

Endoscopic Sinusotomy Using Needle Knife Technique for Treatment of H-Pouch With Leak and Sinus

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ABSTRACT

A 62-year-old patient with a history of ulcerative colitis and total colectomy with ileal pouch-anal anastomosis was referred to our pouch center for rectal pain, loose stool, and perianal swelling. He was diagnosed with chronic fistula and anastomotic stricture for which he had excision of J-pouch and creation of H-pouch. Surveillance workup after surgery revealed pouch sinus, which was treated with needle-knife sinusotomy (NKS_i). This is the first case in the literature of an H-pouch complicated with anastomotic sinus successfully treated with NKS_i. We propose using NKS_i as the preferred technique for pouch sinuses.

INTRODUCTION

Restorative proctocolectomy with ileal-pouch anal anastomosis (IPAA) is the treatment of choice for medically refractory ulcerative colitis (UC), colitis-associated dysplasia, and familial adenomatous polyposis. Although IPAA surgery has dramatically improved the quality of life of patients, complications are common and can lead to pouch failure. Pouch revision surgery has been shown to be effective in treating pouch failure from structural or mechanical etiologies. Owing to anatomical difficulties, the H-shaped pouch procedure is occasionally performed during salvage surgery for a failed J-pouch. Complications of H-pouch and their management have seldom been reported. We present the first reported case of an H-pouch complicated by a presacral sinus successfully treated with needle-knife sinusotomy (NKS_i).

CASE REPORT

A 62-year-old man with a medical history of UC, colon perforation, status post emergent total colectomy with IPAA 15 years ago was referred to our pouch center for ongoing symptoms of progressive rectal pain, loose stool, and perianal swelling. Workup at our center showed pouch stricture in a barium enema study. Flexible pouchoscopy and examination under anesthesia revealed chronic fistula, abscess, and anastomotic stricture, for which he had an exploratory laparotomy, lysis of adhesions, incision and drainage (I&D), extensive takedown of ileostomy, excision of the old J-pouch, excision of the anastomotic stricture with creation of a H-pouch with mucosectomy, handsewn anastomosis, and diverting loop ileostomy. Routine water-soluble contrast enema and computed tomography of the abdomen after surgery again revealed a pouch anastomotic leak (Figure 1). Pouchoscopy confirmed the deep sinus with thick walls (Figure 2).

For the next 2 months, the patient was monitored off of any antibiotics. However, repeat pouchoscopy revealed a persistent pouch sinus. The decision was made to treat the sinus with endoscopic NKS_i followed by deployment of multiple endoclips along the edges of the incised sinus wall (Figure 3). The procedure was performed in an outpatient setting, with the patient under conscious sedation. Carbon dioxide insufflation was used during the procedure. A microvase needle-knife (Boston Scientific, Marlborough, MA) was used to cut the posterior wall between the distal pouch body and the sinus, in a setting of endoscopic retrograde cholangiopancreatography endocut. Subsequently, both edges of the incised pouch wall were separated with an endoclip (Cook Medical, Bloomington, IN) to prevent bleeding and reformation of the sinus.



Figure 1. Water-soluble contrast enema showing H-pouch sinus before needle-knife sinusotomy.

After the procedure, the patient was observed in the endoscopy recovery unit for 30 minutes and discharged home. The patient’s symptoms improved significantly after the procedure, and he remained asymptomatic at 2 months after the procedure. A follow-up water-soluble contrast enema at 2 months showed an H-pouch with a normal appearance and no leak (Figure 4).

