RESTORATIVE PROCTOCOLECTOMY WITH ILEAL POUCH-ANAL ANASTOMOSIS FOR SEVERE ULCERATIVE COLITIS IN RURAL NEPAL

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ABSTRACT

For most patients with ulcerative colitis (UC) requiring surgery, restorative proctocolectomy (RP) may be the operation of choice. By using an ileal pouch-anal anastomosis, it offers a curative operation with no need for a permanent ileostomy. We present a 16 year-old boy from a remote village with chronic UC which failed to respond satisfactorily to maximal medical therapy. We opted for elective surgery because he was unlikely to comply with long-term medical therapy and surveillance, nor to survive if he came to emergency surgery in our setting. RP was performed and he recovered well. His bowel habit was better than the 5 or 6 motions per day that is typical following this procedure. Where the expertise is available, the operation can be performed and any complications managed, using only the basic facilities available in most district hospitals. We present this case as an example of the “one-hit medicine” approach that is often required in our context. We suggest that RP may occasionally be indicated for UC in rural Nepal, where the alternatives carry relatively greater disadvantages.

Key Words: *Restorative proctocolectomy, ileal pouch-anal anastomosis, ulcerative colitis, appropriate technology.*

INTRODUCTION

For most patients worldwide with ulcerative colitis (UC) requiring surgery, restorative proctocolectomy (RP) is the operation of choice.¹ The procedure involves a panproctocolectomy and the formation of an ileal pouch-anal anastomosis (IPAA), thereby creating a neorectal reservoir and avoiding the need for a permanent end ileostomy.

RP is indicated for chronic UC which fails to respond satisfactorily to intensive medical therapy. In addition, a completion proctectomy with IPAA may be indicated in patients who have previously undergone urgent subtotal colectomy for acute severe UC, provided the proctitis has since come under control. However IPAA should not be performed during an episode of acute severe UC for fear of anastomotic dehiscence. The surgical options in the management of UC

are listed in table I, showing how RP can be a one- two- or three-stage procedure. Where expertise in pouch surgery is unavailable, proctocolectomy may be done, but preserving the anal stump with a view to an IPAA in the future (see table I, “chronic UC”, (d)).

Since its description in 1978,² RP has been simplified.¹ Early pouches were of an “S” shape (see fig.1), and all the columnar epithelium from the anorectal transition zone was removed.²⁻⁴ More recently the transition zone has been preserved by some surgeons because of its importance for continence,⁵ and we now know the risk of dysplasia in the remaining cuff of columnar epithelium is negligible.⁶ Most pouches are now made “J” shaped, which has the advantage that it can be either hand-sewn or stapled. Function is slightly better with a W-pouch, but it is more technically demanding.⁷

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CASE REPORT

A 17 year-old boy from remote Palpa district presented at our 131-bed general hospital in Western Nepal, with a 2 year history of bloody and mucous diarrhoea, with associated low grade fever, malaise and weight loss. He was pale (packed cell volume 34%) with finger clubbing and on digital rectal examination there were multiple rectal polyps. Stool examination showed red blood cells and pus cells but no parasites. Flexible colonoscopy revealed proctocolitis extending from rectum to hepatic flexure, with multiple polyps, maximal in the rectum and sigmoid colon. Biopsies on this and 2 subsequent sigmoidoscopies each revealed heavily inflamed mucosa with crypt abscess formation, and inflammatory pseudopolyps, thus clinching the diagnosis of UC. On one occasion mild epithelial dysplasia was also seen.

Two consecutive one-month courses of sulphasalazine and oral prednisolone were given, without satisfactory response. Topical steroid enemata were not readily available. After counseling, the patient and family opted for RP.

At operation panproctocolectomy was performed, excising the rectum with perirectal fat en bloc, but preserving the anal canal and a short cuff of columnar epithelium. A totally stapled J-pouch-anal anastomosis was fashioned (see figure 1) (TLC75 and RL30 staplers, Ethicon, Edinburgh, UK) and a temporary loop ileostomy was placed. Histopathology confirmed the diagnosis. Postoperatively he did well, on a reducing regime of prednisolone.

After closure of the ileostomy 6 weeks later, he initially required loperamide for diarrhoea, but on review at 2 months his stool frequency was only thrice daily and all drugs were stopped.

Table I : The surgical options in the management of chronic and acute severe UC, not responding to medical therapy

Chronic UC			
	Stage 1	Stage 2	Stage 3
a)	Panproctocolectomy + end ileostomy*		
b)	RP (proctocolectomy + IPAA)		
c)	RP + loop ileostomy	Closure of ileostomy	
d)	Proctocolectomy leaving anal stump + end ileostomy*	IPAA	Closure of ileostomy
Acute severe UC**			
	Stage 1	Stage 2	Stage 3
a)	Subtotal colectomy + end ileostomy* +/- mucous fistula		
b)	Subtotal colectomy + end ileostomy* +/- mucous fistula	Completion proctectomy leaving permanent ileostomy*	
c)	Subtotal colectomy + end ileostomy* +/- mucous fistula	Completion proctectomy + IPAA	
d)	Subtotal colectomy + end ileostomy* +/- mucous fistula	Completion proctectomy + IPAA + loop ileostomy	Closure of ileostomy

* Instead of a simple Brooke ileostomy, a Kock continent ileostomy may be fashioned, either at the initial operation or subsequently.

