



Case report

Acute abdomen due to J-pouch outlet obstruction: A case report and review of literature

Marcos Ricardo da Silva Rodrigues^{a,*}, Marcelo Augusto de Souza^b^a Colorectal Surgery Department, State University of Ponta Grossa Hospital - Paraná, Ponta Grossa, PR, Brazil^b State University of Ponta Grossa - Paraná, Ponta Grossa, PR, Brazil

ARTICLE INFO

Keywords:

Ileoanal pouch

Intestinal obstruction

Adenomatous polyposis coli

Colonoscopy

Restorative proctocolectomy

ABSTRACT

Introduction: Ileal pouch–anal anastomosis is the procedure of choice for re-establishing intestinal continuity for patients undergoing total proctocolectomy. Despite growing experience with this procedure, it is still associated with considerable morbidity rates.

Presentation of case: Herein, we report the case of a 14-year-old boy with familial adenomatous polyposis who underwent total proctocolectomy, ileal pouch–anal anastomosis, and diverting ileostomy. The patient developed early postoperative complications; on postoperative day 1, he developed bleeding from the pouch staple line, which was managed endoscopically. On postoperative day 15, he developed intestinal obstruction due to adhesions. One year after proctocolectomy, ileostomy closure was performed uneventfully. From postoperative day 3, the patient presented with obstructive signs such as abdominal distention, bloating, abdominal pain, and fever. Computed tomography identified diffuse intense intestinal distension with pouch dilatation. Digital rectal examination identified the pouch filled with liquid stool and no signs of anal canal anastomosis stenosis. The patient was considered to have pouch outlet obstruction and was successfully managed using bedside evacuation anoscopy. After 3 days, oral nutrition was re-established, and appropriate stool evacuation and fecal continence were achieved.

Discussion: Proctocolectomy with ileal pouch–anal anastomosis still carries a considerable complication rate. Proper identification of causative factors is mandatory for appropriate treatment. Pouch outlet obstruction can present as acute abdomen after diverting ileostomy closure. In this case, outlet obstruction was identified and treated by pouch evacuation, avoiding morbidity of a new surgical procedure.

Conclusion: We presented an unusual case of acute intestinal obstruction due to pouch outlet obstruction that was managed nonoperatively with bedside pouch evacuation.

1. Introduction

Since its introduction by Parks and Nicholls in 1978 [1], ileal pouch–anal anastomosis (IPAA) has been considered the standard procedure for re-establishing gastrointestinal continuity in patients undergoing restorative proctocolectomy (RPC). Over time, there has been growing experience related to IPAA, with a two-stage procedure, including J-pouch surgery with diverting ileostomy, being the most frequent approach.

IPAA is technically demanding and is associated with a significant morbidity rate and different types of structural, inflammatory, and functional complications. Additionally, complications of IPAA can be classified as early (30 days after surgery) and late (after ileostomy

closure). Management of pouch complications can be conservative or surgical and, most of the time, is very challenging [2].

This report presents an unusual case of a patient who developed intestinal obstruction following closure of diverting ileostomy due to J-pouch outlet obstruction; the patient was successfully managed by daily bedside pouch decompression with an anoscope device. This simple procedure prevented the patient from morbidities related to urgent surgical treatment. This work was written in accordance with the SCARE statement.³

2. Presentation of case

A 14-year-old male with a body mass index of 19 kg/m² was

* Corresponding author at: State University of Ponta Grossa Hospital, Colorectal Surgery Department, Alameda Nabuco de Araujo, 601, CEP 84031-510, Brazil.
E-mail address: mrsrodrigues@uepg.br (M.R. da Silva Rodrigues).

<https://doi.org/10.1016/j.ijscr.2021.106075>

Received 30 April 2021; Received in revised form 28 May 2021; Accepted 2 June 2021

Available online 15 June 2021

2210-2612/© 2021 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

admitted to our hospital because of rectal bleeding, diarrhea, and mucus discharge for 3 years. The patient denied any previous disease, use of medications or drugs. Colonoscopy identified multiple polypoid lesions in all colonic segments. Pathological analysis showed a tubulovillous adenoma with high-grade dysplasia, consistent with the features of familial adenomatous polyposis.

