# Nasogastric tube combined with thin therapeutic endoscope to facilitate esophageal endoscopic submucosal dissection





Fig.1 During conventional esophageal ESD, air accumulates in the stomach.



**Fig.2** When esophageal ESD is performed using a nasogastric tube, the stomach remains collapsed.

Esophageal endoscopic submucosal dissection (ESD) has recently been widely performed to treat superficial esophageal cancer without lymph node metastasis or with a low risk of metastasis [1]. During esophageal ESD, air accumulates in the stomach (>Fig.1), which can cause a vagovagal reflex, resulting in vital sign changes such as bradycardia and hypotension. Even under sedation, patients complain of distress owing to the presence of air in the stomach, which results in increased body movement and sedative dosing. Moreover, a dilated stomach may lead to the complication of Mallory-Weiss syndrome during ESD [2].Thus, gastric air and fluid must be aspirated several times while performing esophageal ESD. The situation is similar in cases of gastric and colorectal ESD; frequent aspiration is time consuming and challenging.

Therefore, we developed a method for gastric ESD involving the use of a naso-gastric tube [3]. Tube placement during ESD has been reported to be helpful for treating large rectal tumors [4]. Hence, we considered using a nasogastric tube for esophageal ESD as a more efficient treatment option (**> Fig. 2**).

A 14F nasogastric tube (TOP Co., Tokyo, Japan) with a 3–0 nylon loop at the tip (**Fig. 3**) was inserted through the nasal cavity and clipped to the greater curvature of the gastric body (> Fig. 4). To minimize interference between the endoscope and the nasogastric tube, esophageal ESD was performed using a thin therapeutic endoscope (EG-840TP, Fujifilm Co., Tokyo, Japan), with an outer diameter of only 7.9mm but an accessory channel diameter of 3.2 mm (> Fig. 5) [5]. Air and fluid naturally drained from the stomach through the nasogastric tube; therefore, scope insertion into the stomach to aspirate air during ESD was not needed. Esophageal ESD was performed without any complications (> Video 1).



▶ Video 1 A nasogastric tube combined with a thin therapeutic endoscope to facilitate esophageal endoscopic submucosal dissection.



▶ Fig. 3 A 14F nasogastric tube (TOP Co., Tokyo, Japan) with a 3–0 nylon loop at the tip.



► Fig. 4 Endoscopic image of the nasogastric tube clipped to the greater curvature of the gastric body.

## Conclusions

In conclusion, esophageal ESD using a nasogastric tube is safe and convenient.

#### **Conflict of Interest**

The authors declare that they have no conflict of interest.

## The authors

Yuka Kowazaki<sup>1</sup>, Hisashi Fukuda<sup>1,2</sup>, Tetsurou Miwata<sup>1,3</sup>, Takaaki Morikawa<sup>1,2</sup>, Sawako Fujikura<sup>1,2</sup>, Jun Ushio<sup>1,4</sup>

- 1 Department of Gastroenterology, Jyoban Hospital, Tokiwa Foundation, Iwaki, Japan
- 2 Department of Medicine, Division of Gastroenterology, Jichi Medical University, Shimotsuke, Japan
- 3 Department of Gastroenterology and Hepatology, Mie University Hospital, Tsu, Japan
- 4 Department of Digestive Disease Center, Showa University Koto Toyosu Hospital, Koto-ku, Japan

### Corresponding author

#### Dr. Hisashi Fukuda

Jyoban Hospital, Tokiwa Foundation, Department of Gastroenterology, 57 Kaminodai, Jyobankamiyunagayamachi , 972-8322 Iwaki, Japan r0849hf@jichi.ac.jp



**Fig.5** A thin therapeutic endoscope (EG-840TP, Fujifilm Co., Tokyo, Japan) compared with a conventional therapeutic endoscope.

#### References

- Tsujii Y, Nishida T, Nishiyama O et al. Clinical outcomes of endoscopic submucosal dissection for superficial esophageal neoplasms: a multicenter retrospective cohort study. Endoscopy 2015; 47: 775–783
- [2] Chen W, Zhu XN, Wang J et al. Risk factors for Mallory-Weiss tear during endoscopic submucosal dissection of superficial esophageal neoplasms. World J Gastroenterol 2019; 25: 5174–5184
- [3]

Fukuda H, Hayashi Y, Kowazaki Y et al. Nasogastric-tube decompression facilitates the pocket-creation method of gastric endoscopic submucosal dissection. Endoscopy 2023; 55: E938–E939

- [4] Morikawa T, Hayashi Y, Fukuda H. Trans-anal tube facilitates endoscopic submucosal dissection of a >10 cm rectal laterally spreading tumor. Dig Endosc 2023; 35: e107–e108
- [5] Miura Y, Fukuda H, Ueno T et al. Endoscopic submucosal dissection of gastric neoplasms with severe fibrosis using a new thin-therapeutic endoscope and a dedicated conical cap. Endoscopy 2023; 55: E872–E873

#### Bibliography

Endosc Int Open 2024; 12: E1196–E1198 DOI 10.1055/a-2421-9676 ISSN 2364-3722

© 2024. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited. (https://creativecommons.org/licenses/by/4.0/).

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

