

Pouches and stomas

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Abstract

Colectomy for ulcerative colitis can be followed by ileal pouch formation to enable restoration of bowel continuity. Patients with familial adenomatous polyposis may also undergo pouch formation. The most common long-term problem with pouches is pouchitis, though this can often be treated with antibiotics. Stomas come in many forms but the most common types are ileostomy or colostomy, both of which can be permanent or temporary. The indications and complications of each are discussed. The expertise of a stoma nurse is vital to the management of these patients.

Keywords Adenomatous polyposis coli; colostomy; ileal pouches; ileo-anal pouches; ileostomy; J pouch; pouchitis; restorative proctocolectomy; ulcerative colitis

Pouches

A pouch, or more correctly an ileal pouch anal anastomosis (IPAA), is formed during a restorative proctocolectomy. In this operation, the entire colon plus rectum from the ileocaecal valve to 2 cm above the dentate line are removed. An ileal pouch is constructed from the terminal ileum, which is then anastomosed to the anorectal remnant. This operation was first described in 1978,¹ since which time it is estimated that over 30,000 pouches have been formed worldwide.

Indications for pouch formation

Pouch formation is offered to suitable patients who require a proctocolectomy and would prefer to have bowel continuity rather than a permanent ileostomy. The decision to have a pouch rather than a stoma is entirely a matter of patient preference.

The most common underlying pathologies that may lead to formation of a pouch are ulcerative colitis (UC) and familial adenomatous polyposis (FAP); although pouches have been performed for patients with Crohn's colitis (CD) and indeterminate colitis, they are much less commonly used in patients with these conditions.

Ulcerative colitis

Up to 20% of patients with UC eventually require colectomy, which may be undertaken in the acute or elective setting depending on the circumstances. Acute severe colitis with failure to respond to medical therapy usually requires an urgent colectomy. Patients with chronic colitis refractory to medical management, or patients with dysplastic or malignant transformation

may require an elective colectomy. The risk of malignant transformation is related to the degree and extent of inflammation in the colon, and is increased by the presence of post-inflammatory polyps or colonic strictures, primary sclerosing cholangitis or a family history of colorectal cancer.² It has been estimated that 18% of patients found to have UC will develop cancer within 30 years from diagnosis.³

Familial adenomatous polyposis

FAP is an autosomal dominant condition in which a defect in the adenomatous polyposis gene leads to at least 100 colonic polyps forming in the colon. This can occur as early as the teenage years, with the potential for cancer change by the mid-twenties. As it is not possible to remove all the polyps endoscopically, a prophylactic colectomy has to be performed, usually before the age of 25 years.

Crohn's disease

CD used to be an absolute contraindication to pouch formation because it has been associated with high pouch failure rates of up to 50%.⁴ However, it may be successful in patients who have disease confined to the colon.

Indeterminate colitis

Indeterminate colitis or inflammatory bowel disease unclassified (IBDU) is the pathological description given to the 5–10% of patients in whom histopathology cannot distinguish CD from UC. If there is no radiological or histological evidence of Crohn's disease, IBDU tends to behave like UC with pouch failure rates of 10% at 10 years.⁵ However, with careful preoperative assessment to exclude features linked to CD, a good outcome can be achieved.⁴

Pouch surgery

Surgery is usually undertaken in stages because of the concern about complications with a single-stage procedure, particularly in the urgent setting with acute severe colitis. Although some centres have demonstrated that it is possible to perform a single-stage procedure on selected patients,⁶ the majority undergo a staged procedure to mitigate against the complication of anastomotic leak, which can subsequently lead to pouch dysfunction and failure.

Two-stage surgery

If the patient is having the pouch for chronic UC refractory to medical treatment, or for FAP, surgery is performed in two stages. The first stage involves a panproctocolectomy, ileal pouch formation and a defunctioning loop ileostomy. The second stage – closure of the loop ileostomy – is performed around 3 months later after a pouchogram has shown no leak at the anastomosis.

Three-stage surgery

If the colectomy is being performed for acute severe colitis, the procedure is performed in three stages. The first stage involves subtotal colectomy and end ileostomy, the rectum being left untouched. Several months later, when the patient no longer requires corticosteroids, the inflammatory response has resolved and nutritional status has returned to normal, the second stage is performed which involves a completion proctectomy, pouch

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formation and defunctioning loop ileostomy. Finally, as with the two-stage approach, the loop ileostomy is subsequently closed.

Rectal division versus mucosectomy

The rectum is usually divided a few centimetres proximal to the dentate line, leaving a cuff of rectal mucosa to enable a stapled anastomosis. Maintaining a short segment of rectum also results in better sensation and causes less damage to the sphincter, leading to a better functional outcome.⁷ However, some patients experience symptoms related to recurrence of UC in the retained rectal cuff known as cuffitis, and there has been concern that this residual segment of rectal mucosa might retain the potential for malignant transformation. The alternative is to perform a mucosectomy (stripping the mucosa off the underlying bowel muscle) and form a hand-sewn ileal pouch anal anastomosis, but this procedure has been associated with increased septic complications in some studies.⁸ A meta-analysis has shown no difference between the two anastomotic techniques in terms of short-term complications;⁹ the stapled technique leads to a better functional outcome, whereas the hand-sewn technique leads to fewer symptoms associated with a residual rectal cuff. Moreover, in the Cleveland series of pouches, mucosectomy was not protective against pouch neoplasia in IBD patients.¹⁰

Pouch configuration

J pouch: this is the most common type of pouch formed today. The end of the ileum is stapled closed and the small bowel looped back on itself to create a 'J' that is 20 cm long. An opening is made in the apex of the 'J' to allow the passage of a 10-cm long linear stapler. This is fired twice, converting the parallel lumens into one large lumen. The apex is then anastomosed to the rectal remnant (Figure 1).

