

ADVANCES IN IBD

Current Developments in the Treatment of Inflammatory Bowel Diseases

Section Editor: Stephen B. Hanauer, MD

Postoperative Complications of Ileal Pouch–Anal Anastomosis for Ulcerative Colitis

Bo Shen, MD
Staff Physician
The Cleveland Clinic Foundation

G&H When are ileal pouch–anal anastomoses performed?

BS Ileal pouch–anal anastomosis (IPAA) is the surgical treatment of choice for patients with ulcerative colitis (UC) and for familial adenomatous polyposis (FAP) after colectomy. In approximately 25–30% of patients with UC, the colon and rectum will need to be removed (total proctocolectomy) if they fail medical therapy or develop dysplasia or cancer.

Before the invention of the IPAA procedure, a patient had to have an ileostomy after proctocolectomy, in which the distal small bowel was connected to an opening in the abdominal wall and a plastic bag was used to catch the stool. Obviously this strategy was not ideal, since there are psycho-socioeconomic issues related to the need to carry a bag, and most patients are fairly young when they have the surgery. In 1978, a group of physicians in England began using the IPAA surgical technique. With this approach, after the colon is removed approximately 20–30 cm of the last segment of the small intestine, known as the terminal ileum, is fashioned into a J-shaped reservoir, or an ileal pouch. This pouch is linked to the anus, eliminating the need for the exterior plastic bag. Multiple studies have demonstrated that this approach is very beneficial and improves health-related quality of life, and it has become the surgical treatment of choice following total proctocolectomy, unless there is a contraindication.

G&H What short-term complications are associated with IPAA?

BS Short-term complications generally occur within days or weeks after the pouch surgery. These complications include development of an abscess, sepsis, stricture of the

pouch–anal anastomosis, and pouch leaks. Postoperative ileus and portal vein thrombosis may also occur. In general, these short-term complications are easily treated.

G&H What long-term complications can occur following IPAA?

BS Pouchitis, a nonspecific inflammatory condition of the ileal pouch, is the most common long-term complication. Patients may also develop Crohn's disease (CD) of the pouch, which may occur weeks or even years after surgery; I recently treated several patients who developed CD of the pouch more than 10 years after initial pouch surgery. They had preoperatively been diagnosed as having UC and were healthy for many years after IPAA until they developed CD.

Another long-term complication is cuffitis, an inflammatory condition of the rectal columnar cuff. In order to reduce tension in the pouch–anal anastomosis, surgeons often leave 1–2 cm of the previously inflamed or noninflamed rectal columnar cuff of UC linked to the pouch. The cuff can become inflamed following IPAA. Cuffitis can be considered a form of residual UC.

Irritable pouch syndrome (IPS), a form of irritable bowel syndrome affecting IPAA recipients, may also occur. Patients typically experience similar symptoms to pouchitis, CD, or cuffitis, such as diarrhea and abdominal cramps. With a grant from the National Institutes of Health, we recently conducted a physiology study in a group of patients with IPS. There was evidence of visceral hypersensitivity on electronic barostat examination.

A small proportion of men experience sexual dysfunction following the pouch surgery, and up to 50% of women may experience decreased fertility. Thus, while there are many benefits of IPAA, including significant improvement in quality of life, there are also potential complications of which patients and physicians must be aware.

Without a doubt, total proctocolectomy with IPAA significantly reduces the risk for dysplasia or cancer in patients with UC. However, there is still a small but significant risk for dysplasia in patients with IPAA. Typically dysplastic lesions are detected in the rectal cuff mucosa and rarely they are seen in mucosa of the ileal pouch. Therefore, yearly surveillance pouch endoscopy with biopsy is recommended.

G&H Why do these long-term complications, particularly pouchitis, occur?

BS The main reason pouchitis occurs following IPAA is that normally the small bowel has a separate function from that of the large bowel. The small bowel absorbs nutrients, while the large bowel serves as a storage area that is exposed to a large quantity of bacteria; in fact, 40% of the stool is composed of bacteria or bacteria products. The small bowel is normally relatively free of germs. With IPAA, the small bowel is converted into an “artificial rectum,” and the creation of the pouch reservoir can lead to fecal stasis and bacterial overload, which can in turn lead to several problems.

A common theory is that this condition is due to a loss of bacterial balance, with either too many bad bacteria or too few good bacteria. However, loss of bacterial balance is not the sole cause of pouchitis. Fecal stasis and bacterial overload occur in both IPAA patients with underlying UC and patients with underlying FAP. Of note, pouchitis occurs almost exclusively in IPAA patients with UC and it rarely occurs in patients with underlying FAP in whom fecal stasis and bacterial overload are also present. Thus it may be that some genetic or systemic factor also plays a role in the pathogenesis of pouchitis. Studies to identify such a factor have not been conclusive so far.

For the most part, the causes are not known. Our group has been conducting extensive research in this area. While pouchitis is considered a nonspecific inflammation of the pouch in most cases, specific causes can be identified in some patients. *Clostridium difficile* or cytomegalovirus infection can cause pouchitis. In others, pouchitis may be caused or exacerbated by the use of nonsteroidal anti-inflammatory drugs (NSAIDs). Ischemic pouchitis may also occur with characteristic endoscopic features of segmental disease and sharp demarcation of disease-involved areas.

G&H Are certain risk factors associated with the development of long-term complications?

BS Risk factors are another area of active investigation. Some studies have found that extraintestinal manifestations (such as arthralgias and primary sclerosing cholangitis), being a nonsmoker, or NSAID use may be risk factors. The presence of extensive UC disease prior to surgery and backwash ileitis may also be associated with pouchitis. Importantly, these conditions have been identified only as being associated with pouchitis, and not necessarily as causes. Some of the risk factors are modifiable, such as avoidance of NSAIDs.

G&H Have any studies been done that might assist clinicians in predicting which patients are most likely to experience long-term complications?

BS The majority of the studies conducted thus far are retrospective, and prospective studies are warranted. There is an ongoing prospective study at our institution to develop predictor models for long-term postoperative complications. In the future, we may be able to quantify risk factors for individual patients undergoing surgery and predict his or her surgical outcome.

G&H What are the symptoms of pouchitis?

BS The common symptoms of pouchitis are diarrhea, abdominal cramps, anal discomfort, and urgency. It is important for physicians to be aware that these symptoms do not necessarily indicate pouchitis, and that an endoscopy is required in order to confirm the diagnosis. We conducted a study to evaluate what percentage of patients presenting with these symptoms had pouchitis and found that it was the underlying cause in approximately 50% of patients. In the remaining half of patients, IPS or cuffitis was responsible.

G&H How is pouchitis treated?

BS There are 2 approaches to diagnosing pouchitis: treat first or test first. With the treat-first approach, a physician would prescribe an antibiotic (typically ciprofloxacin or metronidazole) based on the symptoms reported by the patient. If the patient responds, the diagnosis of pouchitis is assumed. Alternatively, the physician would first conduct an endoscopy following the reporting of symptoms in order to find out whether pouchitis is present. We conducted a study to determine which of the above approaches was more cost-effective. According to our findings, conducting a pouch endoscopy without biopsy following symptom presentation is the most cost-effective approach for diagnosing pouchitis. Practically speaking, if a patient lives in situations where he or she is not able to make an immediate clinical visit, prescribing antibiotics is a feasible approach, assuming that not all patients with symptoms responding to antibiotics necessarily have pouchitis. Patients with proximal small bowel bacterial overgrowth who may have similar clinical symptoms to pouchitis can also respond to antibiotic therapy.

These pouch diseases are treatable in the majority of patients. The most common treatment for pouchitis is
(Continued on page 205)