Article published online: 2023-05-26

Double-scope endoscopic submucosal dissection of superficial laryngeal cancer to preserve the superior laryngeal nerve

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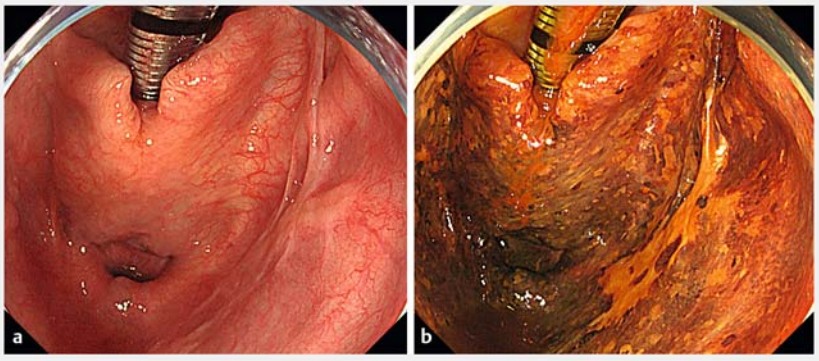
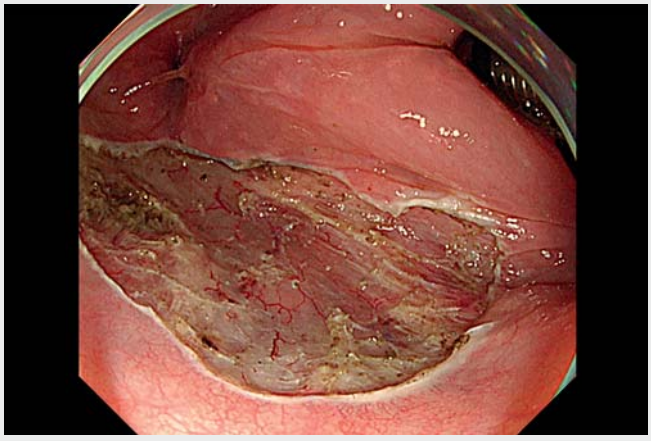
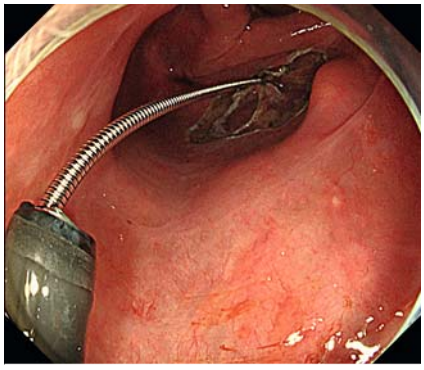


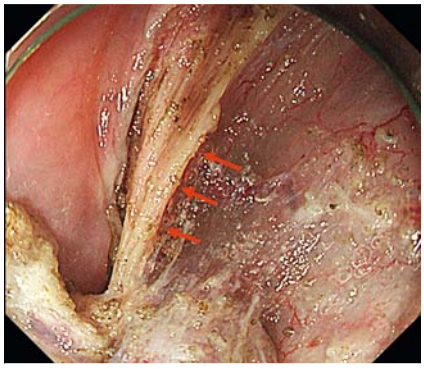
▶ **Fig. 1** Endoscopic images. **a** White-light image of the lesion. A 25 mm type 0-IIa lesion was located at the right piriform sinus. **b** 0.75 % Lugol chromoendoscopy. The lesion could be seen more clearly than with white-light imaging.



Video 1 Double-scope endoscopic submucosal dissection for superficial laryngeal cancer to preserve the superior laryngeal nerve.



▶ **Fig. 2** Proper traction with a transnasal thin endoscope and a grasping forceps.



▶ **Fig. 3** A good view of the internal branch of the superior laryngeal nerve (red arrows) was achieved with the double-scope method.

