Article published online: 2023-04-11

Novel therapeutic thin endoscope facilitates endoscopic submucosal dissection for cervical esophageal cancer involving the pharyngo-esophageal junction

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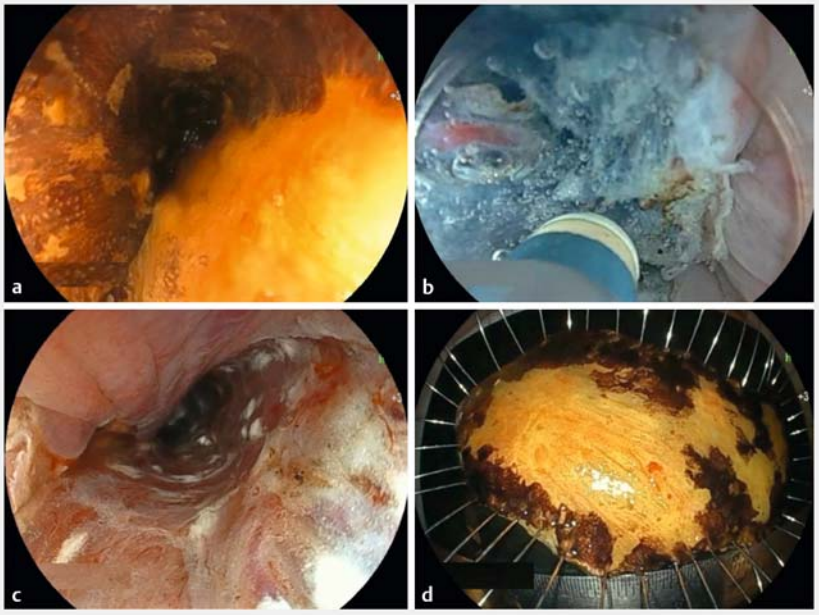
▶ **Fig. 1** Comparison of the novel therapeutic thin endoscope and normal diameter therapeutic endoscope. Left: Novel therapeutic thin endoscope has a 7.9-mm outer diameter and 3.2-mm working channel diameter. Right: Normal diameter therapeutic endoscope with a 9.8-mm outer diameter.

▶ **Fig. 2** Comparison of the downward angle of 160° (novel therapeutic thin endoscope) and 90° (conventional endoscope).

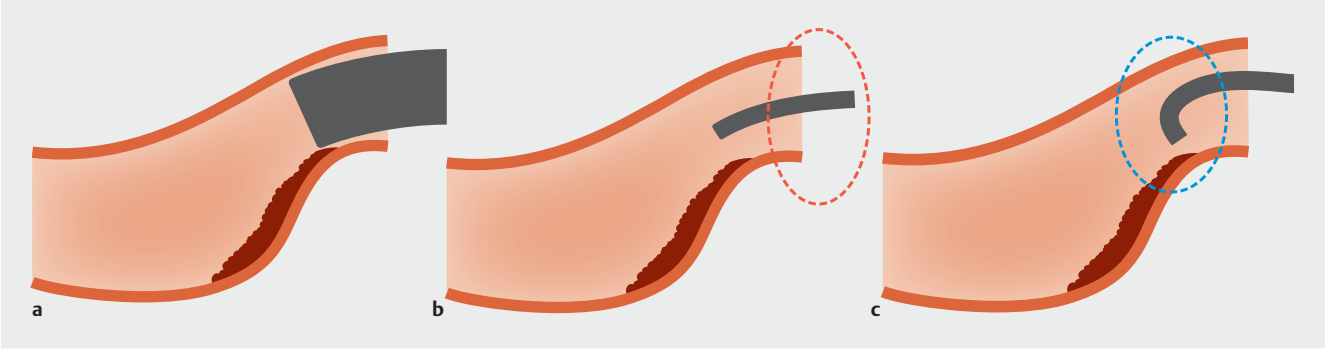


▶ **Fig. 3** Case description. **a** The lesion was 50 mm in size, occupied half the circumferential area, and was located on the posterior wall. **b** During the entire procedure, maneuverability and approachability were maintained well. **c** Wound of the endoscopic submucosal dissection. **d** En bloc resection was achieved. The procedure time was 100 min and the specimen size was 62 × 37 mm. The pathological diagnosis was squamous cell carcinoma, T1a, with a free horizontal and vertical margin.

