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Diagnosis and management of pouch outlet obstruction caused by common anatomical problems after restorative proctocolectomy☆,☆☆,★

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Abstract

Background and aims: Efferent limb syndrome (ELS) after S pouch and pouch-rectal anastomosis (PRA) after J pouch are common anatomical problems after restorative proctocolectomy that lead to pouch outlet obstruction. This study was aimed to evaluate the frequency, diagnosis and management of ELS and PRA.
Methods: Consecutive patients diagnosed with ELS or PRA at our Pouch Center from 2002 to 2011 were included. Demographic, clinical, endoscopic, and radiographic features together with its management and outcomes were studied.
Results: A total of 26 patients met the inclusion criteria, 17 (65.4%) were male. Eleven patients (42.3%) had ELS and 15 (57.7%) had PRA. The median length of the efferent limb/rectal stump for all patients was 6.0 (interquartile range [IQR]: 5.0–8.8) cm, 7.0 (IQR: 5.0–9.0) cm and 6.0 (IQR: 5.0–10.5) cm for S and J pouch patients, respectively (P = 0.025). Dyschezia (n = 15, 57.7%) was the most common presenting symptom, followed by bloating (n = 9, 34.6%), abdominal pain (n = 9, 34.6%), the sense of incomplete evacuation (n = 7, 26.9%) and perianal discomfort (n = 3,

Abbreviations: ATZ, anal transitional zone; CD, Crohn's disease; CARP, chronic antibiotic-refractory pouchitis; EIM, extra-intestinal manifestations; ELS, efferent limb syndrome; FAP, familial adenomatous polyposis; IBD, inflammatory bowel disease; IPAA, ileal pouch-anal anastomosis; IQR, interquartile ranges; IRB, institutional review board; NSAID, non-steroidal anti-inflammatory drugs; PDAI, the Pouchitis Disease Activity Index; PRA, pouch-rectal anastomosis; QOL, quality of life; SD, standard deviations; TNF, tumor necrosis factor; UC, ulcerative colitis.

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11.5%). A greater number of patients in the ELS group had dyschezia compared to the PRA group (90.9% vs. 33.3%, P = 0.005). More patients in the ELS group had a sense of incomplete evacuation than those in the PRA group (45.5% vs. 13.3%, P = 0.10). Ten patients (90.9%) in the ELS group and 5 patients in the PRA group (33.3%) required surgical intervention (P = 0.005). After a mean follow-up of 3.4 ± 1.4 years, 7 (87.5%) of the 8 patients, who underwent redo pouch construction with efferent limb/rectal stump excision, maintained a functional pouch.
Conclusions: Patients with ELS or PRA often presented with debilitating symptoms. ELS occurred more frequently in S pouch patients than PRA in J pouch patients. Surgical intervention might be needed, especially for the ELS patients.

1. Introduction

Restorative proctocolectomy with ileal pouch-anal anastomosis (IPAA) is the standard surgical treatment for most UC patients who do not respond to medical therapy or develop neoplasia, and for a majority of patients with familial adenomatous polyposis (FAP). This bowel-anatomy-altering surgery substantially reduces the risk for colitis-associated neoplasia and significantly improves patients' health-related quality of life (QOL) by preserving the natural route of defecation.[1–4] However, the construction of the ileal pouch reservoir is often associated with various complications.

J and S pouches are two most commonly used configurations. The anatomy of a three-limb S and a two-limb J pouch is different. The efferent limb of an S pouch is directly linked to the anal transitional zone (ATZ), while the efferent limb of a J pouch is sealed with the "tip" of the J. Efferent limb syndrome (ELS), a rare condition after the creation of ileal pouch, is characterized by the presence of excessively long pouch outlet, leading to complete or partial obstruction of the pouch outlet. It typically occurs in S pouch patients with a dysfunctional or excessively long efferent limb. However, similar symptoms might also exist in J pouch patients with a pouch-rectal anastomosis (PRA) caused by a long rectal stump.[5] ELS (S pouch) and PRA (J pouch) are two common anatomical problems after restorative proctocolectomy causing pouch outlet obstruction, due to an elongated pouch outlet. Data relating to the disease course, diagnosis and management of ELS and PRA is scant beyond case reports.[6–8] The aim of this study was to evaluate the frequency, diagnosis and management of ELS (S pouch) and PRA (J pouch).

2. Patients and methods

2.1. Patients

This study was approved by the Cleveland Clinic Institutional Review Board (IRB). All eligible ileal pouch patients with ELS or PRA being followed up at our Pouch Center from 2002 to 2011, were identified from the IRB-approved Registry. The subspecialty Pouch Center is a national and international referral center for various ileal pouch disorders, with about 67% of patients coming from outside of the State of Ohio. Demographics, clinical, endoscopic, and radiographic features together with the management and outcomes were all prospectively maintained in the Registry. Both paper charts and electronic medical records would be carefully reviewed should data be missing.

2.2. Inclusion and exclusion criteria

In order to qualify for the study, patients needed to meet all the following inclusion criteria for having: (1) an ileal pouch; (2) a diagnosis of ELS or PRA; (3) regular follow-up at the Pouch Center; and (4) underlying inflammatory bowel disease (IBD). Ileal pouch patients with underlying FAP or other bowel diseases were excluded from this study. Patients with the continent ileostomy or Kock pouch were also excluded.

2.3. Diagnostic criteria

ELS was defined as the presence of a dysfunctional or excessively long efferent limb in S pouch patients, while PRA was defined as the presence of a long rectal stump in patients with J pouch-rectal anastomosis, with main symptoms related to the partial obstruction of the pouch outlet (Fig. 1).[5] Both ELS and PRA were diagnosed based on a combined assessment of symptoms, endoscopic, and/or radiographic features.

2.4. Patient groups

All the patients were divided into two groups based on the configuration of the pelvic ileal pouch: the ELS (S pouch) and PRA (J pouch) groups.

2.5. Definitions of variables

Chronic antibiotic-refractory pouchitis (CARP)—defined by a modified Pouchitis Disease Activity Index $\geq$ 5 points and symptoms lasting 4 weeks or more and failed to respond to a 4-week course of single antibiotic therapy (ciprofloxacin, metronidazole, or tinidazole);[9] cuffitis—endoscopic and histologic inflammation of the rectal cuff; Crohn's disease (CD) of the pouch—diagnosed based on our previously published criteria,[10] i.e., the presence of non-surgery-related perianal fistula or inflammation or ulcerations at the pre-pouch neo-terminal ileum or small bowel in the absence of non-steroidal anti-inflammatory drug (NSAID) use, or granulomas on histology; afferent limb syndrome—distal small bowel obstruction caused by an acute angulation, prolapse, or intussusception of the afferent limb at the junction to the pouch, in the absence of intraluminal mucosa associated strictures.[5]