

LOS ANGELES

COLON AND RECTAL SURGICAL ASSOCIATES

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Operative Intervention In Crohn's Disease

When medical treatment is not enough.

Inflammatory bowel disease, specifically Crohn's disease and ulcerative colitis, is thought to result from an abnormal immune regulatory process. Whereas ulcerative colitis is a mucosal inflammation confined to the colon, Crohn's disease may involve transmural inflammation of any portion of the intestinal tract from the mouth to the anus.

Non-caseating granulomas are the hallmark pathological finding in Crohn's disease. Common symptoms such as diarrhea, abdominal pain or weight loss may be controlled using a variety of medications

including antidiarrheal medications, 5-aminosalicylates, steroids, immunosuppressive agents, or anti-tumor necrosis factor antibodies.

THE ROLE OF THE SURGEON

Because of the chronic, recurring nature of Crohn's disease, operative intervention is generally reserved for symptomatic disease refractory to medical therapy, the presence of biopsy-proven dysplasia or malignancy, or in emergency situations

such as toxic megacolon, perforation or uncontrolled hemorrhage. Additionally, operative intervention may be needed in treating intestinal obstruction or stricture formation secondary to full thickness inflammation. Fistula formation between the diseased segment of intestine and an adjacent structure such

as another intestinal segment, the vagina or the bladder usually requires operative treatment as well.

Generally, one third of Crohn's patients have disease confined to the colon. One third of patients with Crohn's disease have

disease confined to the small bowel. One third of patients may have disease involving multiple areas of the intestinal tract. The terminal ileum is the most commonly affected region. There may also be several areas of active disease with intervening portions of normal bowel. These normal areas may become active in the future. In order to avoid a short-bowel syndrome or other post-surgical complications, the experienced surgeon

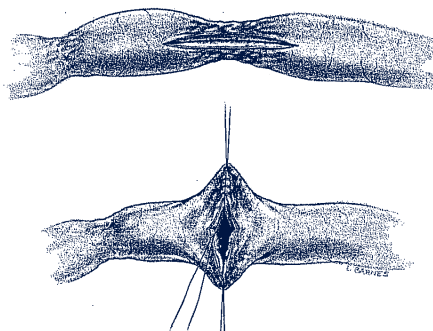


Fig. 1 Strictureplasty
Top: longitudinal stricture incision
Bottom: transverse stricture repair

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must attempt to take a minimalist approach and remove or repair only that portion of the intestine necessary to remedy the problem.

STRICTURE

Due to the transmural inflammatory nature of Crohn's disease, many patients with small bowel pathology are at risk for developing strictures. These are typically short segments of fibrosis of the bowel wall that may cause a partial intestinal obstruction. Because of the fibrotic nature of the stenosis, medical therapy is unlikely to be successful. When obstructive symptoms progress, surgical intervention is indicated. As with all cases of Crohn's disease, resection of the diseased bowel is avoided if possible and one or more stricturoplasties are performed. The strictured bowel is opened longitudinally across the stricture and then closed in a transverse fashion in an attempt to avoid compromise of the intestinal lumen, while preserving intestinal length (figure 1). Segmental resection is performed only if there are multiple strictures in close proximity to each other or if there is active inflammatory disease in the area. Interestingly, Crohn's disease does not redevelop in areas of stricturoplasty. However, adjacent bowel may develop active disease.

FISTULA

Microperforations, the result of long-standing transmural disease, may become walled off by adjacent organs. Fistula formation between the diseased segment of intestine and the adjacent structure may result. The fistula most commonly involves adjacent loops of small bowel, colon, bladder or vagina. In certain situations, the fistula can be managed medically, but may ultimately require surgical intervention. Fistulas often remain open and active around a point of distal obstruction. The fistula may actually be beneficial in decompressing the obstruction. Preoperative evaluation is required to elucidate the pathological anatomy. In cases of distal obstruction, continued medical therapy (usually with infliximab), may actually be deleterious in that the medical treatment may close the fistula, leading to a now symptomatic obstruction. Surgical treatment is aimed at dividing the fistula, resecting the inflamed bowel and simply closing the opening into the adjacent structure.

PERINEAL DISEASE

Surgical management of anal and peri-anal Crohn's disease is complex and once again, a minimalist approach is advised given the propensity for postoperative complications that may arise as a result of operative intervention. Typically, medical management is attempted and operations are reserved for management of infectious complications such as an abscess or a fistula. Peri-anal abscesses may be surgically drained and any resultant fistulas managed expectantly with placement of

setons to prevent re-accumulation of purulent fluid. Medical therapy is then maximized to control the underlying disease. For peri-anal fistulas, mucosal advancement flaps and fibrin glue or collagen plug insertion into the fistula may be attempted after the active disease is controlled. However, failure rates may exceed sixty percent. In severe, unrelenting anal or peri-anal disease that is unresponsive to maximum medical therapy, proximal diversion with an ileostomy or even an abdominoperineal resection and permanent stoma formation may be required.

REFRACTORY DISEASE

Refractory inflammatory colonic Crohn's disease may be treated initially with a simple diverting ileostomy. This may allow the medical therapy to decrease the colonic inflammation. For medically refractory disease limited to the terminal ileum and/or cecum, an ileo-colic resection with a restorative anastomosis is the procedure of choice. More severe disease may be treated with a segmental resection, total colectomy with an ileostomy or total proctocolectomy and ileostomy. The extent of the resection is dictated by the extent of the disease. Patients are encouraged to remain on some form of medical therapy (most commonly 6-mercaptopurine) as it is thought to decrease the risk of postoperative recurrence, especially at the site of the anastomosis. Unlike ulcerative colitis, where a restorative ileopouch-anal anastomosis (IPAA) may be fashioned in an attempt to create a neo-rectum, an IPAA is typically avoided in patients with Crohn's disease. The use of a restorative pouch is avoided due to the risk of new disease formation in the pouch or proximal small bowel. Furthermore, evidence of anal or peri-anal Crohn's disease is a contraindication to IPAA due to the high risk of fistula formation and pouch failure. In a small, highly select group of patients with disease limited to the colon, and with an absence of anal or perianal disease, total proctocolectomy with ileopouch anal anastomosis may be offered. However, these individuals have a thirty-three percent chance of pouch failure requiring pouch excision. Conversely, sixty-six percent of patients may be able to retain the pouch with or without use of additional medications.

A TEAM APPROACH

Surgical management of inflammatory bowel disease is a complicated undertaking, involving close communication between the patient, the primary care physician, the gastroenterologist, and colorectal surgeon. Once medical therapy has failed, operative intervention becomes necessary. Surgical management of Crohn's disease is highly selective and directed towards minimizing the loss of intestinal length. Surgical management of selected patients with Crohn's disease can be performed safely and successfully. With the advent of laparoscopic surgery, these procedures can be performed with less pain, shorter hospital stays, and a quicker return to normal activities.