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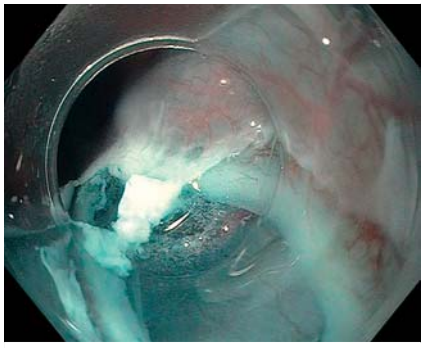
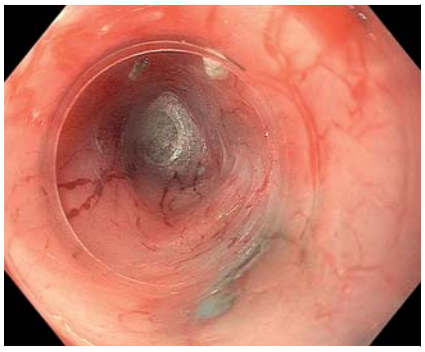
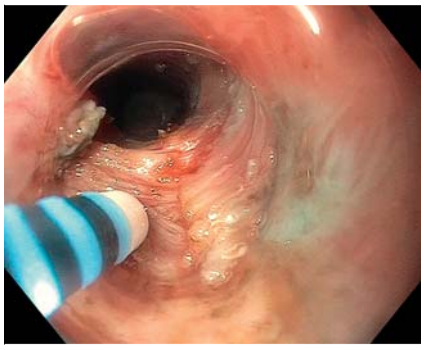
Tandem peroral endoscopic myotomy (POEM) and transoral incisionless fundoplication: a strategy to reduce reflux after POEM



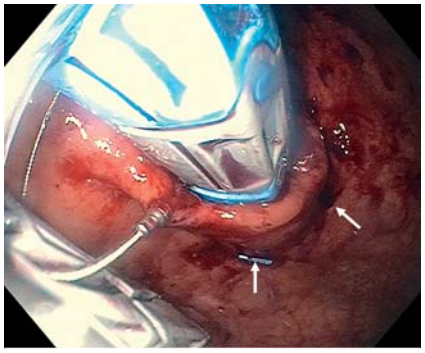
▶ **Fig. 1** Mucosotomy.



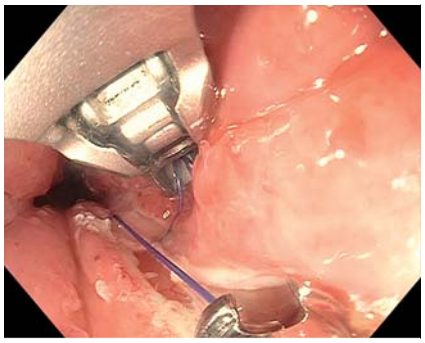
▶ **Fig. 2** Submucosal tunnel.



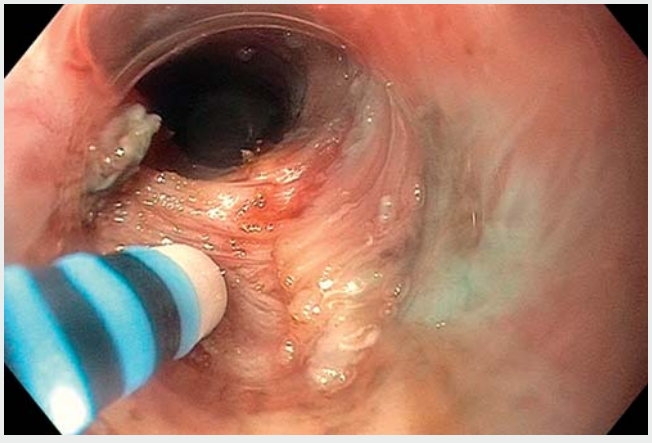
▶ **Fig. 3** Myotomy performed with a multipurpose electrosurgical knife.



▶ **Fig. 4** Transoral incisionless fundoplication device with H fasteners (arrows).



▶ **Fig. 5** Mucosotomy closure with endoscopic suturing device.



Video 1 Tandem peroral endoscopic myotomy and transoral incisionless fundoplication. Mucosotomy closure with endoscopic suturing.

Peroral endoscopic myotomy (POEM) is an effective treatment for achalasia, comparable to laparoscopic Heller myotomy (LHM) [1]. Gastroesophageal reflux disease (GERD) is a common adverse event, and POEM vs. LHM has higher abnormal acid exposure (39% vs. 16.8%) and esophagitis (29.4% vs. 7.6%) [2, 3]. Transoral incisionless fundoplication (TIF) is an endoscopic intervention for GERD that reduces acid exposure [4, 5].

A 41-year-old man with manometry-confirmed type II achalasia presented with dysphagia to solids and liquids and weight loss. His Eckardt score was 11 out of 12 (severe symptoms). The plan was to perform POEM followed by TIF in a single session to reduce post-POEM reflux (▶ **Video 1**).

The endoscope was fitted with a clear, tapered cap. A submucosal injection of saline plus methylene blue followed by mucosotomy were performed 10 cm proximally to the gastroesophageal junction (GEJ) (▶ **Fig. 1**). The submucosal space was entered and the tunnel extended 2 cm beyond the GEJ (▶ **Fig. 2**). A full-thickness myotomy was extended 2 cm beyond the lower esophageal sphincter (▶ **Fig. 3**). The fundoplication device was inserted and the GEJ was viewed in retroflexion. Tissue was pulled into the device using a tissue helix and

suction. Device manipulation and deployment of 28 H-shaped full-thickness fasteners were used to augment the GEJ flap valve to create a 270-degree wrap 2 cm in length (▶ **Fig. 4**). The mucosotomy was closed by endoscopic suturing (▶ **Fig. 5**).

The patient was discharged the day after tandem POEM-TIF. He regained weight and his Eckhardt score improved from 11 to 3. He reported no reflux or need for proton pump inhibitors. Follow-up esophagogastroduodenoscopy 9 months later showed no esophagitis.

Tandem POEM-TIF is a strategy for prevention of reflux after POEM, especially in young patients. Further study is needed to determine long-term safety and efficacy.

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Competing interests

Nikhil A. Kumta is a consultant for Apollo Endosurgery, Boston Scientific, Intuitive Surgical, and Olympus.

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Bibliography

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