The patient underwent conventional RCP with J-pouch surgery and diverting ileostomy. On postoperative day 1, there was severe bleeding through the distal limb of ileostomy. Pouchoscopy with clots evacuation identified active bleeding from the pouch staple line, which was successfully managed by deploying two through-the-scope endoscopic clips (Olympus) (Fig. 1).

On postoperative day 15, he developed obstructive symptoms, such as abdominal pain and vomiting. Abdominal radiograph suggested an acute intestinal obstruction. Exploratory laparotomy identified ileal obstruction due to intestinal adhesions, which were lysed successfully. The patient was discharged 3 days after the surgery.

Owing to social issues, the patient underwent ileostomy closure 12 months later. Pouchoscopy prior to surgery showed a pouch chamber with normal mucosa and maintained staple line integrity.

The closure of loop ileostomy was uneventful. From postoperative day 3, the patient progressively developed nausea, bloating, isolated episodes of vomiting, diffuse abdominal pain and distention, some episodes of diarrhea, and hyperthermia (37.8 °C). He was readmitted to the hospital on postoperative day 9. Digital rectal examination identified a pouch filled with liquid stool and a uniform anastomotic staple line. No obstructive factors were observed. Erythrogram revealed a hemoglobin level of 13.2 g/dL and hematocrit of 37.8%; leukogram revealed leukocytosis (white blood cell count, $14.3 \times 10^9/L$) and neutrophilia (neutrophil count, $11.7 \times 10^9/L$). Computed tomography (CT) with rectal contrast showed extensive distension of all intestinal segments and remarkable distension of the pouch just above the pelvic floor, suggesting pouch outlet obstruction (Figs. 2 and 3). Digital rectal examination suggested good resting tonus and appropriate ability to relax and coordinate pelvic floor. The patient received parenteral antimicrobial therapy with third-generation cephalosporin and metronidazole. To promote pouch evacuation, an anoscope device (Fig. 4) was placed in the anal canal and a gentle abdominal massage was performed, leading to instant liquid stool and gas discharge. The procedure was performed at the bedside and repeated three times on a daily basis. There was progressive recovery of abdominal pain. After 3 days, the patient started to present spontaneous bowel movements, and an oral diet was re-established.

On outpatient monthly follow-up, the pouch was well tolerated, with

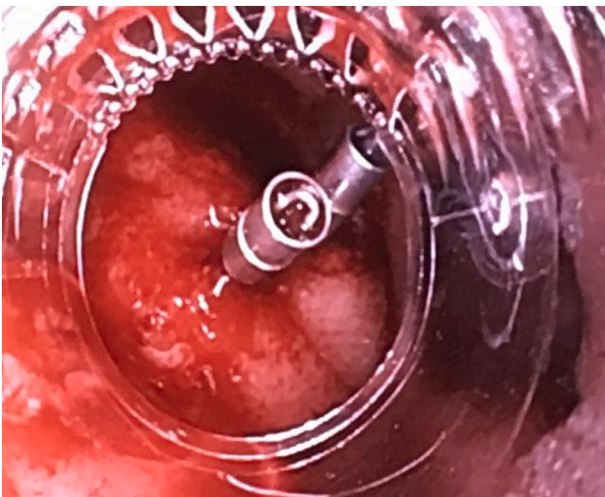


Fig. 1. Pouchoscopy showing active bleeding, managed with the deployment of endoscopic clips (Olympus).

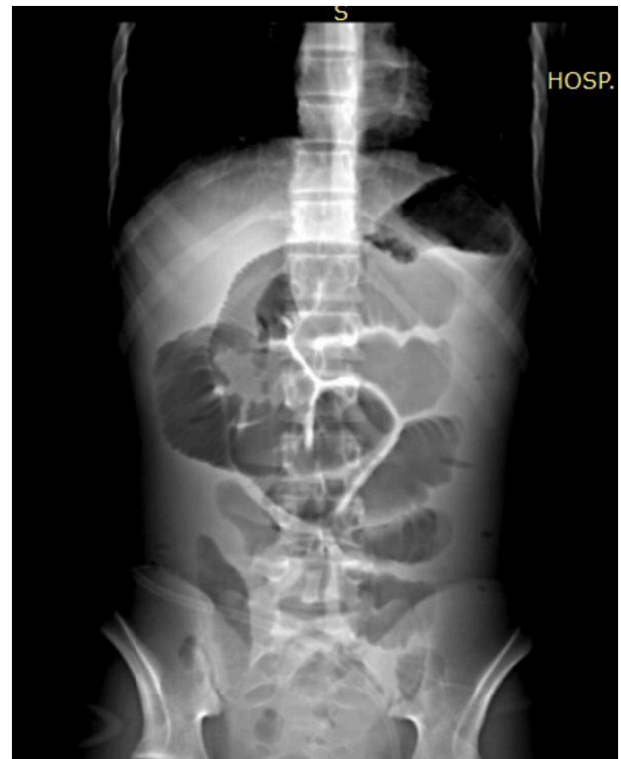


Fig. 2. Abdominal X-ray showing signs of intestinal obstruction.

