation at the stoma site with proximal extension. This mimics the recurrence pattern of ulcerative colitis when a subtotal sigmoid colectomy is performed.
colectomy is performed, as described in some older case series. A complete proctocolectomy is therefore the operation of choice for ulcerative colitis. There is no unequivocal explanation for the ulcerative colitis like behavior of the distal colonic part in CD patients.

It remains to be determined whether resections for Crohn’s colitis could be segmental or have to be more extensive. In our center a more restrictive surgical approach has been in use for Crohn’s colitis, performing a segmental colectomy for localized disease, even in the presence of anal involvement. The incentives to retain a part of the colon and to perform a colostomy instead of an ileostomy are a significant reduced stoma output and the related problem of dehydration, a reduced risk for peristomal skin problems and a presumed better quality of life. Tekkis et al. published a meta-analysis including 488 patients, comparing segmental colectomies with total colectomies and ileorectal anastomosis for patients with a segmental affection by Crohn’s disease. They found no significant difference in recurrence rate between these two procedures, however, segmental resection patients showed an earlier recurrence. We must emphasize that this meta-analysis is based on a rather small series, gathering patients from 1948 to 1998. In contrast, Kiran et al. analyzed 108 patients between 1995 and 2005 comparing the recurrence free survival and the stoma free survival of CD patients with segmental colonic involvement undergoing a segmental colectomy or a total colectomy with ileorectal anastomosis.

In this series, patients with segmental colectomies had a significantly reduced recurrence free survival but no reduced stoma free survival. Segmental colectomy was not an independent risk factor for recurrence. They suggest, however, to perform a proctocolectomy with Brooke ileostomy in patients with severe perianal disease, even if perianal disease was not retained as risk factor in their multivariate analysis. They conclude that only a well-localized colonic disease is an indication for segmental resection.

Surgical recurrence in patients with Brooke ileostomy for Crohn’s colitis is only about 35% (+/- 10%) at 20 years follow-up. However in patients with ileocolitis and ileal involvement prior to the ileostomy, a surgical recurrence rate of 74% (+/- 7%) at 20 years follow-up has been noted. It seems that the site of initial disease plays a role in the recurrence pattern. Therefore in all patients with colo-proctitis and anal disease, proctocolectomy with definitive ileostomy seems to be the surgery of choice. The small bowel recurrence rate requiring surgery after performing either a colectomy with ileorectal anastomosis, a colectomy with end-ileostomy or a proctocolectomy seems to be as low as 20% after 10 years. Only the presence of terminal ileal disease before performing a colectomy seems to increase the rate of ileal disease. This confirms the hypothesis that the recurrence rate after surgery is influenced by the initial disease localization.

An increased relative risk for surgical recurrence has also been described when anal disease was present before surgery. Anal disease seems indeed to be an independent risk factor for development of recurrent disease, in series comparing several different types of colonic resections. All our patients had anal disease, which placed them at risk for recurrence.

5. Conclusion

In patients with anorectal CD proctectomy with end-colostomy is ineffective surgery resulting in early severe recurrence in the proximal colon and disabling peristomal cutaneous lesions. Most patients will require completion colectomy with end ileostomy. It is therefore concluded that patients with anorectal CD who need proctectomy should undergo proctocolectomy with end ileostomy despite the absence of proximal colonic involvement.

References


