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Role of surgery in patients with pouchitis

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A B S T R A C T

Restorative proctocolectomy with an ileal pouch-anal anastomosis (IPAA) has been an ideal surgical option for patients with chronic ulcerative colitis (UC) and familial adenomatous polyposis for nearly 4 decades. In most cases, patients enjoy excellent quality of life with a durable surgical and functional result, avoiding the need for a lifelong ileostomy.

Despite great success, patients with IPAA may suffer from several pouch-related complications that are a challenge for the patient and surgeon. Pouchitis is one such challenging complication that requires thoughtful consideration and judgment for successful management. Treatment of pouchitis has historically revolved around medical therapy, but the surgeon's role in a multidisciplinary approach to pouchitis is critical for diagnosis, treatment, and improvement of quality of life.

The focus of this review is to provide a structured approach to the challenges that the surgeon encounters when faced with a patient with chronic or refractory pouchitis and to discuss the surgical options that mitigate the morbidity caused by pouchitis in parallel with or when medical treatments fail.

Introduction

Restorative proctocolectomy with ileoanal pouch (RP-IPAA) is the cornerstone of treatment for many diseases of the colorectum such as ulcerative colitis (UC), familial adenomatous polyposis (FAP), and very selected cases of Crohn's disease (CD) in which patients desire maintenance of intestinal continuity. In the majority of cases, surgery is successful, pouch function is ideal, and patients enjoy excellent bowel function and high quality of life.[1] However, a minority of patients suffer from poor pouch function as a result of a number of complications that are often challenging for the clinician to identify and manage.[2–4]

Pouchitis, or nonspecific inflammation of the IPAA in the absence of structural or mechanical issues, is the most common long-term complication of IPAA surgery and one of several identifiable conditions that commonly result in IPAA dysfunction.[5,6] It poses a unique treatment challenge in that the etiology and pathogenesis of pouchitis are not well understood. Despite the absence of an effective surgical "cure" for refractory or chronic pouchitis, the surgeon's role in the multidisciplinary management of pouchitis is crucial with regard to confirming the correct diagnosis and offering options for symptom management. The following discussion will highlight key concepts that form the basis of a surgical approach to management of patients with this complex, and as yet poorly understood, IPAA complication with particular attention paid to the surgical strategies that alleviate pouchitis-related morbidity.

Natural history

It is estimated that approximately 50% of patients who undergo IPAA surgery for UC will develop at least one episode of pouchitis in their lifetime.[7] Although the etiology and pathogenesis of pouchitis are not entirely clear, surgical alteration in bowel anatomy may create an "inflammation-prone" environment as the distal ileum is artificially converted to that of a storage reservoir. These changes in the ileal pouch may constitute triggering factors for the development of pouchitis.[8–10] Pouchitis almost exclusively occurs in patients with UC or indeterminate colitis and is rare in patients with FAP.[11,12] Those with a history of severe UC, primary sclerosing cholangitis, backwash ileitis, p-ANCA, and nonsmoker status are at higher risk to develop pouchitis.[13–15]

Of those who develop pouchitis, 40% of patients experience a single episode without recurrence of symptoms and are diagnosed with acute pouchitis. In these cases, symptoms such as increased frequency of loose bowel movements, tenesmus, rectal bleeding, lower abdominal cramping, and malaise respond to a 2–4 week course of oral antibiotics with initial improvement of symptoms after 3–4 days of therapy.[16,17] In 60% of cases, acute pouchitis will follow a relapsing course, with 10–30% of these patients developing an unremitting, refractory pouchitis.[18,19] Fortunately, most

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patients respond to second-line therapies such as chronic ciprofloxacin use, more aggressive therapies such as chronic steroids, immunosuppressive therapy, or use of biologic agents.[20–22]

A small minority of patients with treatment-resistant pouchitis does not find relief with medical therapy and may desire surgical options for treatment and alleviation of symptoms. The following discussion highlights surgical options for managing these patients.

Evaluation of the dysfunctional pelvic pouch

Initial evaluation

First and foremost, patients referred with a diagnosis of refractory pouchitis should undergo a comprehensive and standardized evaluation without influence of the existing "refractory pouchitis" diagnosis. Other causes of pouch dysfunction such as chronic pelvic sepsis or Crohn's disease are easily missed or thought to be absent when an existing diagnosis is assumed.