DISCUSSION

Restorative proctocolectomy with ileal pouch-anal anastomosis is the surgical treatment of choice for patients with severe UC refractory to medical treatment. J, S, and W are the most common pouch configurations used for IPAA. On the other hand, the H-pouch configuration is rare and predominantly used for salvaging a failed IPAA (Figure 5).¹ In 2017, a case series of 5 patients by Aydinli, demonstrated that H-pouch

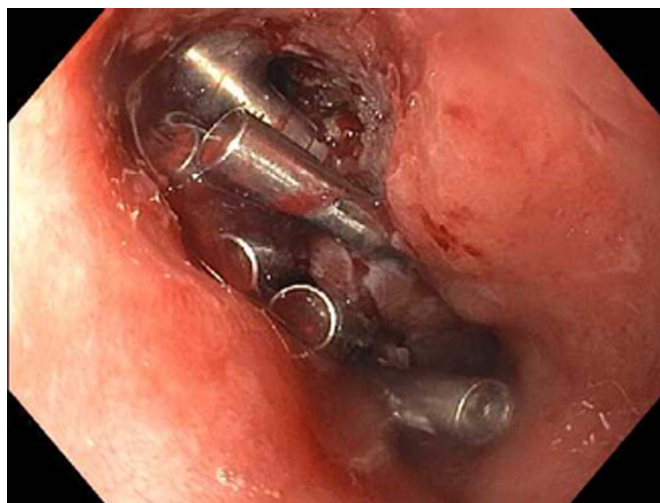


Figure 3. Pouchoscopy showing the healing of H-pouch sinus after needle knife sinusotomy.

configuration is a good and rare alternative for a failed IPAA.² Pouch sinus is a relatively infrequent complication of IPAA and is defined as a blind-ended tract resulting from a chronic anastomotic leak. It occurs only in 2.8%–8% of patients undergoing IPAA, but if left untreated, it can lead to pouch failure.^{3–7}

Patients with a pouch sinus may present with symptoms, such as pelvic discomfort, urgency, and dyschezia; others may be asymptomatic.^{8,9} It is commonly found incidentally during routine surveillance before or after ileostomy closure. Pouchoscopy with a thorough examination usually can detect the opening of sinuses. However, contrast radiographic examination or magnetic resonance imaging is often needed to characterize the sinuses and differentiate them from fistulae. The treatment is challenging, and the ideal management of pouch sinuses are not well defined yet. A conservative watch-and-wait

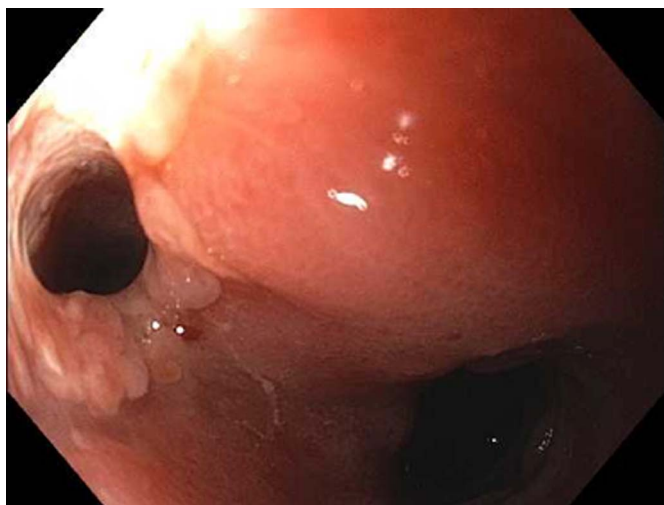


Figure 2. Pouchoscopy showing H-pouch sinus before needle knife sinusotomy.

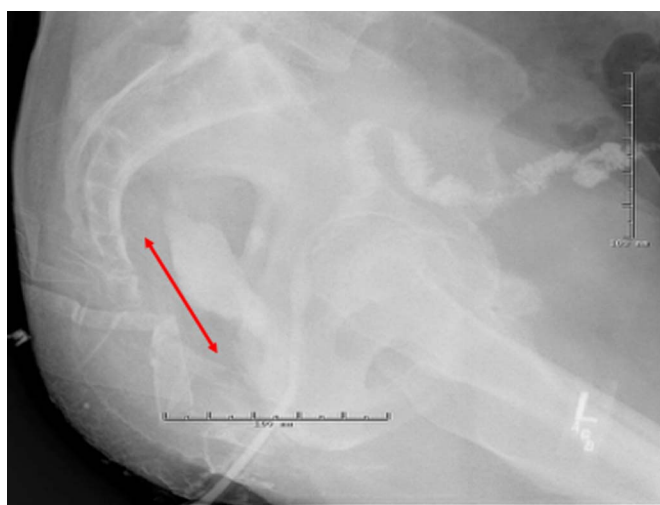


Figure 4. Water-soluble contrast enema showing the healing of H-pouch sinus after needle knife sinusotomy.