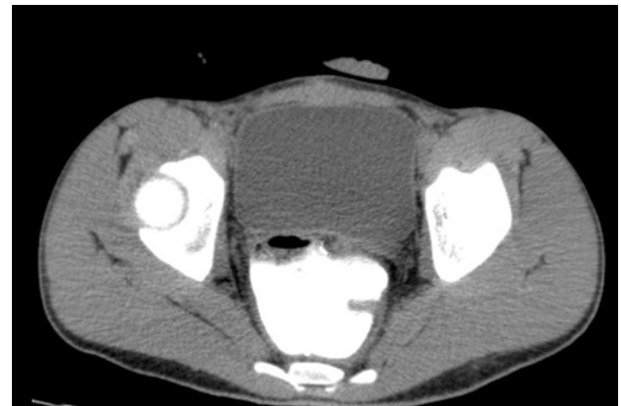


Fig. 3. Oral contrast CT scan showing dilated pouch.

no evacuation complaints and complete fecal continence. Surveillance pouchoscopy two months after surgery revealed good integrity of the pouch (Fig. 5).

3. Discussion

Pouch failure is a major concern for both surgeons and patients. Complications of RPC/IPAA can be classified as early (within 30 days after surgery) or late (after ileostomy closure). The most common early complications are pelvic sepsis, small-bowel obstruction, anastomotic leakage, and pouch bleeding [4]. In the present case, 24 h after surgery, the patient showed signs of hypovolemic shock and digestive bleeding, identified mainly from the distal limb of ileostomy. Bleeding following IPAA occurs in 1.5%–3.5% of the patients, and although less common, in 20% of patients, bleeding through diverting ileostomy is noticed [5,6]. Endoscopy was performed through ileostomy and transanally using a distal cap on the scope. After clot aspiration, active bleeding from the



Fig. 4. Anoscope used to promote pouch evacuation.

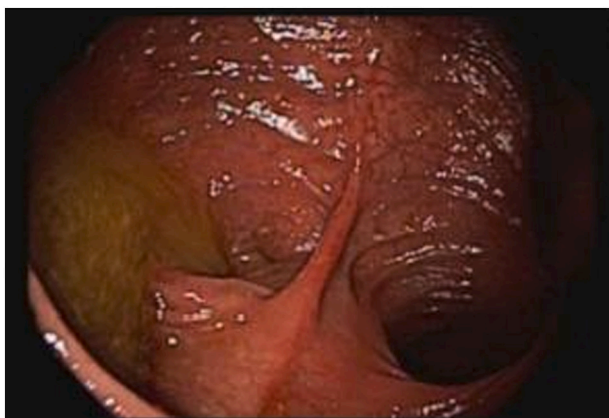


Fig. 5. Pouchoscopy showing good integrity of the pouch.

staple line was identified and successfully managed using two endoscopic clips. The use of a distal cap has been described as a method to facilitate clot evacuation in gastrointestinal bleeding [7]. Different approaches for pouch bleeding have been described, including washing with epinephrine, using cold saline enema, and suturing the bleeding point [4], with the more recent method being clipping of the staple line as an additional option [7]. The patient was discharged on postoperative day 6. Fifteen days after surgery, the patient was readmitted because of obstructive symptoms (vomiting and abdominal pain and distension). Owing to the large dissected area, patients who undergo RPC/IPAA are at a higher risk of developing postoperative intestinal obstruction, with rates ranging from 15% to 44%, and up to 20% of patients require surgical intervention. Obstruction can be partial or complete; it is caused by postoperative adhesions, volvulus, internal herniation of the bowel, or torsion of ileostomy [4].