A complete history should be obtained including a full review of the patient's symptoms, treatments that have been attempted prior to the surgical evaluation, and response to each treatment. Operative reports should be obtained and reviewed, with specifics of surgery and convalescence noted. Any indication of technical difficulty must be thoroughly explored, as a technical complication of the initial pouch surgery may be easily missed and symptoms mistaken for pouchitis. One should pay particular attention to the condition of the patient at the time of pouch creation and the use of covering ileostomy as large doses of immunosuppression negatively affect pouch healing and anastomotic complications may result in occult sinus tracts or chronic anastomotic leaks with symptoms mimicking pouchitis.[23–25]

As there are no standardized diagnostic criteria for pouchitis, in daily practice, it is not unusual for an empiric diagnosis of pouchitis to be made based on clinical symptoms only, with endoscopy performed only if the diagnosis is uncertain or if symptoms persist after initiation of medical therapy. One drawback of this approach is that patients may be given a presumptive diagnosis of pouchitis that is never confirmed even when symptoms recur and medical therapy is not successful. Patients may never undergo a full evaluation for pouch dysfunction, and other complications contributing to their morbidity may not be identified. Therefore, it is important to re-establish the diagnosis of pouchitis at the beginning, even if the diagnosis has been longstanding. Determining the etiology of pouch dysfunction is challenging, and pouchitis has historically been a "default" diagnosis for pouch-related dysfunction. Correct diagnosis of pouch dysfunction is crucial as treatment options are at times vastly different for each IPAA complication.[26]

When endoscopic evaluation is performed, the findings of nonspecific inflammation of the mucosal lining, with friable, and ulcerated mucosa that bleeds easily are often discovered in the absence of other pouch complications. It is typical for biopsies to reveal villous atrophy, inflammatory infiltrates, crypt abscesses, and ulceration.[27] The pouchitis disease activity index is often used as a diagnostic scoring system for pouchitis to assess severity of disease.[28,29] Gastrografin enema and pelvic MRI disclose or rule out anastomotic complications, fistulae, sinuses, or chronic leaks that may be the source of symptoms.

Next, the surgeon must assess the patient's health status and quality of life during the initial patient encounter, even if the etiology of pouch dysfunction is still unclear. Patients are often referred to the surgeon after years of medical treatments that have left the patient malnourished, decompensated, and mentally exhausted. These individuals may benefit from surgical intervention such as fecal diversion offered sooner rather than later.

Finally, it is important for the surgeon to have an honest and straightforward discussion with the patient regarding expectations of surgery for pouchitis. It must be emphasized that pouchitis is not "cured" with a surgical procedure, but that surgery is a tool that may be used to palliate the symptoms of pouchitis and improve quality of life. Expectations must be discussed and agreed upon prior to embarking on surgical management of pouchitis.

Multidisciplinary approach to diagnosis

When a patient presents with IPAA dysfunction and the diagnosis of pouchitis is in question, the authors often use a multidisciplinary approach to evaluate the IPAA. After preoperative evaluation with history, physical, and radiographic testing as outlined earlier, an evaluation with an anoperineal examination under anesthesia with pouchoscopy is performed as a team by the colorectal surgeon and gastroenterologist. The anoperineum, pouch-anal anastomosis, pouch body, and afferent limb (complete to the ileostomy closure site) are examined with members of both specialties in the operating room, offering both perspectives of expertise. Any clinical signs of pouchitis or any other IPAA complications are noted (anastomotic sinus or fistula, stricture, pouch prolapse, Crohn's disease, etc), many of which may cause similar symptoms. Biopsies are obtained for pathologic review. At the completion of the examination, the findings are discussed with the patient and family member along with a patient-centered treatment strategy. This multidisciplinary team approach is ideal for the patient as he/she is presented an immediate plan for treatment with opportunity for discussion with members of both specialities. The strategy can always be tailored at a later time as pathology results or recommendations from our Multidisciplinary Inflammatory Bowel Disease Conference are available.

Surgical options

Diverting loop ileostomy

Fecal diversion is an effective way of alleviating symptoms in patients with severe refractory pouchitis. Any patient with symptoms that have negatively affected quality of health and life is a candidate for ileostomy. This approach may provide symptomatic relief as mucosal inflammation is lessened by diversion of fecal stream away from the IPAA or relief from anoperineal excoriation often seen as a result of frequency of bowel motions. The IPAA is left in place and thus allows the patient relief of symptoms without committing to a major pelvic operation.

Loop ileostomy provides many benefits. First, it allows for relief of some symptoms related to pouchitis in a manner that can be temporary and somewhat easily reversed if the patient is not pleased. In many cases, it may be completed with a laparoscopic approach, even if open IPAA had previously been performed, to shorten convalescence and minimize adhesion formation should repeat laparotomy for pouch revision or excision be desired. Second, patients are able to experience or have a reminder of what life is like with an ileostomy, and may choose to keep the ileostomy on a more permanent basis if it affords them a lifestyle that was not achievable due to IPAA dysfunction. Next, exploration at the time of ileostomy allows for a thorough examination of the abdomen and small bowel to identify any pathology missed on prior imaging that may be the source of the patient's symptoms. Possible sources noted in representative cases by the authors are abdominal wall or pelvic mesh that adhered to or reacted with the ileal pouch or large ovarian cysts thought to be part of the ileal pouch on preoperative imaging (Ashburn and Shen; unpublished