

## Strategy of small-caliber endoscopic submucosal dissection for esophageal neoplasia distal to severe stricture



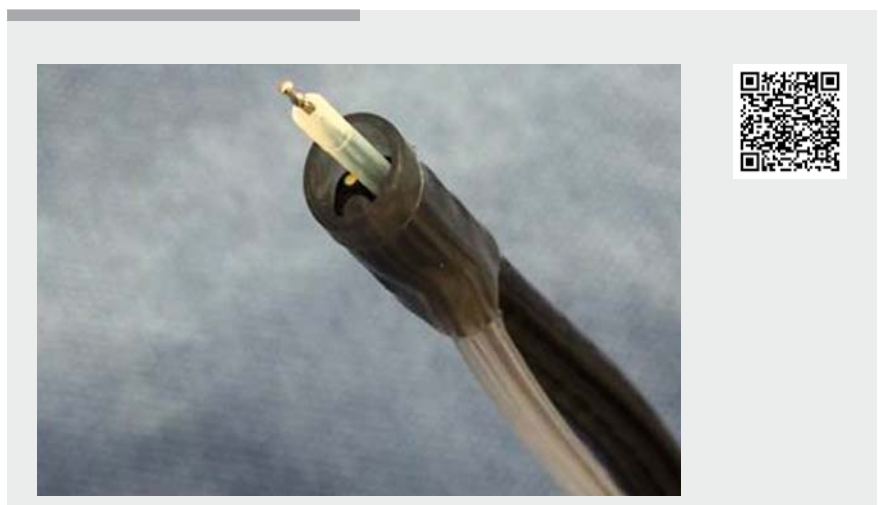
► **Fig. 1** Early esophageal carcinoma distal to stenosis after previous endoscopic submucosal dissection of the upper thoracic esophagus. The stenosis prevents the passage of a conventional endoscope.

When esophageal neoplasia occurs distally to severe stenosis after prior endoscopic submucosal dissection (ESD) [1, 2], a conventional endoscope cannot pass through. Therefore, a small-caliber endoscope (SCE) must be used. Although transnasal ESD of a small esophageal lesion using an SCE without sedation has been reported [3], it is unclear whether an SCE is feasible for standard ESD with compatible devices. Herein, we report the first case of esophageal ESD using an SCE for a circumferential lesion located distally to severe stenosis.

Esophageal carcinoma occurred distally to stenosis after a previous ESD and prevented the passage of a conventional endoscope (► **Fig. 1**). After obtaining written informed consent, ESD using an SCE (EG-L580NM7; Fujifilm, Tokyo, Japan) [3] was performed under general anesthesia. Auxiliary devices included a transparent hood (Nanoshooter; Top Co., Tokyo, Japan) connected to a waterjet generator, electro-surgical unit (VIO3; ERBE Elektromedizin, Tübingen, Germany), and multifunctional snare (SOUTEN; Kaneka Medics, Tokyo, Japan) [4], with forced coagulation mode (effect 4, 40W) for marking, endocut mode (endocut Q) for circumferential cutting, and swift coagulation mode (effect 4, 60W) for submucosal dissection (► **Fig. 2**). Hyaluronate sodium was injected locally via a 25-G



► **Fig. 2** Endoscopic submucosal dissection under general anesthesia using a small-caliber endoscope (EG-L580NM7; Fujifilm, Tokyo, Japan) with a transparent hood (Nanoshooter, Top Co., Tokyo, Japan) connected to a waterjet generator, electro-surgical unit (VIO3; ERBE Elektromedizin, Tübingen, Germany), a multifunctional snare (SOUTEN; Kaneka Medics, Tokyo, Japan), and a 25-G needle (Super Glip, Top Co.) for local injection of hyaluronate sodium solution.



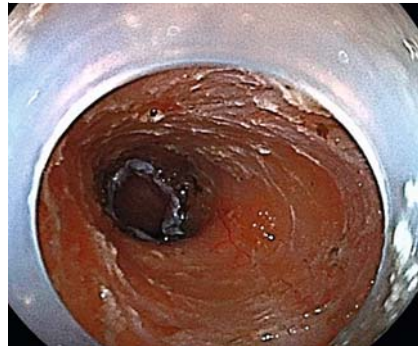
► **Video 1** Esophageal endoscopic submucosal dissection using a small-caliber endoscope with compatible devices for a circumferential lesion distal to severe stenosis.

needle (Super Glip, Top Co.). Hemostasis was achieved with hemostatic forceps (RC1900; Kaneka Medics). Submucosal

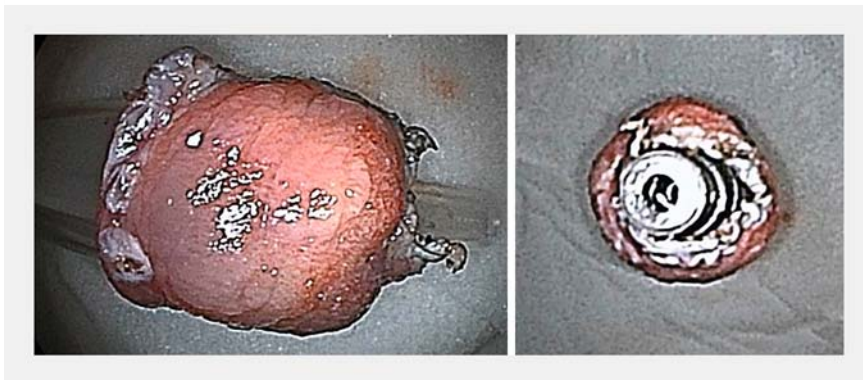
dissection was performed using the snare (SOUTEN; Kaneka Medics, Tokyo, Japan) [4], with forced coagulation mode (effect 4, 40W) for marking, endocut mode (endocut Q) for circumferential cutting, and swift coagulation mode (effect 4, 60W) for submucosal dissection (► **Fig. 2**). Hyaluronate sodium was injected locally via a 25-G



► **Fig. 3** The submucosal tunnel created with a multifunctional snare (SOUTEN; Kaneka Medics, Tokyo, Japan).



► **Fig. 4** Endoscopic submucosal dissection was completed without any complications.



► **Fig. 5** The complete circumferential resection specimen.

tunnel resection [5], which is a standard strategy for esophageal ESD, comprised the creation of a 10-mm entry point proximal to the stenosis, and a submucosal tunnel (► **Fig. 3**); after penetration of the submucosal tunnel, the residual submucosa was resected (► **Fig. 4**, ► **Video 1**). The procedure was completed without complications (► **Fig. 5**).

Histological examination of the resected specimen revealed curative resection of squamous cell carcinoma.

The advantages of an SCE are its ability to enter the submucosal space easily and maintain fluent maneuverability in narrow spaces. An SCE and associated equipment are useful for ESD in cases with esophageal stenosis.

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### Competing interests

None

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### Bibliography

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