



Peroral endoscopic myotomy using an endoscopic dissector: another novel device in our toolbox

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INTRODUCTION

Peroral endoscopic myotomy (POEM) is a safe and effective technique for the management of achalasia and other nonachalasia motility disorders.¹ However, it is technically challenging and time consuming with the use of multiple instruments often required for performing various steps associated with the procedure. While the procedural technique has remained homogeneous, various electrosurgical knives continue to evolve to prevent injuries to the surrounding structures and reduce the need for device changes.²⁻⁵ A novel device called the endoscopic dissector, used for endoscopic submucosal dissection,^{6,7} can serve the function of blunt dissection as well as hemostasis (approved for use by the U.S. Food and Drug Administration); but there is no report of its use during POEM in the published literature. In our case, we demonstrate using an endoscopic dissector while performing POEM for achalasia.

CASE

An 89-year-old man presented with a 2-year history of solid food dysphagia and 15-lb weight loss. His Eckardt score was 6. An upper endoscopy and high-resolution manometry confirmed type II achalasia (Fig. 1). The patient subsequently underwent a POEM procedure using a novel endoscopic dissector device (Fig. 2).

PROCEDURE

A standard anterior approach POEM was performed using a high-definition therapeutic gastroscope fitted with a transparent cap (Video 1, available online at www.giejournal.org).

Abbreviation: POEM, peroral endoscopic myotomy.

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The gastroesophageal junction was visualized at 40 cm. At 30 cm, a submucosal injection was made by injecting a combination of indigocarmine, epinephrine, and normal saline into the submucosal space. This was followed by a longitudinal mucosal incision using a triangular tip knife on dry cut mode of 50W, effect 3. With the endoscope now in the submucosal space, submucosal tunneling and myotomy were performed in a sequential manner using the novel endoscopic dissector device. The dissector is made of branches for coagulation and the dissection of tissue, a reverse handle for the best ergonomic performance, a rotatable flexible shaft that allows for exact alignment of the tip (Fig. 2A), a curved grasper that is made for precise tissue targeting, and sharp teeth that allow for secure grasping (Fig. 2B and C). The submucosal fibers were dissected using both careful blunt tissue dissection and spray coagulation (40W, effect 2) from 32 to 43 cm. When bleeding was encountered, it was immediately treated with the same device. The curved grasper design and easy rotatability allowed precise submucosal tunneling and prevented inadvertent injury to the mucosa and muscle layers. The anterior esophageal myotomy was then performed from 33 to 40 cm and gastric myotomy from 40 to 43 cm using spray coagulation current (50W, effect 2). Following successful myotomy, the mucosal defect was closed with 5 through-the-scope clips.

OUTCOME

The esophagogram obtained the next day was negative for a leak. The patient reported significant improvement in symptoms at the 1-month follow-up visit with an Eckardt score of 1. His functional luminal imaging probe measurements confirmed improvement in the distensibility index from a baseline of 0.8 mm²/mm Hg to 4.6 mm²/mm Hg postmyotomy. At his 1-year follow-up, the patient did not report dysphagia or symptoms of gastroesophageal reflux.

CONCLUSION

Our case highlights the myriad of technical and clinical advantages of the endoscopic dissector in POEM. The curved grasper tip design with sharp teeth, rotatability, and flexible shaft allows performance of essential steps of

