Exploring endoscopic therapy for the treatment of Crohn’s disease–related fistula and abscess

Bo Shen, MD, FASGE
Cleveland, Ohio, USA

GRAPHICAL ABSTRACT

Fistula and abscess represent penetrating disease phenotypes of Crohn’s disease (CD) and can develop in patients with or without prior history of CD-related surgery. While CD fistula and abscess have been traditionally treated with medical and surgical therapy, the role of endoscopic therapy in this particular phenotype of CD is expanding recently, thanks to advanced endoscopic techniques and a better understanding of pathogenesis and natural history of the disease and principle of treatment. The success of endoscopic treatment for inflammatory bowel disease depends on comprehension and appreciation of principles, then techniques, followed by instrument and device. Attempts should be made to temporarily or permanently close the feeding side (or the primary) orifice at the gut, by various forms of clipping. Endoscopic fistulotomy is feasible, particularly for perianal fistula and surgery-associated distal bowel fistula. Perianal abscess can be treated with endoscopic incision and drainage and even seton placement. Endoscopic treatment for fistula and abscess as well as for stricture has become an important part of the multidisciplinary approach to complex CD. (Gastrointest Endosc 2017;85:1133-43.)

Fistula and abscess can occur in patients with Crohn’s disease (CD) or ulcerative colitis, with or without surgery. Fistula and abscess are the most advanced phenotypes of CD, representing a penetrating disease and exerting a great impact on the disease outcome and patient’s quality of life. In most patients with CD, fistula results from persistent mucosal and transmural...
inflammation and stricture. Medical therapy, including the use of anti–tumor necrosis factor, may be effective in reducing fistula drainage, particularly in the presence of concurrent bowel inflammation. It appears that the efficacy of medical therapy is limited to perianal fistulas and, to a lesser extent, enterocutaneous fistula (ECF). In contrast, medical therapy has a limited role in the treatment of hollow organ-to-hollow organ fistulas, such as rectal vaginal fistula (RVF), pouch-vaginal fistula (PVF), and enterenteric fistula (EEF). Currently, the standard treatment for RVF, PVF, and EEF has been surgical intervention. The main disadvantages of surgical treatment are its invasiveness, inadequate efficacy, postoperative adverse events, and postoperative disease recurrence. Surgery in patients with inflammatory bowel disease (IBD) typically carries a higher risk for the development of surgery-associated stricture, anastomotic leak, sinus, fistula, and abscess than the surgery for non-IBD patients. In addition, those surgical adverse events can have similar clinical presentation and endoscopic and radiographic features to CD. The differential diagnosis between CD-related adverse events and CD surgery-related adverse events is often difficult.

Endoscopic therapy has evolved to a valid option for the treatment of IBD. For example, endoscopic balloon dilation has become a routine part of clinical practice in the treatment of CD-associated stricture and IBD surgery-associated strictures. The role of endoscopic therapy for fistulizing CD and IBD-related fistula or abscess has recently been explored. The field of endoscopic therapy in IBD has lagged behind that of upper GI tract and pancreaticobiliary system. The gap in endoscopic therapy in IBD may largely result from the lack of knowledge and interest in disease process and management of IBD from our therapeutic endoscopists and/or the lack of technical skills in advanced endoscopy from our IBD specialists. However, there is a growing interest and need for endoscopic management of IBD, which is becoming an integral part of multidisciplinary approaches to the complex disorder.

My team has spearheaded some exploration activities. In this article I share my experiences and lessons learned, along with the current limited literature. The key words for the literature search included “Crohn’s disease,” “ulcerative colitis,” “fistula,” “fistulotomy,” “anastomosis,” “drainage,” “endoscopic therapy,” and “endoscopic clipping.”

PRINCIPLES OF ENDOSCOPIC TREATMENT OF FISTULA AND ABSCESS

Fistula and abscess can occur in patients with CD or ulcerative colitis, with or without surgery. Before the initiation of any therapy (medical, endoscopic, or surgical), it is important to delineate the anatomy and nature of fistula. A combined assessment of clinical, endoscopic, radiographic, and histopathologic features is required. It is particularly important to evaluate the location, number, length, complexity, associated bowel inflammation, stricture, and abscess of the fistula. The information will help IBD specialists, endoscopists, and colorectal surgeons to decide the best approach for the patient, medically, endoscopically, surgically, or a combination.

The main principles for the endoscopic treatment for fistula are to open the fistula tract (ie, fistulotomy) whenever possible, to close the feeding side or the primary opening of the fistula (such as endoscopic clipping) and keep the exit orifice (ie, the secondary opening), or to fill up the tract with various agents (such as fibrin glue or plug). The outcome measurements include complete or partial closure of the primary and/or secondary openings, the absence of fistula drainage, complete scarring off of the fistula tract, and absence of abscess formation. It is important to ensure that the closure of the primary opening of a fistula precede the closure of the secondary opening or at least ensure the primary and secondary openings are closed at the same time. If the closure of the secondary opening is before the closure of the primary opening, the patient will likely develop abscess or branching of the simple fistula tract to complex tracks.

I summarize the natural history of fistulizing CD as follows: no inflammation, no stricture; no stricture, no fistula; and no fistula, no abscess. Therefore, the goals of the current medical treatment for IBD have been the control inflammation and prevention of development of stricture and fistula and postoperative disease recurrence. The main indications for surgery in CD are the relief of mechanical obstruction and inflammatory/infectious adverse events. Endoscopic therapy plays a role in bridging and facilitating the efficacy of medical and surgical therapy. Therefore, to enhance the efficacy of endoscopic therapy, concurrent inflammation and stricture should be managed with medical and endoscopic therapy. Concurrent intra-abdominal or perianal abscess should be treated with radiographic, endoscopic, or surgical drainage before the initiation of endoscopic therapy for fistula.

ENDOSCOPIC FISTULOTOMY

Endoscopic fistulotomy can be defined as that performed through the use of an endoscope or performed in the endoscopy unit with an endoscopic device. Endoscopic fistulotomy may be only amenable for fistulas in the distal bowel or perianal area, with a short tract. The short fistula in the distal bowel is often associated with prior surgery in the area, such as ileal pouch anal anastomosis (IPAA), colorectal anastomosis, and colorectal anastomosis. It is important to measure the length of the fistula tract and thickness of the overlaying bowel