

Pocket-creation method in endoscopic submucosal dissection for a gastric carcinoma located on the pyloric ring



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Endoscopic submucosal dissection (ESD) of gastric neoplasms across the pyloric ring are technically difficult because of the narrowing anatomic features and peristaltic contractions of the pyloric muscles. Lesions beyond the pyloric ring cannot be completely observed with a forward-viewing endoscope, and the retroflex position at the bulb is difficult to operate because it is perpendicular to the muscular layer. These technical difficulties adversely affect accurate dissection of the lesion and decrease complete resection rates.^{1,2} So far, several methods for dealing with lesions beyond the pyloric ring have been reported.³⁻⁵ However, no consensus has been obtained.

The pocket-creation method (PCM) using a small-caliber-tip transparent (ST) hood (DH-33GR; Fujifilm, Tokyo, Japan) was developed in Japan. This method is safe and has a high en bloc resection rate for ESD.⁶⁻⁹ The advantages of PCM include (1) preventing endoscopic instability, (2) preventing leakage of the solution injected into the submucosa, and (3) allowing a position parallel to the lesion, result-

ing in a negative vertical margin (Fig. 1A and B). However, the usefulness of the PCM for gastric neoplasms across the pyloric ring remains unclear. Herein, we demonstrate effective treatment of gastric neoplasms by PCM (Video 1, available online at www.giejournal.org).

The patient had a depressed gastric adenocarcinoma (15 × 20 mm, Paris 0-IIc) located on the pyloric ring (Fig. 2). Although we initially attempted to pull it with endoscopic forceps, the tumor edge on the anal side was not visible. Considering potential technical difficulties, PCM was chosen. After the initial mucosal incision was made approximately 15 mm from the oral side of the tumor (Fig. 3A), submucosal dissection to create the pocket by inserting the ST hood was performed (Fig. 3B).⁴ After crossing the pyloric ring (Fig. 3C), submucosal dissection on the duodenal side was achieved horizontally by applying traction with the ST hood while visualizing the Brunnel's gland (Fig. 3D). The pocket was opened to perform en bloc resection. (Fig. 3E and F). We

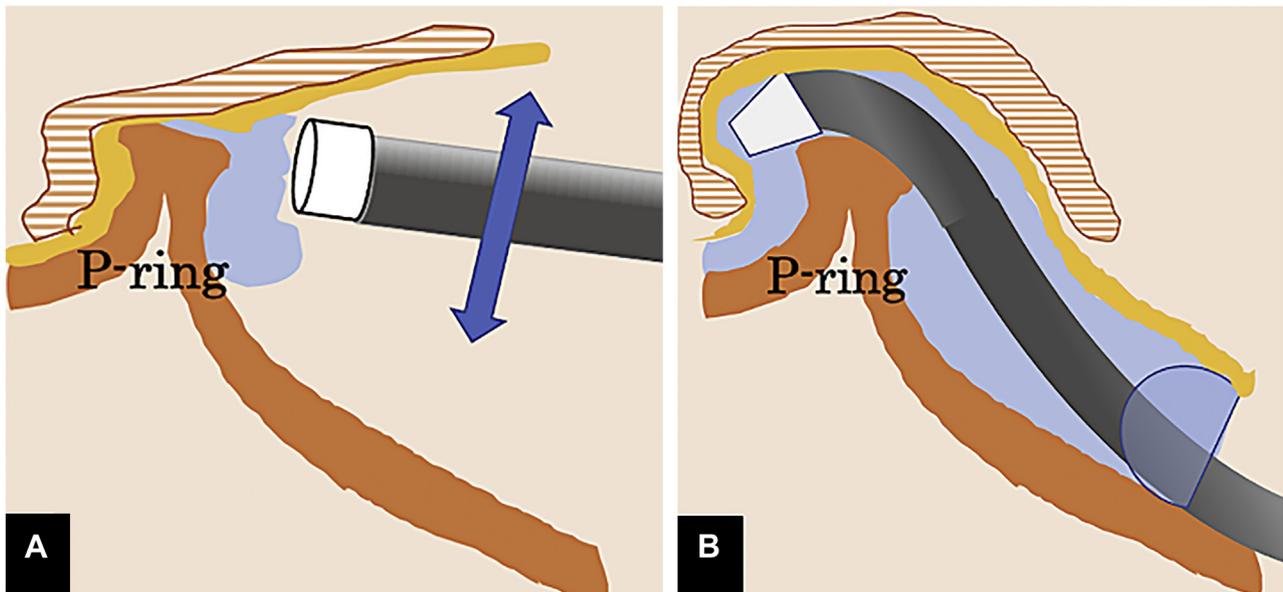


Figure 1. Comparison of the conventional and pocket-creating method in endoscopic submucosal dissection. **A**, In the conventional method, there are numerous peeling surfaces, which can easily expose the local fluid, and the stability of the endoscope is poor. Additionally, the conventional method is perpendicular to the muscle layer. **B**, The pocket-creating method maintains the local fluid, leading to a large space in the submucosal layer and excellent scope stability. Additionally, adjusting the direction of the knife was easy and enhanced the effect of traction using a small-caliber-tip transparent hood.



