

# Successful Closure of the Tip of the “J” Fistula of the Ileal Pouch With Double Over-the-Scope Clips

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## ABSTRACT

Ileal pouch-anal anastomosis is the surgical procedure of choice for patients who require colectomy for complicated ulcerative colitis with or without associated dysplasia and familial adenomatous polyposis. Leaks from the suture lines or anastomosis can lead to pouch failure. Treatment options have been radiographic drainage and surgical intervention. Endoscopic therapy has emerged a viable nonsurgical treatment option for some of the complications associated with J-pouch surgery. Here, we present a case of endoscopic management of a leak from the tip of the J-pouch with sequential application of 2 over-the-scope clips.

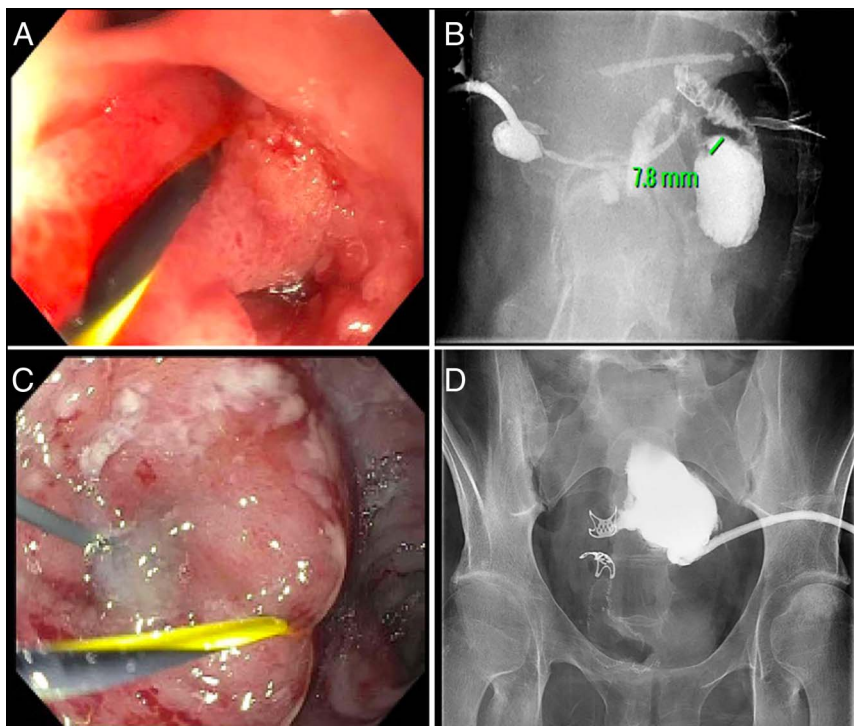
## INTRODUCTION

Restorative proctocolectomy with ileal pouch-anal anastomosis (IPAA), commonly having J-pouch configuration, is the procedure of choice for patients with complicated ulcerative colitis (UC) dysplasia associated with UC, or familial adenomatous polyposis who require colectomy.<sup>1-4</sup> The mortality rate after pouch surgery has been reported to be <1%.<sup>5</sup> Postoperative complications occur in 5% to 35% of the cases, including pouchitis, cuffitis, anastomotic strictures, and leaks, fistulae, and irritable pouch syndrome.<sup>1,4,6</sup> Rates of pouch leaks range from 5% to 18%.<sup>1</sup> The staple or suture lines at the stoma closure site, tip of the “J,” pouch body, and pouch-anal anastomosis are common sites for leaks<sup>6,7</sup> which can lead to pouch failure.<sup>2,8</sup> Endoscopic therapy has become an effective intervention for structural pouch complications such as strictures, obstructions, fistulae, and leaks.<sup>7,9</sup>

## CASE REPORT

A 21-year-old man was diagnosed with ulcerative proctosigmoiditis in 2017. A year later, he was hospitalized for severe pancolitis (Mayo 3) while on oral mesalamine. Infliximab was started in 2018, and a few months later, he was switched to adalimumab and methotrexate because of incomplete response to infliximab. He did not respond to these medical interventions, and by the end of 2018, a staged laparoscopic proctocolectomy with IPAA with J-pouch configuration was performed. The first stage with subtotal laparoscopic colectomy with end ileostomy was uneventful. The second stage with completion of the proctectomy and IPAA was complicated by persistent pelvic abscesses. These events delayed the third-stage surgery (reversal of ileostomy) for about 1 year. Shortly after the reversal of the ileostomy, he developed an inlet stricture of the afferent limb, intra-abdominal and pelvic abscesses, and an enterocutaneous fistula (ECF) leading to rediversion and abscess drainage by interventional radiology. Ustekinumab was started for presumptive Crohn's disease, and he was referred for endoscopic management of a pouch leak with persistent abscess and ECF.