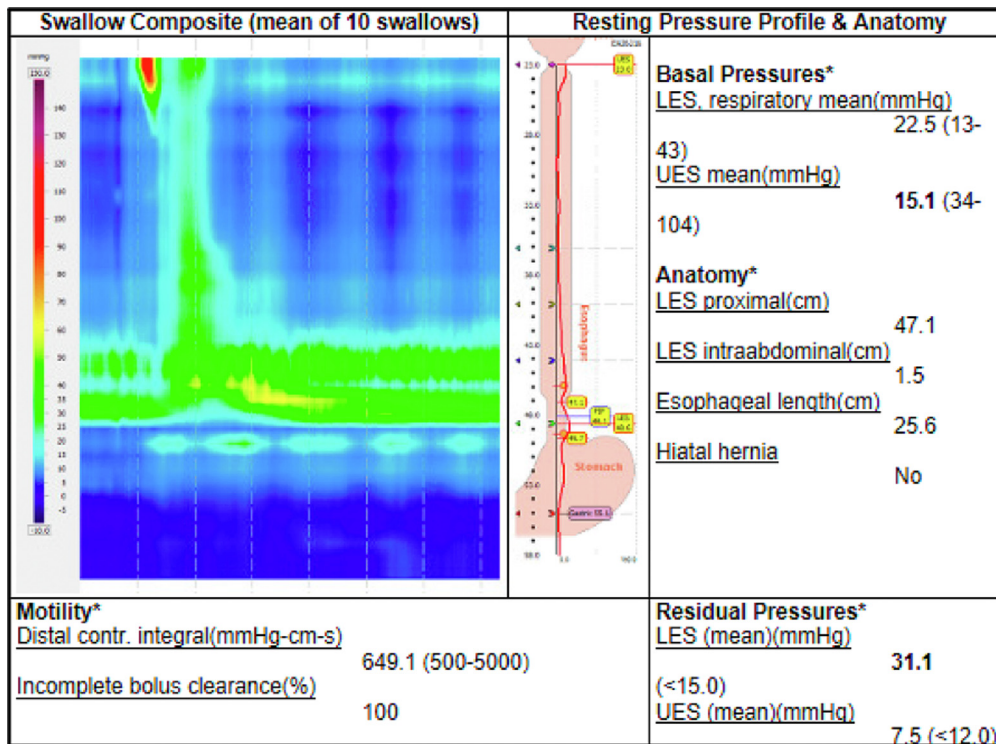


Figure 1. High-resolution manometry showing panesophageal pressurization and elevated lower esophageal sphincter pressure, consistent with findings of type II achalasia.

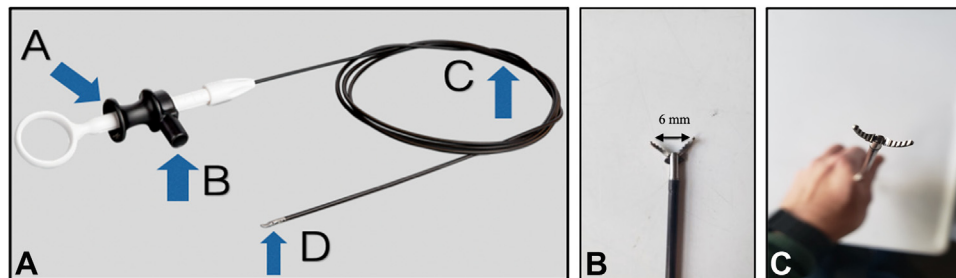


Figure 2. Endoscopic dissector device. **A**, Parts of the endoscopic dissector device: slider (A); high-frequency connector (B); rotatable, flexible shaft, length 1650 mm (C); and curved grasper for coagulation and blunt dissection (D). **B**, Tip of the endoscopic dissector; curved tip opening diameter of 6 mm. **C**, Tip of the endoscopic dissector; curved grasper tip design with 90-degree rotatability.

the POEM procedure including mucosotomy, submucosal tunneling, and myotomy. This device improves ergonomic performance, obviates the need to change devices during the procedure as all the steps of the procedure may be performed using this device, and reduces the risk of inadvertent injury to the surrounding structures. This novel device should be increasingly considered for safely and efficiently performing all aspects of the POEM procedure.

DISCLOSURES

Dr Khashab is a consultant for Boston Scientific, Medtronic, Olympus, GI Supply, Pentax, and Apollo Endosur-

gery, and he receives royalties from UpToDate and Elsevier. All other authors disclosed no financial relationships.

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