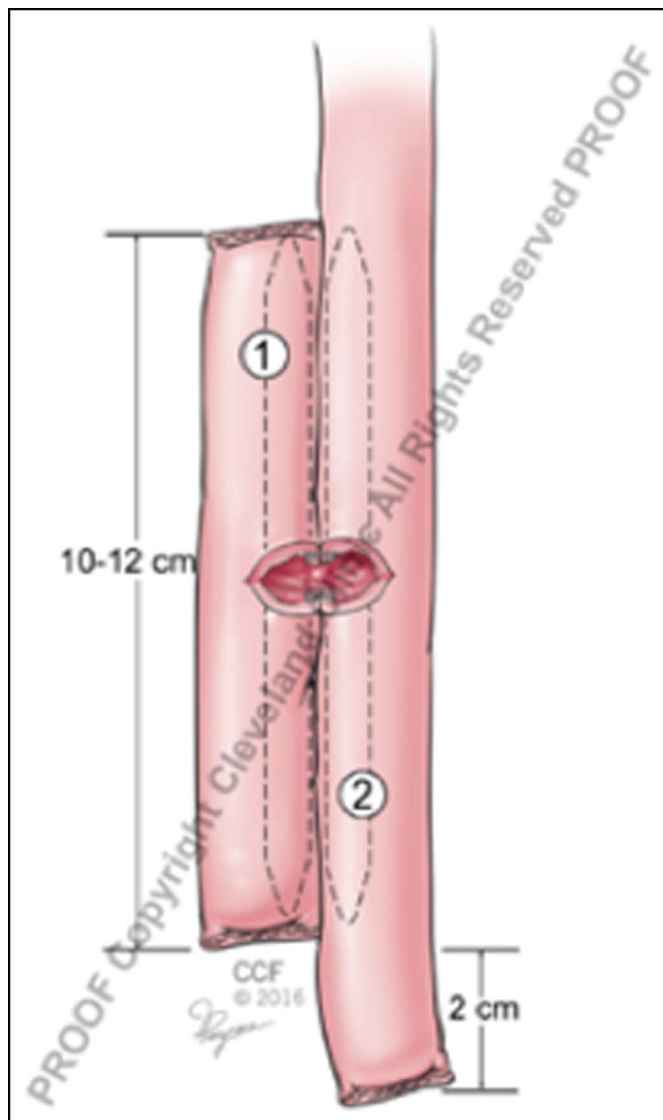


Figure 5. H-pouch illustration. Reprinted with permission, Cleveland Clinic Center for Medical Art & Photography © 2019. All Rights Reserved.

strategy is commonly practiced in asymptomatic cases in which patients are followed up with repeated imaging at regular intervals to monitor for sinus healing.^{3,5}

In cases where watchful waiting does not work, patients have habitually been treated with fecal diversion by an ileostomy, I&D, surgical unroofing, and pouch revision.¹⁰ Endoscopic needle-knife therapy provides a viable and effective alternative when spontaneous healing of the pouch sinus does not occur.¹¹ In 2010, our group reported the first case of curative endoscopic NKS*i* therapy for a pouch sinus, and since then, this technique

has gained favor in treating pouch sinuses, sparing most patients from the invasiveness of surgical approaches.⁸ The purpose of the procedure is to cut the wall between the lumen of the pouch body and that of the presacral sinus, essentially making them into a single space. We report for the first time a case of an H-pouch complicated by an anastomotic sinus successfully treated with NKS*i*. We suggest using NKS*i* as the preferred technique for H-pouch sinuses before performing any invasive surgical procedure.

DISCLOSURES

Author contributions: G. Khoudari wrote the manuscript. A. Singh edited the manuscript. B. Shen performed the NKS*i*, supervised, edited the manuscript, and is the article guarantor.

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Informed consent was obtained for this case report.

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