

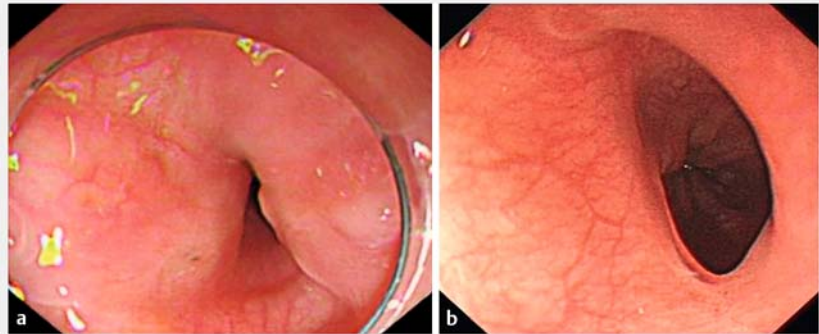
Open peroral endoscopic myotomy for refractory benign esophageal stricture

A 36-year-old woman suffered thoracic pain and dysphagia following a barbecue 6 months earlier. Gastroscopy showed an ulcer in the lower esophagus. The thoracic pain disappeared after taking proton pump inhibitors (PPIs) for a week, but dysphagia continued. Repeat gastroscopy showed a thickened and rigid lower esophageal wall and esophageal stricture (▶ **Fig. 1 a**). The stricture was about 4.0 cm from the cardia. Endoscopic biopsy diagnosed inflammation. Esophagography showed severe stricture in the lower esophagus (▶ **Fig. 2 a**). Thoracic computed tomography showed a thickened lower esophageal wall, and endoscopic ultrasonography showed thickening of the muscularis propria in the lower esophagus (▶ **Fig. 3**), without manifestation of tumors. The patient continued to take PPIs and underwent three sessions of endoscopic dilation, without success; she lost 8.0 kg in weight.

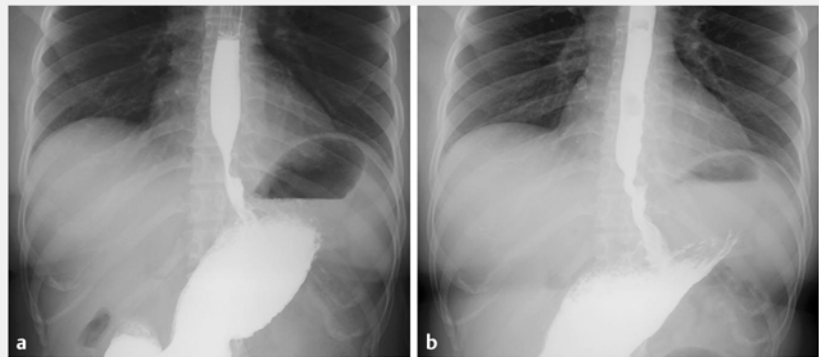
We performed open peroral endoscopic myotomy (O-POEM) (▶ **Video 1**). The mucosal and circular muscle layers of the stricture were incised completely without submucosal tunnel creation (▶ **Fig. 4**), and with the upper and lower edge incisions extending about 2.0 cm beyond the stricture.

The patient recovered uneventfully after endoscopic treatment and gradually returned to a normal diet. Her body weight had increased by 4.0 kg at 6 months after treatment. Follow-up esophagography showed that the stricture had significantly improved post-procedure (▶ **Fig. 2 b**). Follow-up gastroscopy showed that the original esophageal incision had healed well and the lumen was only mildly strictured (▶ **Fig. 1 b**), with smooth passage of the endoscope.

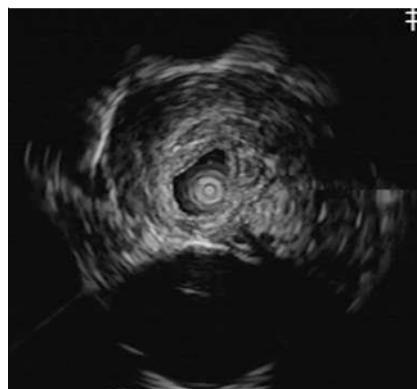
Endoscopic balloon dilation [1] or stenting [2] is an effective treatment for benign esophageal stricture. Radial incision and cutting [3] can also be performed. Due to the poor effect of balloon dilation, the rigid wall, and the presence of stricture, we performed O-POEM for this



▶ **Fig. 1** Gastroscopy. **a** Pre-procedure, showing a thickened and rigid lower esophageal wall and a stricture. **b** At follow-up, showing that the incision had healed well, with only mild stricture remaining.



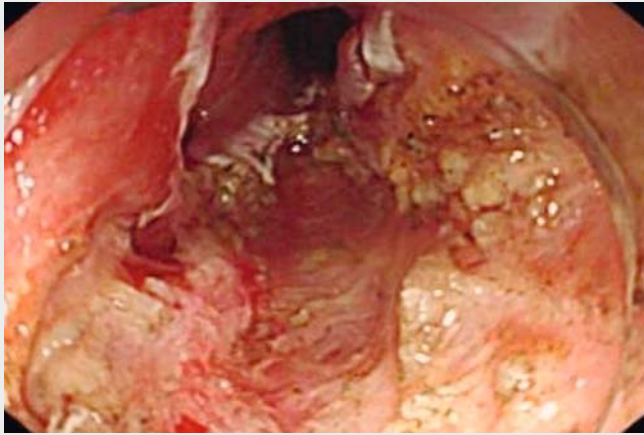
▶ **Fig. 2** Esophagography. **a** Pre-procedure, showing severe stricture of the lower esophagus. **b** At follow-up, showing significant improvement, with only mild stricture.



▶ **Fig. 3** Endoscopic ultrasonography showed a thickened muscularis propria in the lower esophagus.



▶ **Fig. 4** The mucosal and circular muscle layers of the stricture were incised completely without submucosal tunnel creation.



Video 1 The lower esophagus was rigid and strictured, and the mucosal and circular muscle layers of the stricture were incised completely without submucosal tunnel creation.

patient. O-POEM is a safe and effective treatment for achalasia [4], as well as an effective therapy for benign esophageal stricture.

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Competing interests

The authors declare that they have no conflict of interest.

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