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Revision IPAA: Strategies for Success

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Abstract The history of ileal pouch-anal anastomosis (IPAA) is one of success with durable surgical and functional results. However, pouch failure, due to infection, mechanical, or functional disability, represents a challenge to both surgeon and patient. Practicing surgeons who deal with the revision pouch face a variety of challenges. Success requires a strategy, which includes critical planning, preparation, and surgical techniques in order that surgeons continue to provide solutions and hope to patients.

Keywords Surgery · Ulcerative Colitis · IPAA · Revision

Introduction

The standard of care for medically refractory chronic ulcerative colitis remains proctocolectomy. This operation offers historically excellent quality of life for the majority of patients with a durable surgical and functional result.[1] Although pouch failure is rare, affecting between 5 and 15 % at 10 years, the consequences of failure are significant.[1] Reasons for pouch failure include infection, mechanical, and complications of Crohn's disease. These surgical complications, functional disability, and disease-related consequences lead to pouch-related problems that challenge both surgeon and patient. Therefore, it is critical that thoughtful consideration and judgment be utilized in planning, preparing, and performing procedures with the goal of providing solutions and hope.

Challenges and Pearls

Intraoperative Challenges

As with primary pouch surgery, the first hurdle to overcome remains intraoperative difficulty. The challenges of revision surgery include failure to reach and the technical aspects of the anastomosis. It is critical that pelvic structures are preserved and blood supply is protected. Variations of pouch type, such as J or S pouch, may overcome difficulties of reach.[1] It is critical that the surgeon achieve a length, which allows its most dependent part to reach well below the pubic symphysis. In addition, strategic division of arteries and veins are often necessary to increase the mobility of the pouch. The choices of which to divide include: ileal colic, right colic, and, on rare occasion, distal SMA branches. This is a choice of significance, as the wrong choice can make the difference between success and permanent ileostomy.

Revision pouch surgery rarely allows for repeat-stapled techniques. Therefore, a deep understanding of transanal approaches must be understood. In order to achieve this, a Lone Star Retractor® along with other narrow retractors may be utilized transanally to aid the surgeon in repairing or completing an appropriate anastomosis.[1]

Reasons for Failure

The reasons for failure include: infectious[2,3] complications in 50 % of patients, a mechanical or functional problem in 30 % of patients, and disease-related failure in 5 to 10 % of patients, with Crohn's disease being the most common.[1,4–7] Prior to consideration of pouch revision, a thoughtful evaluation with imaging (CT enterography, MRI, and endoscopy) are required. In addition, intraoperative ureteral stents and intraoperative endoscopy are often necessary.

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Infection

Infection and/or sepsis are the most difficult for patients and require the most thought by the medical and surgical team. It is critical that no intraoperative procedure be entertained until all infection has resolved. In an excellent study by the Cleveland Clinic, the predictors of failure in patients with infectious complications of fistula revealed that early presentation was associated with leak and elevated BMI.[6] For those who presented late, the most significant risk factor was the diagnosis of Crohn's disease.[6]

Sinus tracts and perianal/peri-pouch abscess represent a common yet typically simple infectious complication to care for surgically. If the patient has an ileostomy, then consideration for delayed closure is critically important as more than 50 % of these abnormalities heal.[1] For those that remain, debridement and internal drainage through the bowel wall is the transanal procedure of choice.[1] Operatively, this may require curettage, fibrin glue placement, or even in extreme cases mucosal advancement flap. Low fistulas involving little sphincter can be managed by fistulotomy.[1] Those that involve sphincter muscle are typically managed with seton placement or mucosal advancement flap.[1] Mucosal advancement, however, is a difficult undertaking with overall marginal results even in experienced hands. The most complex problems include those patients with pelvic sepsis. These patients typically require temporary diversion in order to control their underlining problem. Once all sepsis is resolved (3–6 months), then the potential for surgical intervention should be entertained. Typically, pouch excision or revision will be required in combination with temporary diversion and a hand-sewn anastomotic technique. Given the complexity of these operations, they carry the most risk for postoperative sepsis and functional disability.

Multiple institutions have evaluated the success of salvage IPAA. Success rate at 1–5 years range between 70 and 90 % at 1 year and 70 to 90 % at 5 years[1–6] with an overall failure rate of between 6 and 60 % depending on the series.[1–6] It is notable to report that many of the published series are of small numbers with multiple indications. In addition, no institution has the experience to identify risk and probability of success for an individual patient.

Mechanical

Mechanical and functional difficulties may also be indications for surgical revision. Stricture is one of the most common anastomotic complications occurring in approximately 16 % of patients.[1] Treatment of anastomotic stricture includes anal dilatation, which may be completed by the patient. Refractory strictures may require excision and/or advancement flap. Other functional or mechanical issues include the dilated blind limb. This dilated limb may result in bacterial overgrowth, obstruction due to twisting, or simply an obstruction due to positioning as it relates to the pouch itself.[1] Surgical resection is required to eliminate this issue. A particular plaguing problem of the "long retained rectum" or efferent elongated spout, which are particularly problematic in S pouch construction.[1] These problems require complete revision of the pouch with excision of the retained rectum and or excision of the elongated spout. Diverting ileostomy should cover complete revisions or disconnections of a previous pouch in most cases. Crohn's related obstructive complications such as stricturing can be successfully treated with strictureplasty with a high degree of success in selected patients; however, blood supply must be respected.[5]

In conclusion, reoperative surgery for pouch complications is certainly possible with a relatively high degree of success. It is critical that the surgeon and patient understand the potential consequences of reoperative surgery and the long-term likelihood of success. This requires significant experience, judgment, meticulous technique, and thoughtful appraisal of results, which are shared with colleagues and patients. In the end, consideration of the patient's best interest with honest and transparent discussion will result in surgeons meeting the needs of their patients.

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