Retrograde navigational tunnel technique in peroral endoscopic myotomy for sigmoid-type achalasia

Standard peroral endoscopic myotomy (POEM) techniques are effective for typical achalasia [1–4]; however, limitations are encountered when treating the sigmoid type owing to its complex anatomy. Here, we introduce a novel retrograde navigational tunnel technique in POEM that aims to address these challenges.

A 31-year-old man was admitted to our hospital with a history of postprandial choking sensations for 5 years. Upon admission, a barium meal showed that the esophagus was diffusely dilated with a beak-like appearance at the lower end of the cardia (▶ Fig. 1a). We chose to perform POEM after undertaking multidisciplinary consultation and obtaining consent from the patient (▶ Video 1). The procedure was performed with the patient under general anesthesia with endotracheal intubation. A triangular knife was used throughout the surgical procedure. The lower end of the esophagus exhibited a sigmoid contortion and the cardia was seen to be closed (▶ Fig. 1b). First, a submucosal injection was administered 30 cm from the incisors to establish the tunnel entrance (▶ Fig. 2a). Second, a retrograde submucosal injection was performed from the cardia to the tunnel entrance (▶ Fig. 2b). Third, submucosal dissection was performed in the tunnel to navigate from the entrance to 3 cm below the cardia (▶ Fig. 2c, d). Both the annular and longitudinal muscles were incised in the tunnel (▶ Fig. 2e). Hemostasis was achieved using hot forceps, and the tunnel entrance was closed with metal clamps (▶ Fig. 2f). The opera-
tion was successfully completed in 47 minutes, without any complications being experienced. Postoperatively, the patient was fasted and given anti-infection therapy; he was discharged 3 days after the surgery. At 12-month follow-up, the patient had no recurrence of his choking after eating.

The retrograde navigational tunnel technique in POEM for sigmoid-type achalasia offers two major advantages: (i) reduced surgical time because of continuous submucosal injection; (ii) enhanced accuracy in tunnel navigation, minimizing disorientation during submucosal stripping. In conclusion, the retrograde navigational tunnel technique in POEM is a viable and effective approach for the treatment of sigmoid-type achalasia.

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Conflict of Interest
The authors declare that they have no conflict of interest.

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