Indications for Surgery in Crohn’s Disease

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Surgery should not always be the physician’s last effort at treating patients. Some disease states will improve only with surgical treatment; for those patients, medical treatment is a waste of time, and postponing surgery can prolong the patients’ recovery times and increase their complications.

A majority of patients with Crohn’s disease—approximately 70% (1, 2)—will undergo surgery and will benefit from the surgical treatment. The Rating Form for Inflammatory Bowel Disease Patients’ Concerns (RFIPC) is just one of many quality-of-life measurements, but by these and many other indicators, the quality of life of patients with Crohn’s disease is vastly improved through surgery (3). Fifty percent of operated patients remain in clinical remission for 8–10 yr after surgery (2). No other medical therapy does as well as surgery in reliably and economically inducing such a long remission in so many patients. The physician must therefore consider who should undergo surgery and when and why these operations should be performed.

INDICATIONS FOR SURGERY TO TREAT CROHN’S DISEASE

To define the indications for surgery, one must consider the phenotypic classification of patients with Crohn’s disease with particular attention to disease behavior.

Inflammation

For about the first 8 yr of disease, most patients are not stricture, penetrating, fistulizing, or abscessed. During this time, patients are in the inflammatory phase of the disease but after 7–10 yr, approximately 80% of these patients will evolve to either a stricturing phenotype or else to a penetrating or fistulizing phenotype (4, 5). These classifications provide a basis not only for genetic and serologic studies but also for directing therapy. Inflammatory indications are present when patients experience pain, tenderness, diarrhea, fever, and weight loss. If patients undergo resection in the inflammatory phase of the disease—without obstruction, fistulization, infection, or hemorrhage—the postoperative prognosis is often poor (6). Inflammation should be treated with anti-inflammatory therapy and not with surgery.

Obstruction

Physicians are familiar with the common presentation of obstruction in patients who have Crohn’s disease. Two simple rules apply to surgery for obstruction in Crohn’s disease: never operate for obstruction in Crohn’s disease, and always operate for obstruction in Crohn’s disease. This apparent paradox is explained by the different scenarios in which patients present with obstructive manifestations, such as abdominal distention, cramps, and vomiting. One scenario occurs during the acute flare. In this situation, obstructive manifestations may be accompanied by what was described in early radiologic literature as a “string sign.” It is important to recognize that this sign does not reflect fixed stenosis caused by a fibrous stricture. It is an acute manifestation of edema and inflammatory spasm. Soon after the episode of spasm, the narrowed segment opens and there is no significant prestenotic dilation.

Therefore, when a patient with an acute flare of Crohn’s disease presents with obstruction, that blockage will always open up spontaneously and will never require urgent surgical intervention. After a few days on a clear liquid diet or IV fluids and a little antispasmodic for the cramps, the patient will recover. That is the basis for Rule Number One: “Never operate for acute obstruction in Crohn’s disease.”

By contrast, fixed fibrostenotic obstruction with chronic prestenotic dilation or huge saccular dilation occurs in patients who are chronically obstructed and suffering repeated attacks. These patients are afraid to eat, they lose a lot of weight, and they have a severely impaired quality of life. Their problem is mechanical and so requires a mechanical rather than a medicinal solution. The physician must not attempt to manage such a problem with medical therapy and later send the patient, malnourished and debilitated, to a surgeon. The patient’s obstruction must be fixed. The surgeon’s recommendation for a specific procedure, such as strictureplasty or resection, will depend on the anatomy of each case, but for this kind of chronic, relapsing, fixed obstruction, treatment is always surgical. This principle forms the basis for Rule Number Two: “Always operate for chronic obstruction in Crohn’s disease.”

There is, however, one critical exception to the first rule about never operating for acute obstruction in Crohn’s
disease. Consider the patient who has a well-established, long-known diagnosis of Crohn’s disease and who is thriving but then suddenly experiences extremely severe, exruciating pain and abdominal agony; and starts screaming. This is not the way an acute flare-up of Crohn’s disease with an obstructive manifestation typically presents. Patients who experience the atypical more sudden onset of agony are experiencing an acute, severe, complete, strangulating, adhesive obstruction, and they need prompt surgical intervention.

With this one exception, surgeons should not have to operate for acute obstruction in Crohn’s disease, which should typically resolve spontaneously in a few days. If a Crohn’s disease obstruction does not open within 2 or 3 days of conservative management, the patient is either suffering from Crohn’s disease complicated by a foreign body, a food bolus, a fecalith, an enterolith, or a cancer, or else has a fixed adhesive obstruction. An uncomplicated inflammatory obstruction should promptly open by itself.