Figure 2. A depressed lesion, Paris 0-IIc, 15 × 20 mm in diameter, located on the pyloric ring.

performed endoscopic triamcinolone (40 mg) injection immediately after ESD for prevention of post-ESD stenosis, and no stenosis was observed at the 3-month follow-up.

We illustrate the feasibility and effectiveness of ESD using PCM for gastric neoplasms across the pyloric ring.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: ESD, endoscopic submucosal dissection; PCM, pocket-creation method; ST, small-caliber-tip transparent.

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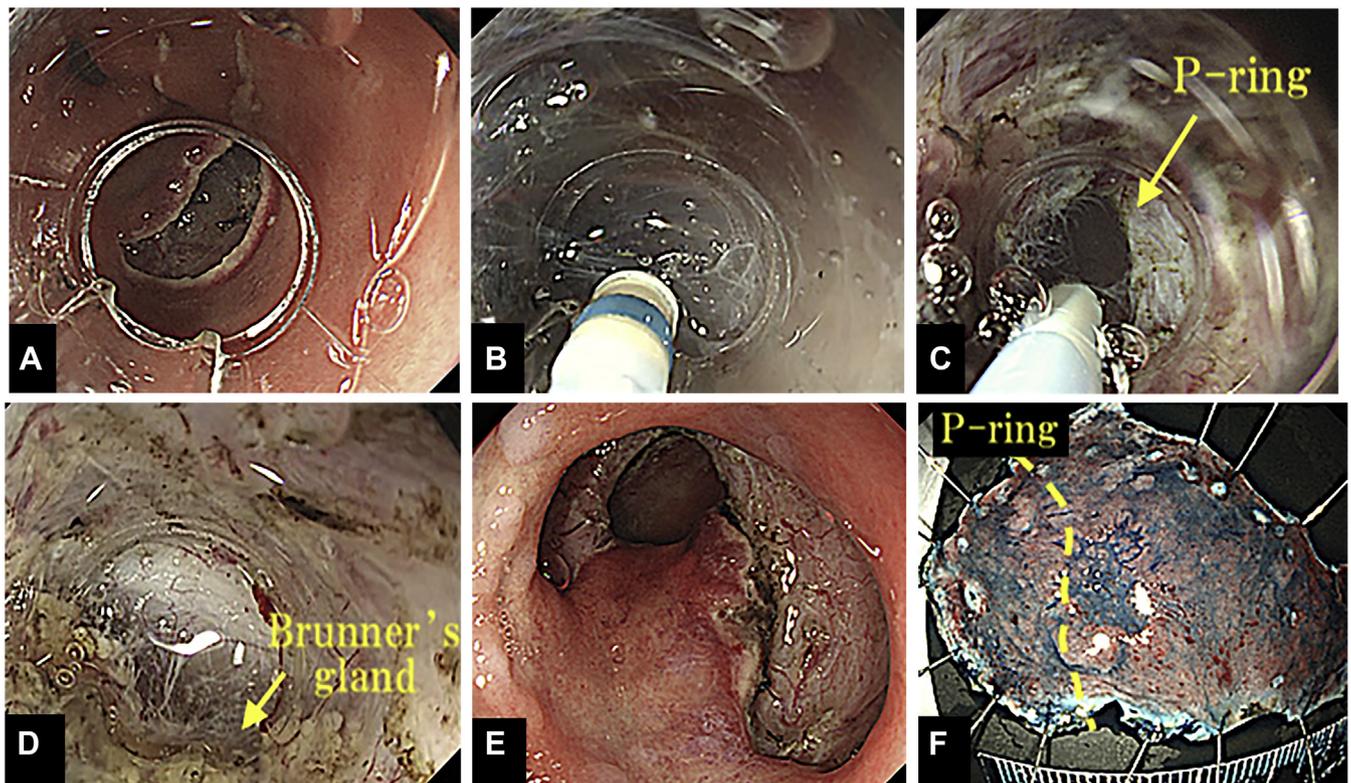


Figure 3. **A,** An initial mucosal incision approximately 15 mm in width was performed 15 mm from the oral side of the lesion after submucosal injection. **B,** Creating a submucosal pocket under the lesion. **C,** Dissection of the submucosal layer in a circular fashion along the pyloric ring while visualizing the associated muscle. **D,** In the duodenum, the Brunner's gland is used as a marker to dissect the submucosal layer, and the duodenal side can be approached horizontally using the small-caliber transparent hood for traction. **E,** Postendoscopic submucosal dissection of the ulcer. **F,** Resected specimen sprayed with indigo carmine. Pathologic examination revealed a well-differentiated intramucosal adenocarcinoma with negative vertical and lateral margins.

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<https://doi.org/10.1016/j.vgie.2021.02.012>

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