ORIGINAL ARTICLE

Endoscopic incisional therapy for giant bridged pseudopolyposis of the esophagus in a patient with upper GI Crohn's disease

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INTRODUCTION

Esophageal Crohn's disease (eCD) has a prevalence of 0.2% to 1.8%.[1] Endoscopic manifestations are variable, ranging from erosive disease to advanced phenotypes such as stricturing or pseudopolyposis. Pseudopolyps develop from cycles of inflammation and healing. Giant forms are greater than 15 mm, and bridged types are elongated and filiform, which connect opposing walls.[2] Endoscopic intervention is indicated in symptomatic eCD (eg, dysphagia).

With the goal of restoring luminal patency, endoscopic incisional therapy (EIT) uses various electrocautery-enhanced knives to incise and cut tissue.[3] Although this method has established feasibility and efficacy for benign strictures refractory to dilation, to our knowledge, it has yet to be demonstrated in the setting of bridged pseudopolyposis.

CASE

We evaluated a 38-year-old male with colonic, perianal, and eCD (initially diagnosed as ulcerative colitis in 2000). Given disease progression on 5-ASA, infliximab, and vedolizumab, he underwent subtotal colectomy with end-ileostomy in 2016. He was maintained on adalimumab and methotrexate. From a foregut perspective, he began having progressive solid-food dysphagia, weight loss (32 lb), and food bolus impactions in 2012. Index EGD in 2015 revealed a proximal esophageal stricture and multiple areas of "false passages and bridges." Histopathology was suggestive of chronic inflammation. His symptoms were refractory to oral and topical steroids as well as bougie dilations (up to 33F). Although he was adherent to a soft and pureed diet, he still experienced food impaction with regurgitation 1 to 2 times per month, with progressive weight loss. He was thus referred for endoscopic therapy.

A regular gastroscope could not traverse a proximal stricture 20 cm from the incisors (Video 1, available at www.videogie.org). The stricture was dilated to 13.5 mm by using a balloon dilation catheter. Distally, we encountered numerous giant bridged pseudopolyps forming a weblike tract from 30 to 38 cm (Fig. 1A). We were able to negotiate the gastroscope through this segment into the stomach and duodenum, which were normal. Despite the presence of a proximal stricture, we believed that the distal pseudopolyps were also contributing to the patient's dysphagia given the lack of symptomatic improvement from prior dilations.

We performed EIT with an insulated tip–type endoscopic submucosal dissection (ESD) knife (Fig. 1B). Beginning proximally, we incised and cut each pseudopolyp bridge in a radial fashion toward the center of the lumen. To address the potential concern for bridge reformation, the remnant filiform-type tissue was resected with a 15-mm snare. Luminal patency was achieved (Fig. 1C), allowing the patient to advance his diet to solids.

Follow-up EGD in 1 month again revealed the tight proximal stricture. We used an ultra-slim gastroscope as we were unable to traverse this segment with a regular gastroscope despite balloon dilation. Multiple false lumens with retained debris were noted just distal to the stricture, potentially formed from longer bridged pseudopolyps (Fig. 2A and B). The prior EIT site appeared healed and patent.

To provide further clinical improvement, we performed repeat EIT for false-lumen takedown. A needle-knife was fabricated to fit through the 2.2 mm working channel of the ultra-slim gastroscope by cutting the distal tip of a 5.1F ERCP sphincterotome. We note the absence of an insulated tip, which would increase the risk of perforation during this procedure.

Close endoscopic examination suggested that the false lumens were unlikely to be fistulae tracts. Additionally, after inserting a guidewire through the false lumen, endoscopic visualization of the wire distally in the true lumen confirmed this. Although we acknowledged the risk of mediastinal guidewire perforation, placing the wire into the false lumen also allowed us to use it as a scaffold to facilitate our goal of cutting the bridge craniocaudally toward the true lumen to prevent esophageal wall injury (Fig. 2B). By repeating this

Abbreviations: eCD, esophageal Crohn's disease; EIT, endoscopic incisional therapy; ESD, endoscopic submucosal dissection.