** Acute severe UC with megacolon and/or haemorrhage, failing to settle within 48 hours on medical therapy, or complicated by perforation.

Fig.1 : The commonest configuration of ideal pouch is the J-pouch (a), which is most often stapled but may be hand-sewn. Others are the S-pouch (b) and the W-pouch (c), which are usually hand-sewn.

DISCUSSION

In ulcerative colitis that does not respond well to medical treatment, proctocolectomy may be indicated for several reasons. Firstly, there are the symptoms (diarrhoea, malaise, cachexia and anaemia). Secondly, there are disadvantages of long-term medical therapy, including side-effects. Thirdly, there is the risk of cancer in the chronically inflamed colon (2% at 10 years, 8% at 20 years and 18% after 30 years of colitis⁸). Periodic surveillance colonoscopy is normally recommended after 10 years of colitis.⁹ Fourthly, there is the risk of developing acute severe colitis and coming to emergency surgery, which carries higher morbidity and mortality than elective surgery.¹⁰⁻¹²

In our setting, one might think we should be slow to undertake such major surgery. But on the contrary, the above reasons led us to adopt a lower threshold for surgery than we would elsewhere. It would have been difficult for this boy to comply with long-term medical therapy and surveillance colonoscopies. The dysplasia already reported on his first biopsy may have been significant. Charity funding was available to him for treatment in the short term, but not the long term. In addition, the risk of coming to emergency surgery was a greater concern than it would be elsewhere. In the UK, USA and Sweden, the mortality from emergency colectomy has fallen from 20-30% in the 1960's to less than 1% in the 1990's.¹⁰⁻¹² However in our location, with a tendency towards late presentation, and without full critical care facilities, the mortality may be more like that of 40 years ago in the West.

All of these other factors weighed in favour of elective surgery. This is typical of the "one-hit medicine" approach so often required in this population.

When choosing the operation, the advantages of doing an RP are obvious, especially for a young man in Nepali village life. However it is not the best option for everyone.¹³ In a recent series median stool frequency with a J-pouch, and Western diet, was 5 per day (range 2-16) and 1 per night (0-4).¹⁴ 43% of patients had to take regular antidiarrhoeal medication and 25% described a minor degree of incontinence. Therefore some patients, especially the elderly or those with damaged sphincters, may prefer a permanent ileostomy.

Common early complications of an IPAA are small bowel obstruction (11-26%), pouch/anastomotic leakage with pelvic sepsis (3-15%),¹⁴⁻¹⁷ pouch ischaemia or pouch haemorrhage. Obstruction usually settles with conservative management.^{15,18} Similarly pouch leakage can be managed with antibiotics and drainage of any collection, provided there is a defunctioning

ileostomy in place.¹⁵ However rates of pouch salvage after pelvic sepsis are highly variable (11-100%)¹⁴⁻¹⁷ and good long-term function is less likely.¹⁵ For this reason most surgeons routinely use a temporary loop ileostomy in all cases, despite its associated morbidity. Usually the diagnosis of pouch leakage is made by contrast radiology, but in the absence of this modality we would merely perform relaparotomy and open drainage in the event of signs of pelvic sepsis in the first 2 postoperative weeks.

Long-term complications include: pouchitis (a non-specific inflammation in the pouch), anastomotic stenosis, vitamin B₁₂ deficiency, pouch bacterial overgrowth, and dehydration during coincidental dysentery.¹⁴ These are readily treatable, and our patient was given an advice sheet for hospital and health-post staff.

Overall pouch failure rates in the literature range from 6-18%.¹⁴⁻¹⁷ Most are early failures.¹⁵ In a typical series late failure occurred in 6% of patients,¹⁴ but most of these were related to unsuspected Crohn's disease, which is less of a risk in the Nepali population. One of the beauties of this procedure is the safe "fall-back position", whereby if the pouch fails it can be simply removed and the patient given a permanent end ileostomy, which is the same outcome as would otherwise have been.

We propose that elective RP may occasionally be indicated for patients with severe chronic ulcerative colitis in rural Nepal, though only where appropriate medical therapy has failed, since the operation does carry significant morbidity and mortality. The operative technique and management of complications require considerable expertise, but use only the basic technology available in most general hospitals. It is a good example of the aggressive "one-hit" approach that is often required in our setting. The service cannot be described as sustainable unless the caseload can be concentrated on a few trained and experienced surgeons. Therefore, where the expertise is available, routes of tertiary referral should be open to all patients, especially those from remote areas and poor socio-economic backgrounds. For them the alternatives – permanent ileostomy, long-term medical management and surveillance, or emergency surgery – carry greater disadvantages.

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