Subepithelial tunneling endoscopic resection with intratunnel morcellation for a giant esophageal leiomyoma

Subepithelial tunneling endoscopic resection is an accepted minimally invasive therapy for esophageal subepithelial tumors arising from the muscularis propria layer [1]. Subepithelial tunneling endoscopic resection is highly successful for subepithelial tumors <4 cm. Larger lesions pose technical challenges for this procedure and for specimen delivery with resultant inferior outcomes [2]. Several techniques have been described to overcome this problem, such as double-opening subepithelial tunneling endoscopic resection, intracorporeal morcellation, or a thoracoscopy-assisted approach [2–5]. This video demonstrates subepithelial tunneling endoscopic resection for a giant esophageal leiomyoma with intratunnel morcellation.

A 37-year-old man presented with dysphagia. Computed tomography (CT) scan, esophagogastroduodenoscopy (EGD), and endoscopic ultrasound (EUS)-guided fine needle biopsy confirmed a muscularis propria layer leiomyoma at 22 cm measuring 6.5 × 2.5 × 4 cm (▶ **Fig. 1**, ▶ **Fig. 2**). Subepithelial tunneling endoscopic resection was performed (▶ **Video 1**). After submucosal elevation, a mucosal incision was made at 17 cm using a triangular tip TT-J knife (Olympus, Tokyo, Japan) and Endocut current (Erbe Vio 200D; Erbe, Tübingen, Germany). The subepithelial tumor was enucleated by generous lateral and forward dissection using forced coagulation current (Erbe). Hemostasis was achieved using a Coagrasper (Olympus). Care was taken to maintain an intact capsule around the leiomyoma. The lesion was too bulky to be delivered en bloc from the tunnel. Therefore, intratunnel morcellation was performed and morcellated tumor fragments were retrieved from the tunnel and esophagus (▶ **Fig. 3**). The mucosal incision was closed using endoclips. The procedure time was 210 min. The patient was maintained nil orally for 48 hours followed by an oral diet and was discharged on day 6. No adverse events were recorded (▶ **Fig. 4**). Final histopathology confirmed leiomyoma. Follow-up EGD at 4 weeks revealed a healthy scar (▶ **Fig. 5**). The patient reported dysphagia resolution.

This video highlights the importance of intratunnel morcellation to facilitate specimen delivery after subepithelial tunneling endoscopic resection. It also highlights the importance of a preprocedural EUS-guided fine needle biopsy to confirm the tumor is benign, because only then could we perform morcellation. In conclusion, subepithelial tunneling endoscopic resection with intratunnel morcellation is a safe and effective technique for resection of a giant esophageal leiomyoma.

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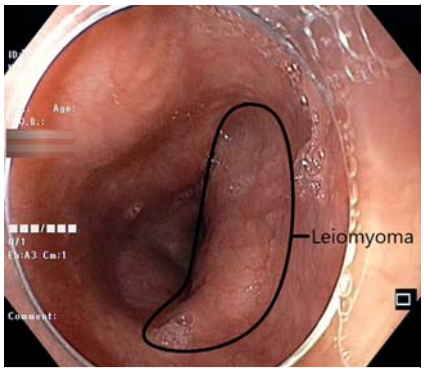
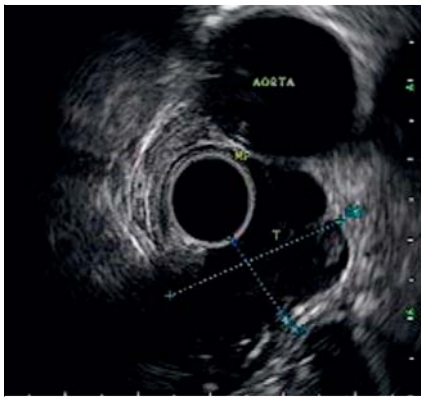
Video 1 This narrated video demonstrates the technique of subepithelial tunneling endoscopic resection for a giant esophageal leiomyoma followed by intratunnel morcellation of the specimen to facilitate specimen delivery.



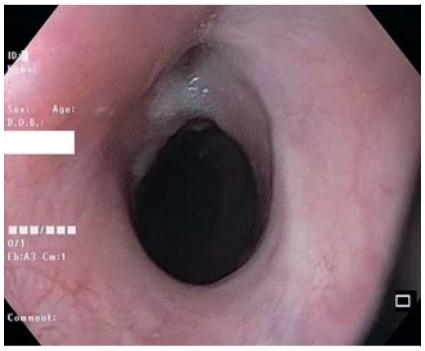
▶ **Fig. 1** Endoscopic view of subepithelial esophageal tumor (outline marked).



▶ **Fig. 2** Radial endoscopic ultrasonography view of the esophageal subepithelial tumor. Note the aorta in close relation to the tumor.

▶ **Fig. 3** External view of the final resected specimen showing the morcellated tumor fragments.

▶ **Fig. 4** Post-operative contrast swallow demonstrating no leak of contrast from the esophageal lumen.



▶ **Fig. 5** Endoscopic view of healed site scar on follow-up endoscopy at 4 weeks.

Competing interests

The authors declare that they have no conflict of interest.

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