

Less invasive than minimally invasive: peroral endoscopic myotomy with a slim scope in the treatment of esophageal achalasia



► **Fig. 1** Barium swallow demonstrating a mildly dilated esophagus with retention of contrast.

Peroral endoscopic myotomy (POEM) is an established therapy [1–3]. We describe a new technique for POEM using a slim/pediatric endoscope, which aims to provide a less-invasive approach compared with traditional POEM.

A 16-year-old girl was diagnosed with achalasia based on symptoms (dysphagia, regurgitation, 6-kg weight loss over 4 months, Eckardt score of 7), barium swallow showing mildly dilated esophagus with retention of contrast (► **Fig. 1**), and manometry demonstrating increased lower esophageal sphincter relaxation pressure of 13.1 mmHg.

POEM was initiated using a standard gastroscop. A submucosal cushion was made with succinyl gelatin-methylene blue solution 8.0cm proximally to the gastroesophageal junction. The endoscope was exchanged for a slim gastroscop (EG-530NW, 5.9mm external outer diameter, 2.0mm working channel; Fujifilm, Tokyo, Japan), fitted with a cap cut from the tip of a 5.5 mm endotra-



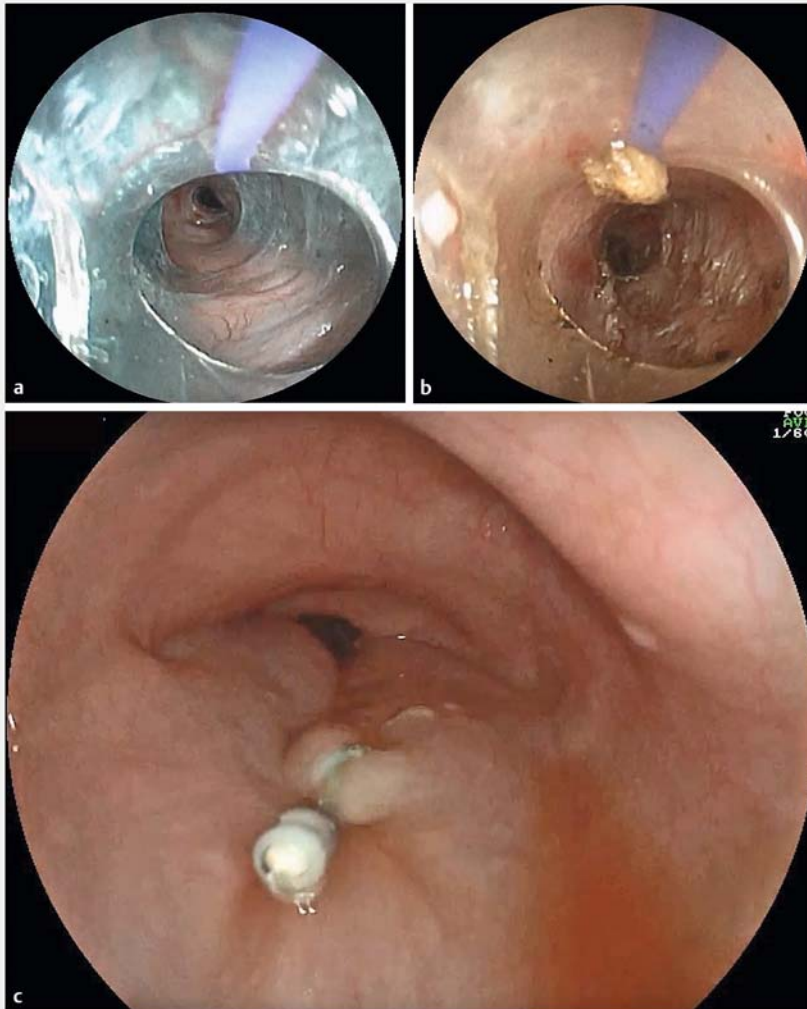
► **Fig. 2** Slim gastroscop fitted with the transparent cap cut from the tip of an endotracheal tube.



► **Video 1** Management of esophageal achalasia with peroral endoscopic myotomy using a slim gastroscop.

cheal tube (Solidor; Well Lead Medical Co., Ltd, Guangzhou, China) (► **Fig. 2**). A mucosal opening was made with the tip of an oval 13-mm polypectomy snare (Profile Snare; Boston Scientific, Marlborough, Massachusetts, USA), which was also used for the creation of the submucosal tunnel and myotomy (► **Fig. 3 a**, ► **Video 1**). A submucosal tunnel was dis-

sected for 2.0cm distally to the gastroesophageal junction. When further submucosal injection was needed, we utilized a 22-gauge needle (Injectra; MediGlobe, Achenmühle, Germany) by removing the needle and outer sheath, and using the inner sheath as an injection device. Myotomy was then performed from 2.0 cm below the mucosal opening to the



► **Fig. 3** Endoscopic images. **a** Aspect of the submucosal tunnel before myotomy. **b** Final aspect of the myotomy. **c** Mucosal opening closed with one endoscopic clip.

end of the submucosal tunnel (► **Fig. 3 b**). All steps were done with E-Cut, pure with 90 watts (SS601Mca; WEM, Sao Paulo, Brazil). The mucosal opening was closed using a single endoscopic clip (EzClip; Olympus, Tokyo, Japan) (► **Fig. 3 c**). The following day the patient was asymptomatic and was discharged on soft food. At 2 months' follow-up, her Eckardt score was 1 on a nonrestricted diet. POEM with a slim gastroscope is a feasible, safe, and effective procedure. The procedure is even less invasive than the standard POEM procedure.

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Competing interests

None

The authors

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