Intestinal obstruction can also occur after ileostomy closure and is generally related to luminal stenosis or adhesions at the closure site [4]. In this case report, the patient was discharged on day 2 after ileostomy closure, and from postoperative day 3, the patient developed progressive intestinal obstruction signs. After 9 days, he returned to the hospital complaining of abdominal distension, nausea, vomiting, and episodes of

diarrhea associated with hyperthermia and leukocytosis. Based on the results of CT scan, pouch outlet obstruction was considered. Poor functional results after IPAA can occur in up to 5% of patients, and proper diagnosis is mandatory for appropriate treatment.

The term “floppy pouch complex” (FPC) can be used to encompass most of the mechanical causes of pouch dysfunction. Frequent symptoms of pouch dysfunction include dyschezia, incomplete evacuation, and bloating. It has several causes, including pouch prolapse, afferent limb syndrome, redundant loop, and folding pouch diagnosed by proctoscopy or contrast studies such as magnetic resonance defecography [9]. Among the risk factors for FPC, lower body mass index, smaller peripouch fat area, and female sex have been described [8]. The patient in this report presented with a low body mass index of 19 kg/m², and this might have influenced the pouch outlet obstruction outcome. In mild cases, conservative treatment, such as avoiding excessive straining, physical therapy, and modifying stool consistency, may be successful. Severe cases may require surgical treatment [9]. Perry et al. [10] reported the use of a catheter (Medena) to evacuate the pouch in an outpatient setting with promising results. In this case report, the patient developed symptoms of intestinal obstruction due to outlet obstruction and was managed at the bedside with pouch evacuation using an anoscope device. After a few evacuation maneuvers, the patient was able to naturally evacuate the pouch with no external aid and was warned to avoid excessive straining. He complied well, requiring no further intervention.

4. Conclusion

Despite the growing experience, RPC still presents with considerable morbidity rates. We presented an unusual case of a patient with pouch outlet obstruction who developed intestinal obstruction symptoms; the patient was managed conservatively with bedside pouch evacuation using an anoscope with excellent outcomes.

Ethical approval

Ethical approval was obtained from the appropriate institutional ethics review board.

Consent

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available upon the journal's request.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Guarantor

Marcos R. S. Rodrigues.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CRediT authorship contribution statement

MRSR: Conducted surgery procedure; study concept; data collection; writing – original draft; writing – review and editing. MAS: Data collection; Writing – Original Draft; Writing – Review and Editing.

Declaration of competing interest

None.

References

- [1] A.G. Parks, R.J. Nicholls, Proctocolectomy without ileostomy for ulcerative colitis, *Br. Med. J.* 2 (6130) (1978) 85–88.
- [2] F. Khan, B. Shen, Complications related to J-pouch surgery, *Gastroenterol. Hepatol.* 14 (10) (2018) 571–576.
- [4] E. Gorgun, F.H. Remzi, Complications of ileoanal pouches, *Clin. Colon Rectal Surg.* 17 (1) (2004) 43–55.
- [5] Francone TD, Champagne B. Considerations and complications in patients undergoing ileal pouch anal anastomosis. *Surg. Clin. North Am.* [Internet]. 2013;93(1):107–43. Available from: <https://doi.org/10.1016/j.suc.2012.09.004>.
- [6] X.R. Wu, N. Lan, B. Shen, Endoscopic management of anastomotic bleeding in the ileal pouch with staples removal and clipping, *J Coloproctology* 33 (1) (2013) 39–41.
- [7] T.G. Moreels, M. Lotry, B. Roth, P.A. Pelckmans, Distal cap to facilitate removal of blood clots during endoscopic hemostasis for upper gastrointestinal bleeding, *Endoscopy* 41 (Suppl. 2) (2009), 8214478.
- [8] X.H. Gao, F. Khan, G.Y. Yu, J.Q. Li, H. Chouhan, E. Remer, et al., Lower peripouch fat area is related with increased frequency of pouch prolapse and floppy pouch complex in inflammatory bowel disease patients, *Int. J. Color. Dis.* 35 (4) (2020) 665–674.
- [9] F. Khan, T.L. Hull, B. Shen, Diagnosis and management of floppy pouch complex, *Gastroenterol Rep* 6 (4) (2018) 246–256.
- [10] Z.L. Perry-Woodford, McLaughlin SD, Ileoanal pouch dysfunction and the use of a Medena catheter following hospital discharge, *Br. J. Community Nurs.* 14 (11) (2009) 502–506.