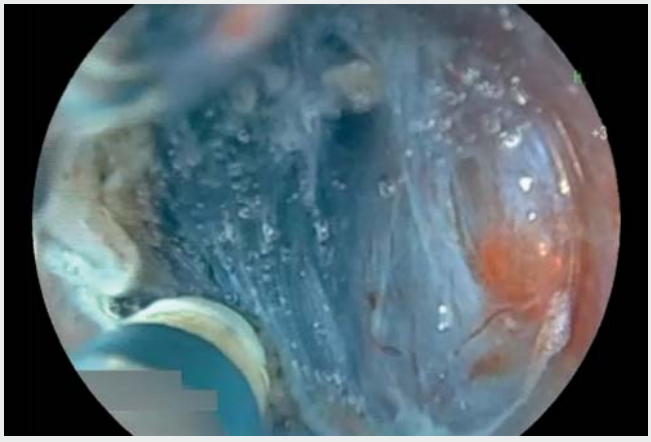
The cervical esophagus, especially the pharyngoesophageal junction, is narrow; thus, the movement of the endoscope is severely limited [1, 2]. This region also has strong flexion to the posterior wall; thus, it is occasionally difficult to approach a lesion with a conventional endoscope with an insufficient downward angle. Recently, a novel therapeutic thin endoscope, EG-840TP (Fujifilm, Tokyo, Japan), has been developed. In this endoscope, despite an outer diameter of 7.9 mm, the working channel diameter is 3.2 mm with a downward angle of 160° (▶ **Fig. 1**, ▶ **Fig. 2**). Herein, we report a case in which this novel endoscope facilitates endoscopic submucosal dissection (ESD) for cervical esophageal cancer involving the pharyngoesophageal junction (▶ **Video 1**).

A 58-year-old man was referred to our hospital for the treatment of cervical esophageal cancer. The lesion was 50 mm in size, occupied a half circumferential region, and was located on the posterior wall, involving the pharyngoesophageal junction. We decided to perform ESD. Tracheal intubation and general anesthesia without a laryngoscope were performed. The EG-840TP and DualKnifeJ (Olympus Medical Systems, Tokyo, Japan) were used. ESD was performed in underwater conditions according to the following procedure: 1) mucosal incision and trimming of the distal side to create an endpoint, 2) a full circumferential incision, 3) dissection of both lateral edges of the submucosa, and 4) submucosal dissection of the central area [3]. During the entire procedure, maneuverability and approachability were maintained well. Finally, en bloc resection was achieved without any adverse events (▶ **Fig. 3**).

We were able to perform successful cervical esophageal ESD due to this novel endoscope. The thin outer diameter allows for free movement even in a narrow space and the sufficient downward angle improves approachability (▶ **Fig. 4**). This novel endoscope may open up new possibilities for endoscopic treatment by



▶ **Fig. 4** Illustration of cervical esophageal endoscopic submucosal dissection in conventional endoscope and novel therapeutic thin endoscope. **a** A conventional endoscope. The pharyngoesophageal junction is narrow and tortuous, thus maneuverability and approachability are poor. **b** Novel therapeutic thin endoscope. Thin outer diameter allows for free movement even in the narrow space (red circle). **c** Sufficient downward angle also improves the approachability (blue circle).



Video 1 Endoscopic submucosal dissection for cervical esophageal cancer involving the pharyngoesophageal junction using the novel therapeutic thin endoscope.

enabling movements that were not possible before.

Endoscopy_UCTN_Code_TTT_1AO_2AC

Competing interests

The authors declare that they have no conflict of interest.

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Endoscopy 2023; 55: E602–E603
DOI 10.1055/a-2044-0512
ISSN 0013-726X

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany