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CASE REPORT | ENDOSCOPY

Endoscopic Treatment of Bleeding Diversion Pouchitis with High-Concentration Dextrose Spray

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ABSTRACT

Surgical closure of stoma with the reestablishment of gut continuity is the only curative intervention available for inflammatory bowel disease patients with diversion pouchitis, proctitis, or colitis. For patients who are not candidates for surgical reestablishment of bowel continuity, the alternative nonsurgical approaches, such as topical therapy with mesalamine, corticosteroids, or short-chain fatty acids, have only shown modest efficacy. The management of massive bleeding from diversion pouchitis has not been described. We present a patient with ulcerative colitis with severe hematochezia and diffuse mucosal bleeding in a diverted ileal pouch, which was successfully treated with endoscopic spray of hypertonic glucose.

INTRODUCTION

Despite advances in medical therapy in patients with inflammatory bowel disease (IBD), a significant number of patients with Crohn's disease or ulcerative colitis (UC) eventually require bowel resection surgery. Restorative proctocolectomy with an ileal pouch-anal anastomosis (IPAA) has become the surgical treatment of choice for UC patients who require colectomy. During the construction of the ileal pouch, a protective diverting ileostomy is often required to promote the maturation and anastomosis of the newly built ileal pouch. In addition, temporary or permanent ileostomy may be created in patients with pouch failure, leaving the pouch body in situ. The diverted pouch can develop pouchitis with bleeding.

Similar to diversion colitis, diversion pouchitis is an inflammatory disorder occurring in the ileal pouch resulting from the exclusion of the fecal stream and a subsequent lack of nutrients from luminal bacteria. Patients generally present with varying symptoms such as tenesmus, urgency, bloody or mucus discharge, and abdominal pain. Chronic inflammation, even when asymptomatic, can lead to the formation of severe strictures and accumulation of mucus, which may cause formation of symptomatic bezoars. The diagnosis of diversion pouchitis is based on clinical and surgical history and endoscopic and histologic inflammation. Though rare, some patients may present with profuse mucosal bleeding, and the management of such a presentation can be challenging.[1] Common therapeutic approaches to gastrointestinal mucosal bleeding include irrigation with iced normal saline and saline with adrenaline enemas, thermocoagulation, endoclipping, and transanal suturing.[1,2] These approaches can prove ineffective in cases of diffuse bleeding with no discernable source. Hypertonic glucose spray, which is used in the treatment of variceal and peptic ulcer-associated bleeding, has been shown to initiate hemostasis in radiation enteritis-associated mucosal bleeding.[3,4]

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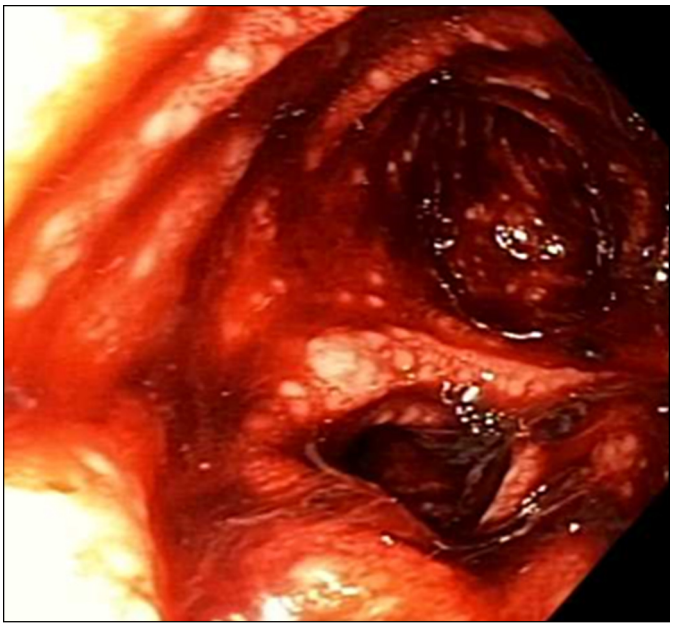

Figure 1. Pouchoscopy showing diffuse active bleeding of the diverted pouch.

Video 1. Endoscopic spraying of the pouch mucosa with 150 mL 50% dextrose via catheter, resulting in immediate hemostasis. Watch the video: http://s3.gi.org/media/links/shen_video.mp4.

CASE PRESENTATION

The patient was a 44-year-old man who presented to our Interventional IBD Unit with profuse bleeding from the anus. His past medical history was significant for UC complicated by colitis-associated low-grade dysplasia, status postlaparoscopic total proctocolectomy with 2-stage IPAA in 2008. His J-pouch surgery was complicated by pouchitis, cuffitis, and the leaks at the tip of the "J" and at the anastomosis. In 2012, a presacral sinus developed from the chronic anastomotic leak, which was successfully treated with needle-knife sinusotomy. However, the tip of the "J" leak persisted despite multiple sessions of endoscopic treatment with endoclips and an over-the-scope clipping system, necessitating diverting loop ileostomy.

He later presented in June 2015 with profuse hematochezia resulting in an emergency room visit. An emergent pouchoscopy under conscious sedation revealed diffuse active bleeding from the diverted afferent limb and pouch body. The mucosa was edematous and coated with old and fresh blood, with active oozing. No single bleeding source was found. We believe that the bleeding stemmed from active oozing from severe diversion pouchitis (Figure 1). The mucosa was endoscopically sprayed with 150 mL 50% dextrose via a catheter, which resulted in immediate hemostasis (Video 1;

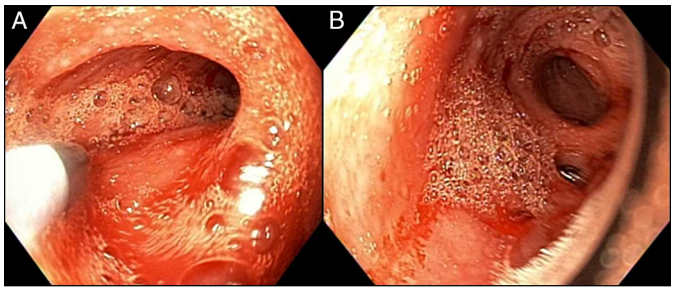

Figure 2. (A) D50 spray in action, and (B) the appearance of the pouch mucosa immediately after treatment.