W pouch: here, the small bowel is looped three times so that four lengths of small bowel lie next to each other. These are then joined together to form a pouch. The intention of this design is a large reservoir size, allowing less frequent pouch emptying, but in our practice we have found a J pouch quite adequate in this respect.

A randomized study comparing J pouch with W pouch configuration¹¹ demonstrated no functional advantage to the W pouch and concluded that the J pouch, which is easier to construct, is the optimum design.

S pouch: this was the first pouch to be described. Here, the most distal part of the small bowel is anastomosed to the anus, the pouch being just proximal. This pouch frequently led to problems with pouch emptying and has fallen out of favour.

Laparoscopic versus open surgery

Laparoscopic surgery has been shown to have short- and long-term benefits over open colorectal surgery,¹² and this approach is increasingly being used during initial colectomy in the acute setting. A consequent increase in use of the laparoscopic approach for pouch surgery¹³ has confirmed its feasibility, and has led to a reduction in the complications of open surgery, such as adhesion formation and incisional herniation.¹⁴ However, if difficulties are encountered using this approach, it is important to convert to open operation, as leaving a long rectal stump is associated with a poorer long-term outcome.

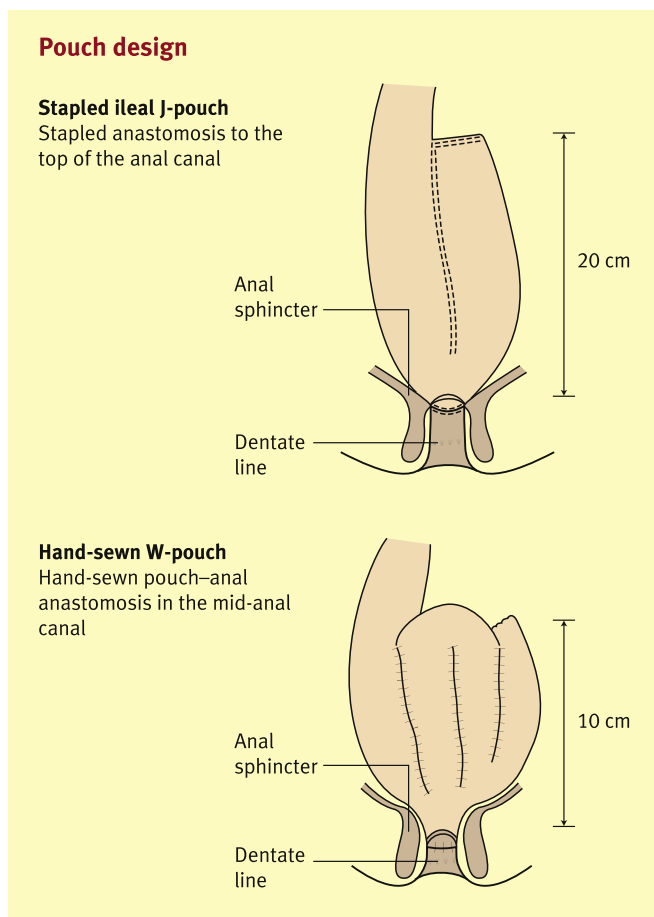


Figure 1

Normal pouch function and quality of life

A mature well-functioning pouch will empty 5–6 times per 24 hours (Figure 2). The contents are liquid, though after the pouch has been in place for some years the effluent may

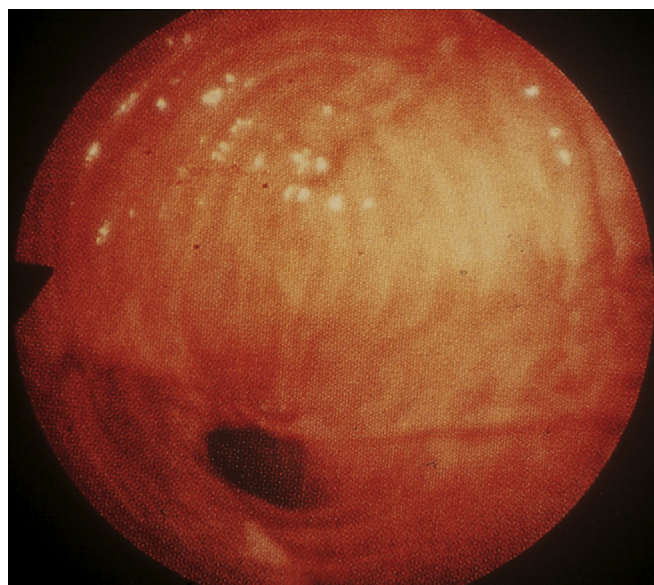


Figure 2 Endoscopic view inside a normal, healthy pouch. The seam of one of the vertical stricture lines in this J pouch can be seen (lower left).

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