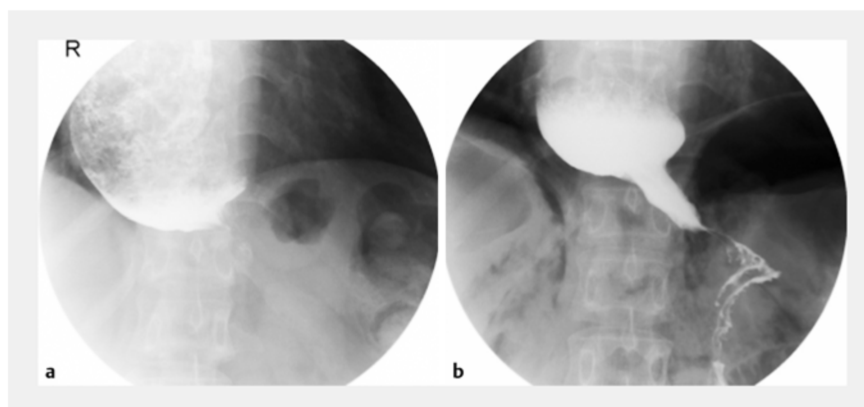
# Peroral endoscopic dual myotomy (dual POEM) for achalasia with severe esophageal dilatation

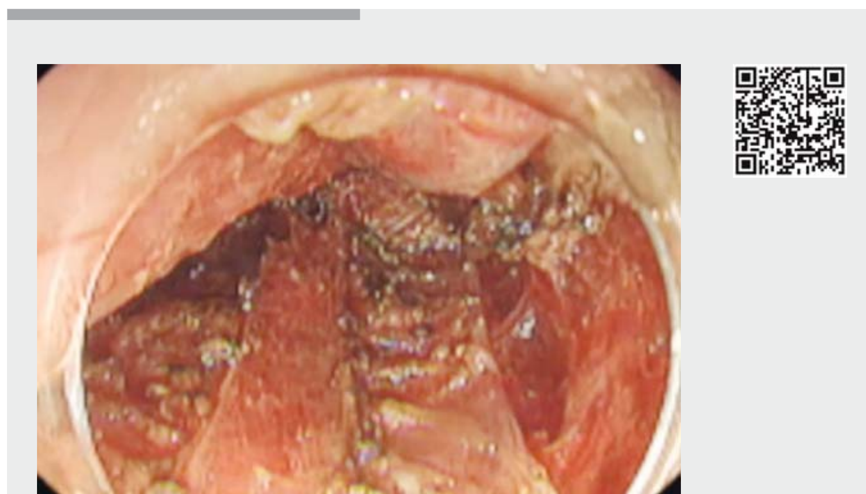
Although the high effectiveness of endoscopic or surgical myotomy for treating achalasia has been well recognized, persistent or recurrent symptoms may develop following the procedure [1, 2]. A review has summarized the negative predictors of myotomy for achalasia patients, which include severe preoperative dysphagia and the presence of an enlarged esophagus [3]. Subsequent reports revealed that repeated myotomy on the same side or the opposite side can be performed with positive outcomes in such patients [1, 4, 5]. Herein, we describe a peroral endoscopic dual myotomy (dual POEM) technique, in which dual myotomies are performed during a single procedure, to avoid repeat intervention for achalasia patients with negative predictors.

A 42-year-old man presented with chronically worsening dysphagia, and was diagnosed with achalasia (▶ **Fig. 1 a**). Following informed consent, a dual POEM procedure was performed (▶ **Video 1**), with the patient under general anesthesia. First, submucosal injection of saline mixed with methylene blue was performed into the posterior esophageal wall. Mucosal entry at 7 cm above the gastroesophageal junction was initially made using a hybrid knife (▶ **Fig. 2 a**). A wide submucosal tunnel, occupying at least half of the esophageal lumen, was then created (▶ **Fig. 2 b**). Dual myotomies were performed successively at the 8 o'clock and 3 o'clock positions, respectively, and muscle was cut to a point 2 cm below the cardia (▶ **Fig. 2 c**). The mucosal entry was finally closed using clips (▶ **Fig. 2 d**). The procedure was successfully performed without any adverse events.