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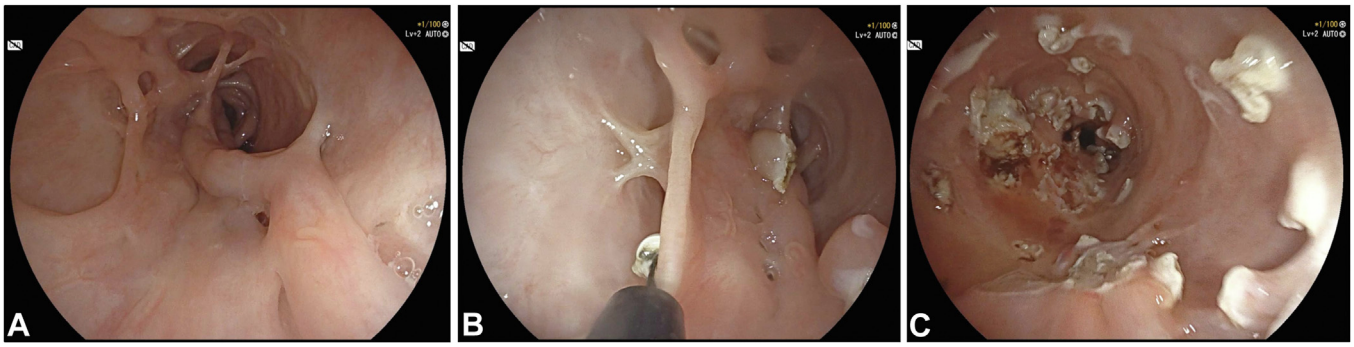

Figure 1. Diagnosis and management of distal esophageal bridged pseudopolyposis using a regular gastroscope after proximal stricture balloon dilation. **A,** Luminal obstruction secondary to bridged pseudopolyps in the distal esophagus. **B,** EIT of a giant bridged pseudopolyp using an insulated tip–type ESD knife. **C,** Improved luminal patency was achieved after consecutive EIT and snare resection of the distal esophageal bridged pseudopolyps. *ESD*, Endoscopic submucosal dissection; *EIT*, endoscopic incisional therapy.

