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. 1a). The stricture was about 4.0 cm from the cardia. Endoscopic biopsy diagnosed inflammation. Esophagography showed severe stricture in the lower esophagus (Fig. 2a). 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. 2b).

Follow-up gastroscopy showed that the original esophageal incision had healed well and the lumen was only mildly stenosed (Fig. 1b), 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 case.

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.
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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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.