A nasogastric tube was placed for 2 days. The patient resumed a liquid diet on Day 3 after the procedure, and a normal diet was allowed at 2 weeks. At 1-month follow-up, the patient reported significant resolution of dysphagia, and barium series verified the success of the dual POEM procedure (▶ **Fig. 1 b**). No reflux complications were recorded.




▶ **Fig. 1** Timed barium swallow esophagography. **a** Preoperative esophagography noted severe esophageal dilatation and no obvious passage of barium. **b** Postoperative esophagography demonstrated a rapid passage of barium from esophagus into the stomach.



**Video 1** Peroral endoscopic dual myotomy (dual POEM) technique for treating achalasia with severe esophageal dilatation in a 42-year-old man.

Despite the excellent short-term outcome observed, dual POEM should be performed with great caution in selected patients. Further clinical studies with larger samples and long-term follow-up are needed to evaluate the effectiveness and safety of dual POEM for the treatment of achalasia with severe esophageal dilatation.

Endoscopy_UCTN_Code_TTT_1AO_2AH

## Competing interests

None

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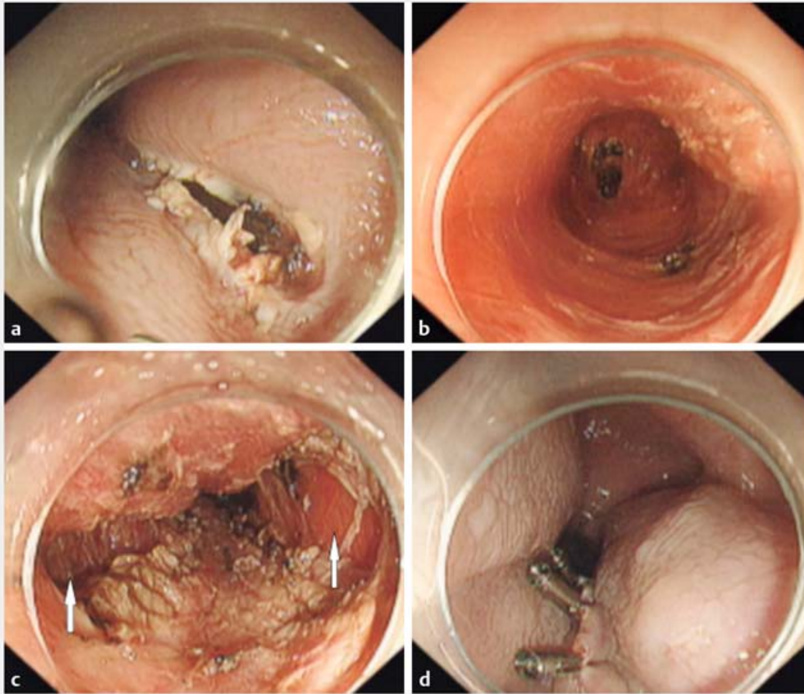


▶ **Fig. 2** Peroral endoscopic dual myotomy (dual POEM) technique. **a** Mucosal entry was performed at the posterior wall of the esophagus using a hybrid knife. **b** A wide submucosal tunnel, occupying at least half of the esophageal lumen, was created. **c** Dual myotomies were performed successively at the 8 o'clock and 3 o'clock positions, respectively. **d** The mucosal entry was closed using clips.

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## Acknowledgment

The authors want to thank the National Key R&D Program of China (2017YFC0112305).

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**Bibliography**
**DOI** https://doi.org/10.1055/a-0603-3099
Published online: 9.5.2018
Endoscopy 2018; 50: E179–E180
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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