Peroral endoscopic myotomy (POEM) is widely known as a treatment modality for achalasia and its use has been expanding to other spastic esophageal motility disorders [1, 2]. POEM with simultaneous submucosal and muscle dissection (POEM-SSMD) has been described for achalasia with severe adhesions in the submucosa of the cardia [3]. We present a challenging case, in which tunneling within the submucosa alone before the myotomy was not possible owing to spastic contractions in the mid-esophagus.

A 46-year-old woman presented with a long history of dysphagia, with worsening symptoms and chest pain since the previous year. Esophagogastroduodenoscopy with a standard endoscope showed narrowing at the level of the tracheal bifurcation and it was impossible for the scope to traverse the narrowing (Fig. 1 a). An endoscopic ultrasonography (EUS) examination showed a thick band of muscle (Fig. 1 b). It was possible to pass a nasal endoscope beyond the level of the narrowing and this revealed several diverticula in the esophagus, along with strong contractions. An esophagram showed abnormal esophageal contractions throughout, with a narrowed lumen (Fig. 2 a). High resolution manometry was inconclusive because of the difficulty in placement of the catheter.

The patient was diagnosed with spastic esophageal disorder and underwent POEM (Video 1). The mucosal entry was created with a 2-cm longitudinal incision at the 5-o’clock position using a FlushKnife BT (Fujifilm) after submucosal injection. Submucosal dissection was performed to create the submucosal tunnel. As we approached the tight junction with a narrowed tunnel, proceeding with submucosal tunneling alone was not possible. Instead, simultaneous submucosal and muscle dissection had to be performed, which eventually opened up the tunnel (Fig. 3). Submucosal tunneling was continued until two penetrating vessels were seen, indicating the distal end of the POEM [4, 5], and the endoscopic myotomy was completed once the pene-
trating vessels were reached. A standard endoscope was then passed smoothly through into the stomach. The mucosal entry site was closed with endoclips. An esophagram on day 1 after the procedure showed an improvement in contrast emptying (▶Fig. 2b). The patient reported significant improvement in her symptoms 3 months later.

Adopting a method of simultaneous submucosal and muscle dissection in a tunnel narrowed because of spastic contractions is feasible to allow successful completion of POEM.

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Competing interests

Dr. Takashi Toyonaga receives royalties from Fujifilm and Olympus Medical Systems. The other authors declare that they have no conflict of interest.

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Video 1 Peroral endoscopic myotomy with simultaneous submucosal and muscle dissection (POEM-SSMD) in a tunnel that was narrowed by spastic esophageal contractions.

Fig. 3 Endoscopic image during peroral endoscopic myotomy with simultaneous submucosal and muscle dissection.