Total Proctocolectomy with J-pouch Reconstruction for Ulcerative Colitis

Colorectal surgeons at Penn Medicine are performing total proctocolectomy with J-pouch reconstruction/intestinal pouch anal anastomosis (IPAA) for patients with ulcerative colitis (UC).

The introduction of technical changes to IPAA in recent years has made it a much better tolerated surgery, with improved outcomes and faster recovery than was formerly possible. In selected individuals, the procedure replaces total proctocolectomy with end ileostomy, and allows for the retention of gastrointestinal continuity—a major concern for all patients.

Emergent indications for surgery in UC include acute flares refractory to medical control; sudden severe disease manifesting as uncontrolled bleeding in the colon; toxic megacolon; and perforation of the bowel. IPAA is considered the surgery of choice for UC, which (unlike Crohns' disease) may be cured by removal of the diseased colon and rectum.

At Penn Colon and Rectal Surgery, elective total proctocolectomy with J-pouch (IPAA) for UC is offered to patients who have pre-cancerous or dysplastic colonic mucosal changes, and to patients who are refractory to medical management with intolerable symptoms such as frequency, pain and urgency leading to a progressive decline in quality of life. Because the rate of synchronous or subsequent adenocarcinoma ranges from 10%-50% in this population, both high- and low-grade dysplasia constitute indications for proctocolectomy.

At Penn Medicine, total proctocolectomy with J-pouch reconstruction is now available as open, laparoscopic, or robotic-assisted surgery. The procedure is most often performed in either two or three stages depending on the condition of the patient. Three-stage procedures are performed for acutely or chronically ill malnourished individuals, patients on high doses of immunosuppressive medications, or those who present emergently with the indications for surgery listed above.

The first stage is a total colectomy with preservation of the rectum and end ileostomy in the right lower quadrant of the abdomen (Figure 1). This can be performed as an open or minimally-invasive surgery, depending on the clinical situation. Sparing the rectum in these circumstances is important. Proctectomy is often the most technically challenging portion of the procedure. Performing this part of the operation in a well-nourished, healthy, immunocompetent individual reduces morbidity and makes J-pouch creation safer by improving outcomes and reducing septic complications.

The second part of the procedure occurs about 3-4 months later depending on the patient's performance status. This step involves removal of the rectum, creation of the J-pouch from the terminal ileum (about 20 cm) and temporary loop ileostomy to divert the fecal stream proximal to the J-pouch (Figure 2).

About two months after J-pouch creation (after the pouch is checked via gastrograffin enema for leaks, sinus tracts or defects) the loop ileostomy is closed through a small peristomal incision.

Two stage procedures are done frequently in well-nourished patients who present electively for proctocolectomy for indications such as dysplasia or failure of medical management. In the 2-stage approach, the 1st stage consists of removal of the colon and rectum and simultaneous creation of the J-pouch, along with a diverting loop ileostomy. The 2nd stage is ileostomy closure. Patients are screened for malnutrition, and are asked to stop anti-TNF therapy about one month in advance of the procedure. Prednisone doses higher than 20mg/day have been associated with J-pouch leaks/complications; thus consideration for a three stage procedure is warranted if higher doses of steroids are required.

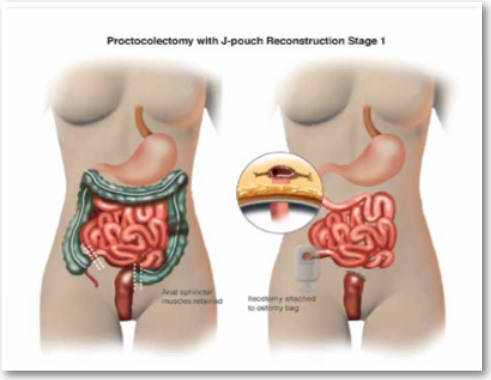

Figure 1: In the first stage of proctocolectomy with J-pouch reconstruction surgery, the colon is removed with retention of the anal sphincter muscles and rectum, which effectively serve as a "place-holder" in the pelvis, preventing adhesions and scarring that can make J-pouch creation and placement difficult. A temporary ileostomy is placed through the right lower quadrant abdominal wall.

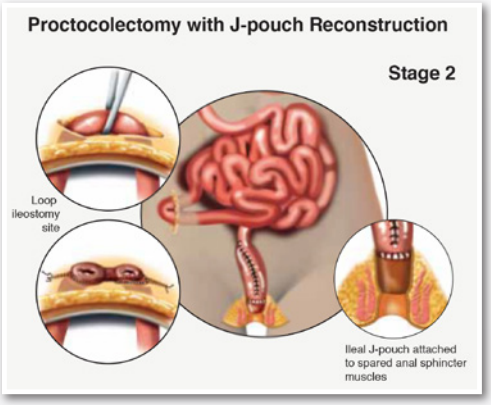

Figure 2: During stage 2, the rectum is removed and a J-pouch is formed as a reservoir from the end of the terminal ileum. The J-pouch is attached to the top of the anal canal with all sphincter muscles spared and functional. A temporary ileostomy is performed. This stage is usually accompanied by a 3-4 day hospitalization. At stage 3, the loop ileostomy is closed through a small peristomal incision.

CASE STUDY

Mr. V, a 37-year-old with medically refractory ulcerative colitis, was referred to Penn Medicine for evaluation. A review of his medical history revealed that Mr. V's disease began in his late teens. At this time, his symptoms included bloody diarrhea, bloating, acute pain and cramping.

Continued on back

CASE STUDY 1 *Continued from front*

In the decades since, his UC had responded for varying periods of time to mesalazine, azathioprine, prednisone and finally, infliximab. Each medication brought about a remission followed by a gradual return of symptoms and flare-ups, the most recent of which was attended by 20 to 30 bowel movements a day, dramatic weight loss and hospitalization.

At the time of admission, Mr. V was taking infliximab every two weeks, and was on 30 mg prednisone daily. After a consultation to discuss further medical therapy with other anti TNF-alpha alternatives, it was discovered that Mr. V had considered surgery, but was reluctant because he felt he was too young for an ileostomy. After counseling, and in consultation with the Division of Gastroenterology, there was agreement that Mr. V would have a total proctocolectomy with J-pouch reconstruction, and that his acute presentation, relative malnutrition and immunosuppression mandated that the surgery proceed in three stages.

Mr. V returned home two days after the initial step (laparoscopic subtotal colectomy with temporary end ileostomy) in the three-step procedure. In the next four months, he gained almost twenty pounds while gradually weaning himself from prednisone. His sleep improved and for the first time in several years, he was able to begin moderate exercise. Returning for the proctectomy and creation of the J-pouch and temporary loop ileostomy, Mr. V spent another three days in the hospital, then returned home. Two months later his ileostomy was reversed.

Today, at a year post-surgery, he has between four and six bowel movements a day, with perfect control. He is exercising regularly, eating previously forbidden foods and has no activity restrictions or limitations.

FACULTY TEAM

The Colon and Rectal Surgery Program at Penn Medicine provides the highest quality diagnostic and surgical options for patients with colon, rectal and anal cancer, inflammatory bowel disease (Crohn's disease and ulcerative colitis), diverticular disease and many other diseases of the colon, rectum and anus. The division offers sphincter-preserving colon and rectal surgery for cancer and benign diseases, laparoscopic and robotic colorectal surgery, treatment for fecal incontinence and rectal prolapse and both operative and medical therapies for anal diseases.

Performing Total Proctocolectomy and J-Pouch Reconstruction for Ulcerative Colitis at Penn Medicine

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