



Over-the-bar peroral endoscopic myotomy for the therapy of treatment-refractory cricopharyngeal dysphagia

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BACKGROUND

Peroral endoscopic myotomy for the treatment of symptomatic cricopharyngeal bar (C-POEM) is becoming more widespread.¹ The initial approach to C-POEM can be technically challenging because of limited working space at the upper esophageal sphincter near the hypopharynx. In addition, because C-POEM is a newer technique, many referred patients have been refractory to previous therapies, and prior interventions predispose patients to significant submucosal fibrosis.² These difficulties may lead to unsuccessful mucosal closure and resultant esophageal leak. We propose a modified, over-the-bar approach to facilitate closure.

CASE DESCRIPTION

A 71-year-old woman with a pertinent history of type II achalasia, successfully treated with previous peroral endoscopic myotomy, presented with chronic cough and recurrent aspiration pneumonia secondary to a cricopharyngeal bar. Her cricopharyngeal bar was longstanding and refractory to intervention; she had previously been treated by otolaryngology with endoscopic carbon dioxide laser myotomy and with repeated balloon dilation, both of which were unsuccessful. A barium swallow and upper endoscopy showed her lower esophageal sphincter to be widely patent, consistent with appropriately treated achalasia, and delayed passage of contrast at the level of a prominent cricopharyngeal bar. She was thus referred to our center for C-POEM.

ENDOSCOPIC METHODS

We performed C-POEM using a novel, over-the-bar approach (Fig. 1). The esophagus was intubated, showing a prominent cricopharyngeal bar just distal to the hypopharynx.

Abbreviation: C-POEM, cricopharyngeal peroral endoscopic myotomy.

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ynx. The upper esophageal sphincter was tight. The tissue appeared fibrotic because of prior interventions. Submucosal injection and transverse mucosal incision were performed directly over the cricopharyngeus using a triangle-tip knife and a combination of blended and cutting current, effect 3, and extended in a transverse fashion as needed (Fig. 2A-D). Completion of the incision revealed extensive submucosal fibrosis without visualization of the submucosal plane. The decision was made to begin directly with myotomy. The dense, fibrotic tissue was dissected until the submucosa and muscle layer were identified (Fig. 2E). Submucosal injection was repeated as necessary to protect the mucosal layer, and submucosal dissection and full-thickness myotomy were completed using the triangle-tip knife and insulated-tip knife (Fig. 2F and G). The defect was closed without difficulty (Fig. 2H). The total procedure time was 35 minutes. The patient remained in the hospital for observation as per institutional protocol afterward and was discharged without sequelae. At her 1-month clinic follow-up, she noted resolution of her chronic cough without additional symptoms.

CONCLUSIONS

This case demonstrates the use of a modified, over-the-muscle C-POEM technique to treat symptomatic cricopharyngeal bar. The superiority of this technique is that it allows for the precision of submucosal dissection and performance of a full-thickness myotomy without the need for a long submucosal tunnel, which can be difficult to perform in patients who have scarring such as from prior interventions. The more distal point of entry also assists with closure, as moving away from the tight hypopharynx and working over the bar enlarges the procedural working space. We find this technique particularly beneficial in patients who are expected to have significant submucosal fibrosis, as highlighted in this case. The concept of minimizing or forgoing tunneling to improve working space and facilitate closure has previously been demonstrated to be effective in peroral endoscopic myotomy for treatment of Zenker's diverticulum, in which similar challenges may be encountered,³⁻⁷ and this case shows that these concepts can be readily applied to C-POEM. Endoscopists should consider moving away from proximal tunneling in favor of working directly over the cricopharyngeus muscle (Video 1, available online at www.videogie.org).

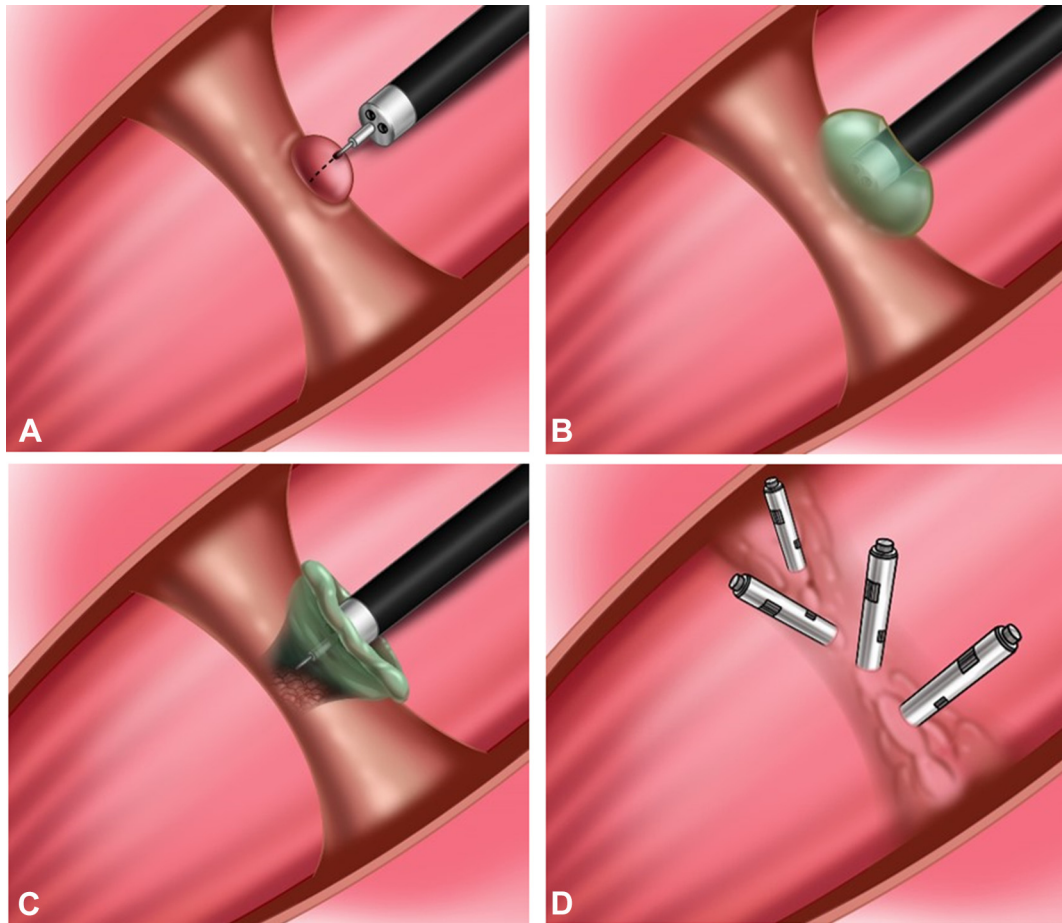


Figure 1. **A**, Submucosal injection is performed directly over the cricopharyngeus muscle. **B**, Submucosal dissection is performed after injection and the muscle fibers are identified. **C**, Full-thickness myotomy is performed while continuing to dissect the submucosa to expose the muscle as needed. **D**, The defect is closed with clips.

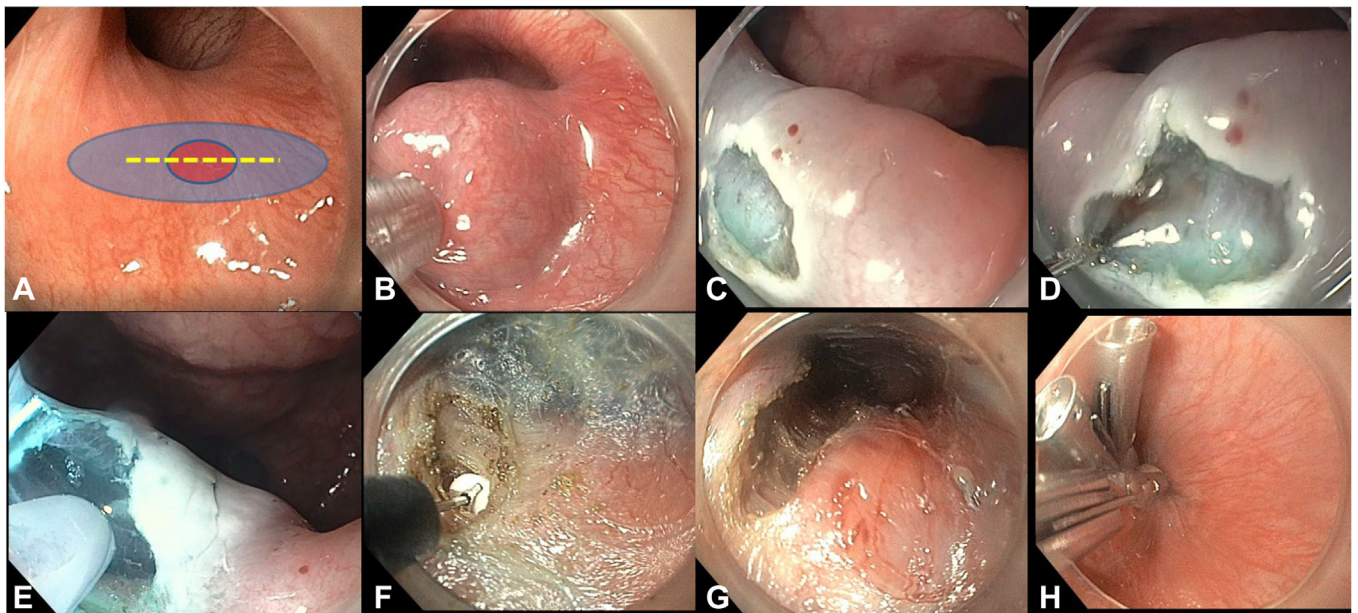


Figure 2. **A**, The site of intervention is identified (*red circle*, site of submucosal injection; *blue circle*, targeted area to lift; *dashed yellow line*, target for incision). **B**, Submucosal injection is performed. **C**, Mucosal incision is performed. **D**, The incision is extended in a transverse fashion as needed. **E**, Submucosal injection is performed to expose the cricopharyngeus muscle. **F**, Myotomy is performed, with additional submucosal injection to separate the tissue plane as needed. **G**, Full-thickness myotomy is performed. **H**, The defect is closed with clips.

DISCLOSURE

Dr Khashab is a consultant for Boston Scientific, Medtronic, Pentax, and GI Supply, as well as a royalty recipient at UpToDate and Elsevier. All other authors did not disclose any financial relationships.

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