Figure 2). After the dextrose administration, the patient reported complete resolution of hematochezia during the hospitalization. Follow-up pouchoscopy 2 weeks after the dextrose spray showed normal pouch mucosa with no evidence of bleeding or mucosal friability (Figure 3). The patient was closely followed up by clinical assessment for 6 months, when he underwent a pouch-redo surgery after the initial endoscopy therapy. The patient did not experience further episodes of recurrent bleeding during the 6-month follow-up. The patient was not on any anticoagulation medicines before or after the bleeding episodes. No prescribed medicines were given after the endoscopic therapy.

DISCUSSION

Diversion colitis and diversion proctitis are common in patients with fecal diversion. The common clinical presentations of diversion colitis/proctitis include pelvic pain, urgency, and rectal discharge of mucus or blood. A large quantity of spontaneous blood discharge is uncommon. The best treatment option is the reestablishment of gut continuity. Various agents have been used to treat diversion colitis/proctitis, including topical mesalamines and corticosteroids, and short-

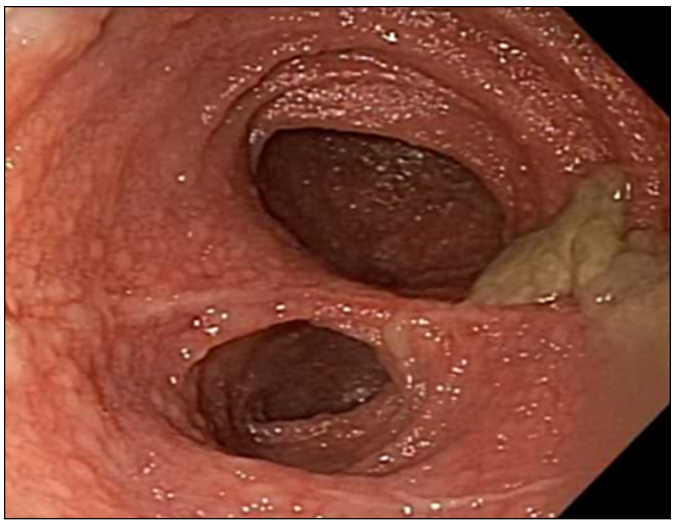

Figure 3. Appearance of the pouch mucosa 2 weeks later.

chain fatty acid (SCFA) enema, with various efficacies for mucosal inflammation. There are no published studies on the efficacy of those agents in controlling brisk bleeding.

The incidence of diversion pouchitis is unknown. It appears more commonly in patients with underlying IBD. Nonsurgical approaches for the treatment of diversion pouchitis include the use of SCFA enemas, topical 5-aminosalicylic acids, and topical glucocorticoids. Outcomes from studies of the efficacy of these medical approaches have been conflicting, and only surgical reanastomosis with the reestablishment of gut continuity remains the curative approach. There are some unique aspects of diversion pouchitis. For example, SCFAs have been considered as the essential nutrients for colonic epithelial cells. The efficacy for the inflammation of pouch mucosa is not clear. We felt that medical therapy with such agents might not be effective in controlling active bleeding.

The main presentation of our case was acute and profuse bleeding. The patient was reluctant to have the surgery due to multiple previous complications. Since there was no discernible spot source of bleeding on endoscopic exam, routine endoscopic treatment techniques, such as intralesional injection, heat probe, and argon plasma coagulation, were not feasible. We opted for endoscopic spray with 50% dextrose, and long-lasting hemostasis was achieved. It is thought that hypertonic glucose works thorough osmotic dehydration and sclerosant effects, inducing long-term mural necrosis and fibrotic obliteration of mucosal vessels.[3,4]

We present the first case of hypertonic glucose spray for the management of diffuse diversion ileal pouch bleeding. Glucose spray is safe and inexpensive, and it has a very low chance of causing transient hyperglycemia because there is no direct injection of the hypertonic solution into blood vessels. The approach has the potential to reduce bleeding recurrence and need for surgical interventions. Its superiority over other approaches will have to be explored through case series or randomized controlled trials.

DISCLOSURES

Author contributions: CT Nyabanga drafted the initial version of the manuscript. B. Shen revised the manuscript for intellectual content and is the article guarantor.

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Informed consent was obtained for this case report.

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REFERENCES

1. Gorgun E, Remzi FH. Complications of ileoanal pouches. *Clin Colon Rectal Surg*. 2004;17:43–55.
2. Fazio VW, Ziv Y, Church JM, et al. Ileal pouch-anal anastomoses complications and function in 1005 patients. *Ann Surg*. 1995;222:120–7.
3. Chang KY, Wu CS, Chen PC. Prospective, randomized trial of hypertonic glucose water and sodium tetradecyl sulfate for gastric variceal bleeding in patients with advanced liver cirrhosis. *Endoscopy*. 1996;28:481–6.
4. Tian C, Mehta P, Shen B. Endoscopic therapy of bleeding from radiation enteritis with hypertonic glucose spray. *ACG Case Rep J*. 2014;1:181–3.