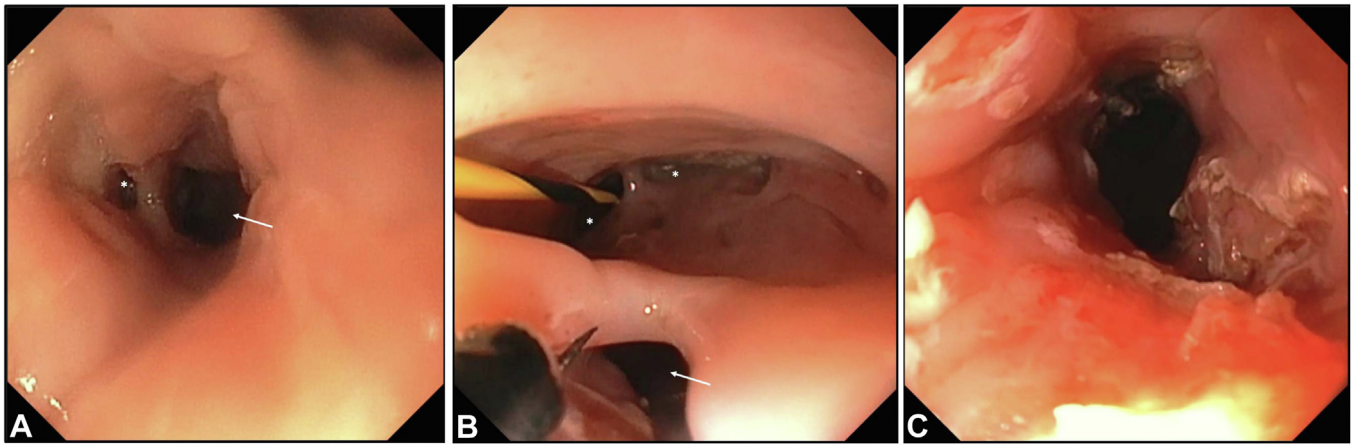

Figure 2. Diagnosis and management of the proximal esophageal false lumens using an ultraslim gastroscope. **A** and **B,** The proximal esophageal false lumens with accumulating debris are depicted by an *asterisk* whereas the true esophageal lumen is highlighted with an *arrow*. **B,** After placing a guidewire through the false lumen, EIT of a long-segment bridged pseudopolyp was conducted using a needle-knife fabricated from a miniature ERCP sphincterotome. **C,** Complete false-lumen takedown was achieved after consecutive needle-knife EIT of the long-segment bridged pseudopolyps. *EIT*, Endoscopic incisional therapy.

technique, we were able to open each tract and achieve false-lumen eradication (Fig. 2C). Postprocedure evaluation confirmed luminal patency without deep mucosal injury or contrast extravasation (Fig. 3).

At the 1-year follow-up, the patient was maintaining a solid-food diet. Using the Food Intake Level scale, we observed that his swallowing improved 1 year post-EIT (from 4/10 to 9/10).[4] He continued to receive bougie dilation every 4 months (gradually up to 45F) for the proximal stricture. Interval EGD at 1 year revealed a well-healed and patent esophagus without recurrence of obstructive bridged pseudopolyps.

EIT appears to be safe, technically feasible, and effective in the management of symptomatic eCD with bridged pseudopolyposis. Long-term follow-up is required to assess disease recurrence and treatment durability. Prospective study is warranted for procedural standardization and optimal instrument selection.

PATIENT CONSENT

The patient in this article has given written informed consent to publication of their case details.

DISCLOSURES

Dr Mosko is a consultant for Boston Scientific, Pendopharm, Medtronic, and FujiFilm. The other authors disclosed no financial relationships.

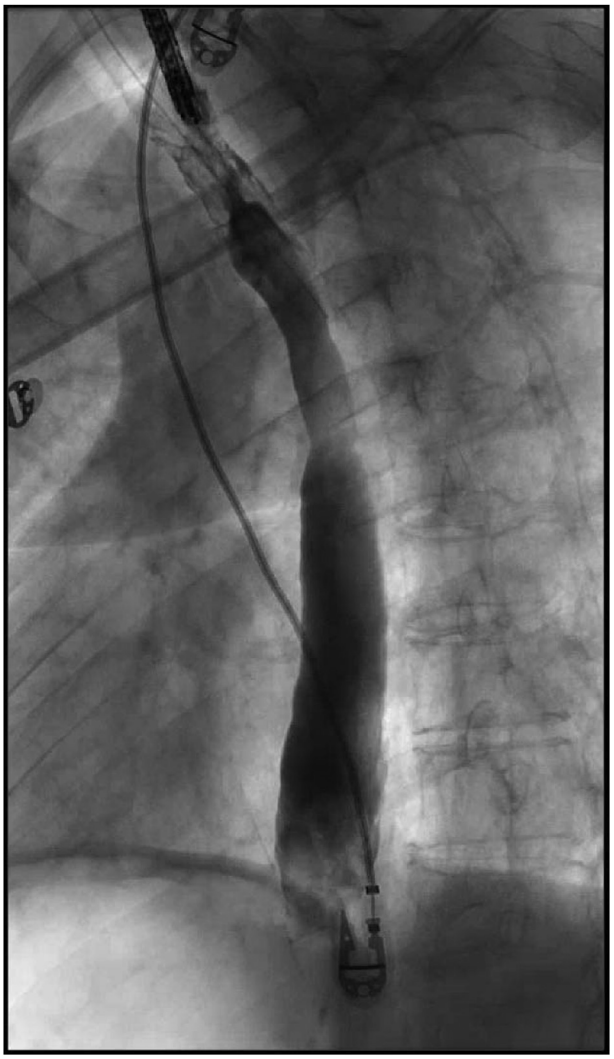

Figure 3. Fluoroscopic examination post-EIT. The absence of contrast extravasation from the esophagus is demonstrated after dye injection through the gastroscope. *EIT*, Endoscopic incisional therapy.

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