Challenges in the Medical and Surgical Management of Chronic Inflammatory Bowel Disease

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KEYWORDS

• Crohn's disease • Ulcerative colitis • Intestinal fistula • Intestinal failure
• Intestinal pouch complications • Venothromboembolism

KEY POINTS

- Inflammatory bowel disease is often a chronic relapsing medical condition requiring a multidisciplinary team and thoughtful surgical approach for optimal outcomes.
- Intestinal fistula is a devastating but well-recognized complication of Crohn's disease, and the management approach involves nutritional optimization, wound containment, and careful operative planning.
- Crohn's disease after multiple resections or long segment involvement can result in short bowel syndrome, and the challenges of ongoing nutritional support are discussed.
- Intestinal pouches are a popular alternative to permanent stoma after total proctocolectomy, and this article addresses several common complications and management strategies.
- Increasing awareness of elevated venous thromboembolic events in the inflammatory bowel disease population mandates mention and aggressive prophylaxis during hospitalization and postoperatively.

INTRODUCTION

An estimated 1.6 million Americans are living today with inflammatory bowel disease, and as many as 70,000 new cases are diagnosed annually.[1] About half of all individuals with ulcerative colitis achieve remission, but recurrence is not uncommon after cessation of medical therapy, and up to 35% will require re-treatment within

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1 year.[2] At any given time, 50% of Crohn patients are in remission with medical therapy, but maintenance of treatment is recommended for several years.[3] Unfortunately, recurrences are frequent in Crohn's disease, with relapse rates of 20% at 1 year, 40% at 2 years, 67% at 5 years, and 79% at 10 years.[4] This patient population faces an increasing number of medical therapies with frequent changes in regimens. The side-effect profiles and cumulative costs are not insignificant.

About 20% of patients with ulcerative colitis will require surgery during their lifetime, and up to 80% of individuals with Crohn's disease will undergo operative intervention.[5] Crohn's disease recurs in nearly 30% of people within 3 years after resection and 60% at 10 years after resection.[6] Up to 70% of patients are estimated to need repeat resections for Crohn.[7] Surgeries performed for inflammatory bowel disease are not without complications and require careful, multidisciplinary approaches for best outcomes. Several specific and challenging complications arising from long-term inflammatory bowel disease and its surgical management are discussed.

INTESTINAL FISTULA

By definition, this process involves only those patients with Crohn's disease, because ulcerative colitis does not demonstrate transmural inflammation except in the acute setting when perforation is more likely than fistulization. An estimated 5% to 15% of Crohn patients will experience this disease-related complication during their lifetime.[8] A fistula is a connection between 2 epithelialized surfaces and is commonly identified by the 2 involved organs (ie, enterocolonic or colovaginal). Enteroenteric fistulas can present on a spectrum from asymptomatic and an incidental finding at the time of exploration or imaging to debilitating and lifestyle limiting. For the purpose of this review, only the symptomatic variety is addressed, beginning with the troublesome and morbid enterocutaneous fistula.

The acute management of an enterocutaneous fistula in a patient with inflammatory bowel disease is focused on stabilizing the individual because they often present with sepsis, volume depletion, and malnutrition.[9] This process involves a several-pronged approach (**Box 1**) that is largely preserved since the original publication of management guidelines in 1964 by Chapman and colleagues.[10] The key elements include draining intra-abdominal sepsis, correcting volume depletion, and managing the effluent by protecting the skin. Measurements such as body mass index (BMI) and serum albumin can help estimate the degree of malnutrition.[11] Nutritional support should be initiated when the resuscitation is complete, and the enteral route is preferred if feasible to maintain the intestinal lining and use hormonal and absorptive functions. Patients with daily fistula output greater than 1500 mL typically require intravenous fluid replacement. Malnourishment due to proximal fistula losses can be subtle and requires close surveillance with serial nutrition laboratory tests (serum albumin, prealbumin, iron studies, electrolyte panels). Enteral feeding may not be tolerated if it significantly increases fistula output, and total parenteral nutrition (TPN) is another viable option.[12] Complications related to long-term TPN use are well established and are discussed in more detail later in the section on short bowel syndrome.

For ongoing patient support with fluids and nutrition as well as surgical planning, it is useful to define the fistula based on anatomic location and volume of output. Proximal small bowel fistulae are commonly high output (>500 mL/d) and less likely to close when compared with colonic or low output fistulae (<200 mL/d). Spontaneous closure of fistulae is rarely seen in Crohn's disease because ongoing inflammation or distal obstruction is usually present.[13] The amount of residual uninvolved bowel must be noted in this patient population for surgical planning. Antitumor necrosis factor therapy