

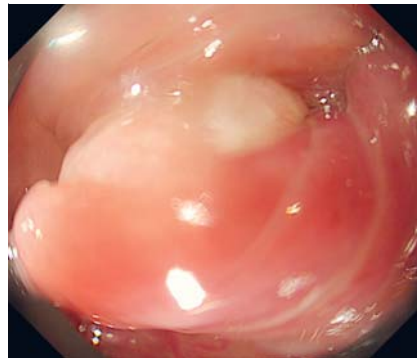
Endoscopic resection combined with gel immersion and curved laryngoscope for superficial hypopharyngeal cancer



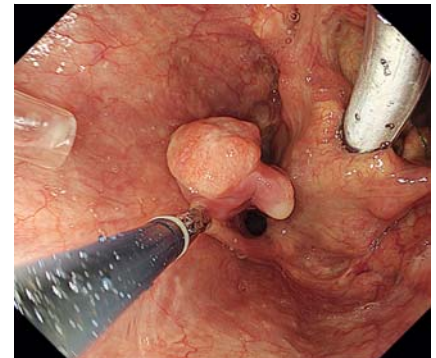
Transoral surgery using gastrointestinal endoscopy for superficial lesions near the pharyngoesophageal junction is an effective treatment [1, 2]. Gel immersion endoscopic mucosal resection has been reported to be a promising treatment for superficial lesions of the digestive tract [3–5].

A 59-year-old man who underwent esophagogastroduodenoscopy because of dysphagia exhibited a migrating, protruding lesion at the posterior wall of the hypopharynx near the pharyngoesophageal junction. Endoscopic examination failed to show the entire lesion due to natural constriction by the sphincter and the gag reflex (► **Fig. 1**). The lesion was pathologically diagnosed as squamous cell carcinoma. Because no obvious metastasis was identified, the patient was treated by transoral surgery under general anesthesia.

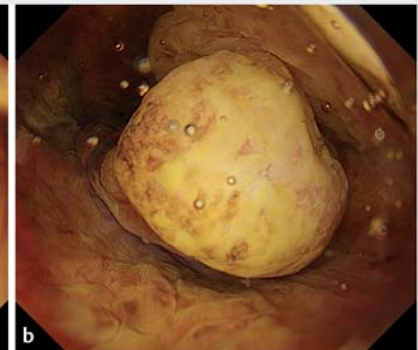
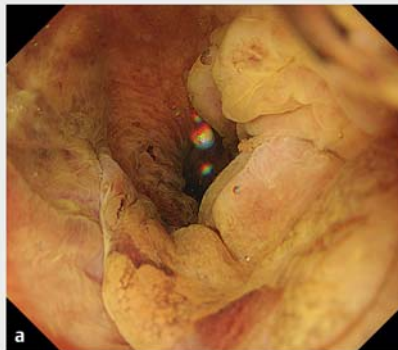
Wide hypopharyngeal exposure using a curved laryngoscope revealed that an 18 mm hypopharyngeal tumor with a stalk shifted to the esophagus. The lesion was pulled into the hypopharynx using grasping forceps (► **Fig. 2**). Magnifying endoscopy with narrow-band imaging showed no superficial extension beyond the base of the stalk. Clear viscous gel (VISCOCLEAR; Otsuka Pharmaceuticals Factory, Tokushima, Japan) was injected into the hypopharyngeal lumen to obtain a clear endoscopic view and maintain the expanded lumen. Lugol chromoendoscopy with gel immersion allowed us to determine the optimal surgical margins. Under gel immersion, sufficient buoyancy was obtained to float the lesion, and the lesion movement was reduced (► **Fig. 3**). Using a bipolar snare (Dragonare 20 mm; Xemex Co., Ltd., Tokyo, Japan) with electrocautery, en bloc resection was achieved within 5 minutes, without adverse events. The histopathological diagnosis confirmed squamous cell carcinoma invading the subepithelial layer, with negative margins and no



► **Fig. 1** Endoscopic image showing a migrating, protruding lesion at the pharyngoesophageal junction. Natural constriction by the sphincter and the gag reflex presented a challenge in visualizing the entire lesion.



► **Fig. 2** Wide hypopharyngeal exposure using a curved laryngoscope was employed under general anesthesia, and an 18 mm hypopharyngeal tumor with a stalk was confirmed using grasping forceps.



► **Fig. 3** Gel immersion endoscopy provided a favorable endoscopic field of view and sufficient buoyancy to float the lesion, facilitating snare resection. **a** Gel immersion Lugol chromoendoscopy showing the stalk of the lesion. **b** Gel immersion Lugol chromoendoscopy showing the head of the lesion.

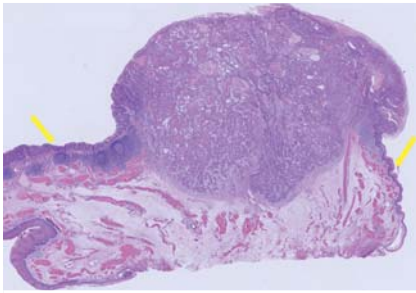
lymphovascular invasion. No additional treatment was given because there were no risk factors for metastasis (► **Fig. 4**, ► **Video 1**).

Endoscopic resection combined with gel immersion and curved laryngoscope may be an effective treatment strategy in locations where the lumen is narrow, such as the pharyngoesophageal junction.

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► **Fig. 4** En bloc resection was successfully achieved. The histopathological diagnosis was squamous cell carcinoma invading the subepithelial layer. The horizontal (arrows) and vertical margins were negative, and lymphovascular invasion was not detected.



► **Video 1** Endoscopic resection combined with gel immersion and curved laryngoscope provided a favorable endoscopic view and sufficient buoyancy for the lesion with a stalk at the pharyngoesophageal junction, leading to successful resection. Source for graphical illustration: Yasuaki Furue (Department of Gastroenterology, Kitasato University School of Medicine, Sagamihara, Japan).

Competing interests

The authors declare that they have no conflict of interest.

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