The patient presented with an abdominal catheter draining 60–70 cc of a light straw-colored fluid per day. Magnetic resonance imaging showed a nondistended rectal pouch, no evidence of obstruction, and nondrainable pelvic collections. Because of a limited assessment for a fistula or sinus tract, fluoroscopic contrast enema was recommended. The first pouchoscopy of the diverted pouch showed diffuse pouchitis with friable mucosa and detected a defect at the tip of the “J” with a Jagwire (Boston Scientific, Natick, MA) (Figure 1). The area was tattooed, and a 12-t over-the-scope clip (OTSC) (Ovesco Endoscopy AG, Tübingen, Germany) was placed with an anchor without complications. A follow-up fistulogram revealed an 8.2-cm sinus tract extending posteriorly to the J-pouch



**Figure 1.** Endoscopic clipping of the tip of the “J” fistula. (A) Endoscopic appearance of fistula orifice before treatment; (B) fistulogram after the first therapy showing persistent track; (C) endoscopic clipping of exit orifice at the pouch inlet, in addition to the clip at the tip of the “J”; (D) follow-up fistulogram showing complete closure of the fistula with the absence of contrast in the pouch body.

and communicating with a 0.7-cm defect in the anterior superior J-pouch and opacification of the pouch, suggesting a persistent leak, despite the OTSC being in place (Figure 1).

Repeat pouchoscopy 4 weeks later showed the previously placed clip at the tip of the J-pouch. Betadine injected through the abdominal drainage catheter demonstrated an opening at the pouch inlet and no leak at the tip of the pouch where the first clip was placed. The leak at the pouch inlet was found to communicate with the tip of the “J” detected by a Jagwire (Figure 1). An enteroenteric fistula from the tip of the “J” to the pouch inlet was diagnosed. A second 12-t OTSC with an anchor was deployed to the fistula opening at the pouch inlet, and subsequent injections of betadine confirmed the technical success of the procedure. A postprocedure fistulogram showed the 2 OTSCs in place and resolution of the leak (Figure 1). The patient tolerated the procedure well and was discharged home the same day. He is awaiting reversal of the diverting ileostomy and stoma closure.

## DISCUSSION

This case demonstrates successful endoscopic treatment of enteroenteric fistula from the tip of the “J” and pouch inlet with persistent pelvic abscess with the application of 2 OTSCs at each end of the fistula. To the best of our knowledge, this is the only case in the literature to date where an enteroenteric fistula was successfully closed with the application of an OTSC at both openings.

The main etiologies of pouch leaks were tension, ischemia, or mesh placement at the suture lines or staple lines. Although de novo fistulizing Crohn’s disease can develop in UC patients undergoing IPAA,<sup>10</sup> the preprocedural diagnosis of Crohn’s disease might not be correct. It is likely that the fistula resulted from surgical factors, as the anastomotic location is prone to the development of surgical leaks and the patient responded favorably to endoscopic clipping and had a poor response to ustekinumab.

The tip of the “J” and pouch-anal anastomosis are 2 of the most common sites for leaks with the later being the most common location of the 2.<sup>6,8</sup> The tip of the “J” leak commonly presents with abdominal or pelvic abscess. A complex leak may demonstrate ECF or enteroenteric fistula. In many patients, this type leak can have an indolent course and its location deep in the pelvis can make diagnosis difficult as demonstrated in a study of 27 patients with tip of “J”-pouch leaks where 22% of the participants had their leak diagnosed at the time of salvage surgery.<sup>11</sup>

Therapeutic options for pouch leaks before considering salvage surgery or redo of the pouch include drainage with laparotomy and transanal or computed tomography-guided drainage.<sup>2</sup> Recently, endoscopic therapy has become a safe and effective alternative in the management of pouch complications.<sup>7,9</sup> A simple leak at the tip of the “J” has been treated with OTSC as demonstrated in a previous case series<sup>7</sup> and case reports.<sup>12,13</sup>

Although endosponge or endoluminal vacuum-assisted therapy has been used for the treatment of acute anastomotic leaks after IPAA,<sup>14,15</sup> its role in the management of chronic leaks or fistulas has not been established.

Superficial enteroenteric fistulae with a mature fistula track can be treated with endoscopic fistulotomy.<sup>11</sup> In this case, we used clips rather than fistulotomy because the fistula track was not mature. Endoscopic intervention proved to be an effective therapy for this young patient. Studies comparing the safety and efficacy of OTSC, endosponge, and other endoscopic modalities in the treatment acute anastomotic leaks with abscess would be interesting.

## DISCLOSURES

Author contributions: Y. Lescaille wrote the manuscript and approved the final manuscript. J. Rosh and R. Kiran revised the manuscript for intellectual content and approved the final manuscript. B. Shen revised the manuscript for intellectual content, approved the final manuscript, and is the article guarantor.

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