Endoscopic submucosal dissection (ESD) is a minimally invasive surgery for laryngeal cancers [1], during which nerve sparing is necessary to preserve function [2]. The internal branch of the superior laryngeal nerve (ibSLN) enters the parietal recess mucosa and is distributed in the submucosa of the larynx and hypopharynx [3]. The ibSLN controls sensory perception. Damage to this may result in loss of the laryngeal cough reflex, resulting in aspiration pneumonia. A previous study reported the efficacy of double-scope ESD (ds-ESD) for laryngeal cancers [4]. We believe that ds-ESD is effective in nerve preservation. Here, we report a case of successful nerve-sparing ESD using the double-scope method.

A 72-year-old man presented with a 25 mm type 0-IIa lesion of the right piriform sinus (▶ **Fig. 1 a**), which was surgically treated under general anesthesia (▶ **Video 1**). During treatment, an otolaryngologist elevated the larynx using a curved laryngoscope (Nagashima Medical Instruments Co., Ltd., Tokyo, Japan) to ensure an adequate working space. Chromoendoscopy with 0.75 % Lugol's solution clearly revealed the lesion (▶ **Fig. 1 b**), and marking dots were placed around the lesion using a Dual-Knife J (KD-655Q; Olympus, Tokyo, Japan). Cutting and dissection were performed using a transoral endoscope (GIF-H290T; Olympus). A saline solution was injected into the subepithelium. After the mucosa was cut and the subepithelial layer was dissected to a length

of ≥ 5 mm for grasping (▶ **Fig. 2**), appropriate traction was performed using a thin transnasal endoscope (GIF-1200N; Olympus) and grasping forceps (FG-4L-1; Olympus). The traction direction was changed by controlling the angle of the thin endoscope.

Proper traction with ds-ESD allowed visualization of the ibSLN and enabled nerve-sparing ESD (▶ **Fig. 3**). No dysphagia or aspiration pneumonia occurred after ESD.

Endoscopy_UCTN_Code_CCL_1AB_2AB

Acknowledgements

We would like to thank Editage (www.editage.com) for the English language editing and publication support.

Competing interests

The authors declare that they have no conflict of interest.

The authors

Yoshinori Horikawa[1], Koichi Hamada[1,2], Yoshiki Shiwa[1], Yusuke Mada[3], Kae Techigawara[1], Masafumi Ishikawa[1], Akiyoshi Ishiyama[4]

1 Department of Gastroenterology, Southern-Tohoku General Hospital, Koriyama, Japan
2 Department of Minimally Invasive Surgical and Medical Oncology, Fukushima Medical University, Fukushima, Japan
3 Department of Otolaryngology, Southern-Tohoku General Hospital, Koriyama, Japan
4 Department of Gastroenterology, Cancer Institute Hospital, Japanese Foundation for Cancer Research, Tokyo, Japan

Corresponding author

Yoshinori Horikawa, MD
Department of Gastroenterology, Southern-Tohoku General Hospital, 7-115, Yatsuyamada, Koriyama-shi, Fukushima 963-8563, Japan
horikawa.yoshinori.1985@gmail.com

References

[1] Iizuka T, Kikuchi D, Yugo S et al. Clinical relevance of endoscopic treatment for superficial pharyngeal cancer: feasibility of techniques corresponding to each location and long-term outcomes. Gastrointest Endosc 2021; 93: 818–827
[2] Kiray A, Naderi S, Ergur I et al. Surgical anatomy of the internal branch of the superior laryngeal nerve. Eur Spine J 2006; 15: 1320–1325
[3] Sun W, Wen WP, Zhu XL. Preservation of internal branch of superior laryngeal nerve during surgery for hypopharyngeal cancer. Ear Nose Throat J 2022; 101: 175–180
[4] Yoshio T, Tsuchida T, Ishiyama A et al. Efficacy of double-scope endoscopic submucosal dissection and long-term outcomes of endoscopic resection for superficial pharyngeal cancer. Dig Endosc 2017; 29: 152–159

Bibliography

Endoscopy 2023; 55: E749–E750
DOI 10.1055/a-2085-0774
ISSN 0013-726X
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