**Fistula**

Fistulizing disease involves a hole in the patient’s gut. In contrast to the inflammatory and obstructing phases of Crohn’s disease, the choice of how to treat a fistula is not so simple: it depends on anatomic location, symptoms, and especially complications such as infection, obstruction, or widespread extravasation. If a fistula does not create any physiologic or symptomatic problems for the patient, it may not require any therapy. Even multiple fistulas with “wagon-wheel” appearances on x-ray may do nothing more than provide alternate routes through the intestine—a kind of “auto-bypass”—so that no treatment beyond regular observation is necessary.

More commonly, however, intestinal fistulas, such as those between ileum and bladder, may be associated with enough symptoms to require some treatment. When these fistulas are not associated with suppurative complications or with intractable entanglement of bowel loops or with distal obstruction, medical treatment may suffice. Medical treatment includes antibiotics and an antimetabolite. 6-Mercaptopurine (6-MP), for example, has been shown to heal fistulas in about one-third of patients, compared to less than 10% healing on placebo (7). In more serious cases, infliximab promotes more rapid and consistent fistula closure. This particular monoclonal antibody to tumor necrosis factor (TNF)-α heals or substantially reduces fistulas in approximately 65% of patients, as contrasted with only about a 25% response to placebo (8).

Perianal fistulas should be categorized separately from internal enteric fistulas. The physician must distinguish between perianal fistulization and metastatic Crohn’s disease. Metastatic Crohn’s disease, although it often occurs in the perineal area, appears separately from the fistulous pathways that are derived from the anal crypts. The diagnosis of metastatic Crohn’s disease should be confirmed by biopsy, especially because the disease mandates medical therapy and not surgery.

On the other hand, when a large perianal fistula results in an abscess, the abscess must be treated surgically and not with antibiotics or biologics alone. The abscess must be drained and pus must be released. If surgery fails and the abscess does not heal, then the patient may benefit from medical treatment with infliximab. By the same token, when either perianal or enteric fistulization results in a pelvic abscess, the clinician should not waste time with medical therapy; this problem must be treated surgically or at least with radiologically guided drainage prior to the definitive operation.

**Toxic Colitis**

Another complication of Crohn’s disease that requires immediate and close surgical attention is toxic colitis. This complication, which occurs in Crohn’s disease of the colon as well as in ulcerative colitis, is not synonymous with “toxic megacolon.” Toxic megacolon, or toxic dilation, is a late complication of toxic colitis. In contrast, toxic colitis occurs when a small amount of air accumulates over an excessively long paralyzed segment of colon. With toxic colitis, the patient’s heart rate, temperature, white blood cell count, C-reactive protein (CRP), and sedimentation rate increase while the patient’s blood pressure, albumin concentration, and hemoglobin levels decrease. The patient’s bowel sounds begin to diminish and the abdomen becomes distended.

As soon as clinicians recognize toxic colitis, they must begin aggressive treatment. Dilation can be decompressed with a long tube and by rolling the patient back and forth from stomach to side and back. Even successful decompression, however, is not sufficient treatment for toxic colitis. If the inflammatory process continues without remission, the colon may perforate. This dreaded complication does not always present with classic signs of peritonitis—especially in patients who are “loaded” with steroids—nor is it always obvious as a large accumulation of free air under the diaphragm. To recognize perforation, particularly microperforation or walled-off perforation, the clinician must carefully examine the patient for dullness over the liver and follow frequently with x-rays or computed tomography (CT) scans for subtle signs, such as extraluminal air, subserosal air in the colonic wall, or a small collection of free air. The physician must monitor the toxic colitis patient for perforation because this is the complication that is most often fatal.

**Hypercoagulability**

Another underappreciated complication that can cause the patient’s death is severe hypercoagulability. If a patient with active IBD, particularly in the colon, develops deep vein thrombosis during an attack, the patient and clinician should expect an impending catastrophe that usually mandates urgent surgical intervention.

**Dysplasia**

Dysplasia may also indicate a need for surgery in patients with either ulcerative colitis or Crohn’s disease of the colon.
The risk of colorectal cancer in Crohn’s disease, given the same duration and anatomical extent of disease, is identical to the risk in ulcerative colitis (9, 10). In both cases, flat dysplasia not confined to a readily excisable polyp predicts a likely concomitant or metachronous cancer.

CONCLUSION

The goal of medical therapy for IBD is not to keep the patient away from the surgeon but to get the patient well. If this goal can be accomplished effectively with medication, then medical treatment is appropriate. However, whenever surgery can induce remission and return the patient to good health more simply, more surely, more swiftly, and more safely, then surgery is the best option. The clinician’s primary role is not saving colons: it is saving lives and improving the patient’s quality of life.

REFERENCES