

CASE REPORT

## 내시경 점막하 박리술로 제거된 위의 중복 낭종 1예

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### Gastric Duplication Cyst Removed by Endoscopic Submucosal Dissection

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Duplication cysts are uncommon congenital malformations that may occur anywhere throughout the alimentary tract. The stomach is an extremely rare site of occurrence. Here, we report a case of gastric duplication cyst initially presenting with a gastric submucosal tumor. A 28-year-old man complained of dyspepsia lasting 1 year and upper endoscopy revealed an ellipsoid submucosal tumor at the greater curvature of the antrum. We intended to use the injection-and-cut technique; however, after saline injection, the lesion was dented and impossible to grasp with a snare. Therefore, we decided to perform endoscopic submucosal dissection and removed the tumor without complication. Histopathology revealed a 0.6×0.6 cm-sized duplication cyst, and there has been no recurrence in 2 years. (*Korean J Gastroenterol* 2011;58:346-349)

**Key Words:** Stomach; Duplication cyst; Endoscopic resection

#### INTRODUCTION

Duplication cysts are uncommon congenital malformations that may occur anywhere throughout the alimentary tract. The stomach is an extremely rare site of occurrence, comprising only about 2-9% of gastrointestinal duplication cysts.<sup>1,2</sup> Most are cystic in shape, usually occur along the greater curvature of the stomach, and have no communication with the stomach.<sup>3</sup>

Traditionally, gastric duplication cysts are surgically removed by minimal invasive laparoscopic techniques and there have been a few reports on endoscopic treatment for gastric duplication cyst.<sup>4,5</sup> We report a case of gastric duplication cyst that was removed with endoscopic submucosal dissection (ESD).

#### CASE REPORT

A 28-year-old man presented with a gastric submucosal tumor. He complained of dyspepsia lasting for a year. Upper endoscopy revealed an ellipsoid submucosal tumor at the greater curvature of antrum (Fig. 1A). Endoscopic ultrasonography showed an anechoic homogenous, oval lesion originating from the submucosal layer (Fig. 1B). The cyst wall was shown as a five-layered structure. Follow-up was recommended, but the patient insisted on removal and endoscopic resection was attempted. To decrease the risk of perforation or bleeding, we injected saline solution containing a small amount of epinephrine and indigo carmine beneath the lesion; however, the saline spread into the surrounding tissue and the lesion became flattened (Fig. 1C), which made it im-

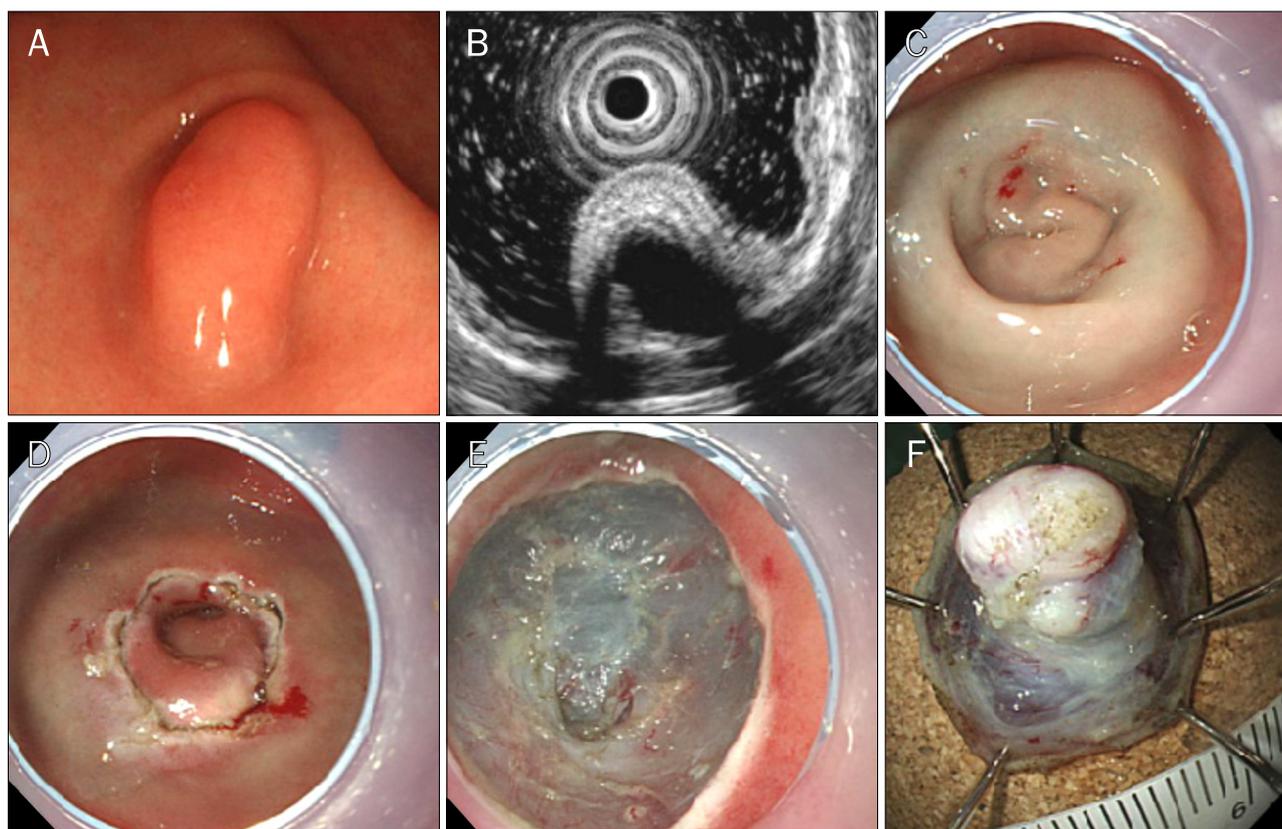
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**Fig. 1.** Endoscopic submucosal dissection of gastric duplication cyst. (A) A submucosal tumor at the greater curvature of the antrum. (B) EUS shows an anechoic homogenous, oval lesion originating from the submucosal layer of the stomach wall; the wall of the cystic lesion is shown as a five-layer structure. (C) After injecting saline with indigo carmine into the submucosa beneath the lesion, the lesion becomes flattened. (D) A complete circumference incision is made using an insulation-tipped knife. (E) The lesion is completely removed. (F) The inner surface of the resected specimen.

possible to remove via the injection-and-cut technique. Therefore, we decided to perform ESD and removed the tumor without complication (Fig. 1D, E, F). Histopathologic examinations revealed a 0.6×0.6 cm-sized cystic lesion lined by mucosa with columnar epithelium (Fig. 2). Ectopic pancreatic tissue was also present in the cystic wall. Although the causal relationship between dyspeptic symptoms and gastric duplication cyst was not clear, dyspepsia was subsided after ESD. After resection, there has been no recurrence during follow up for 2 years.

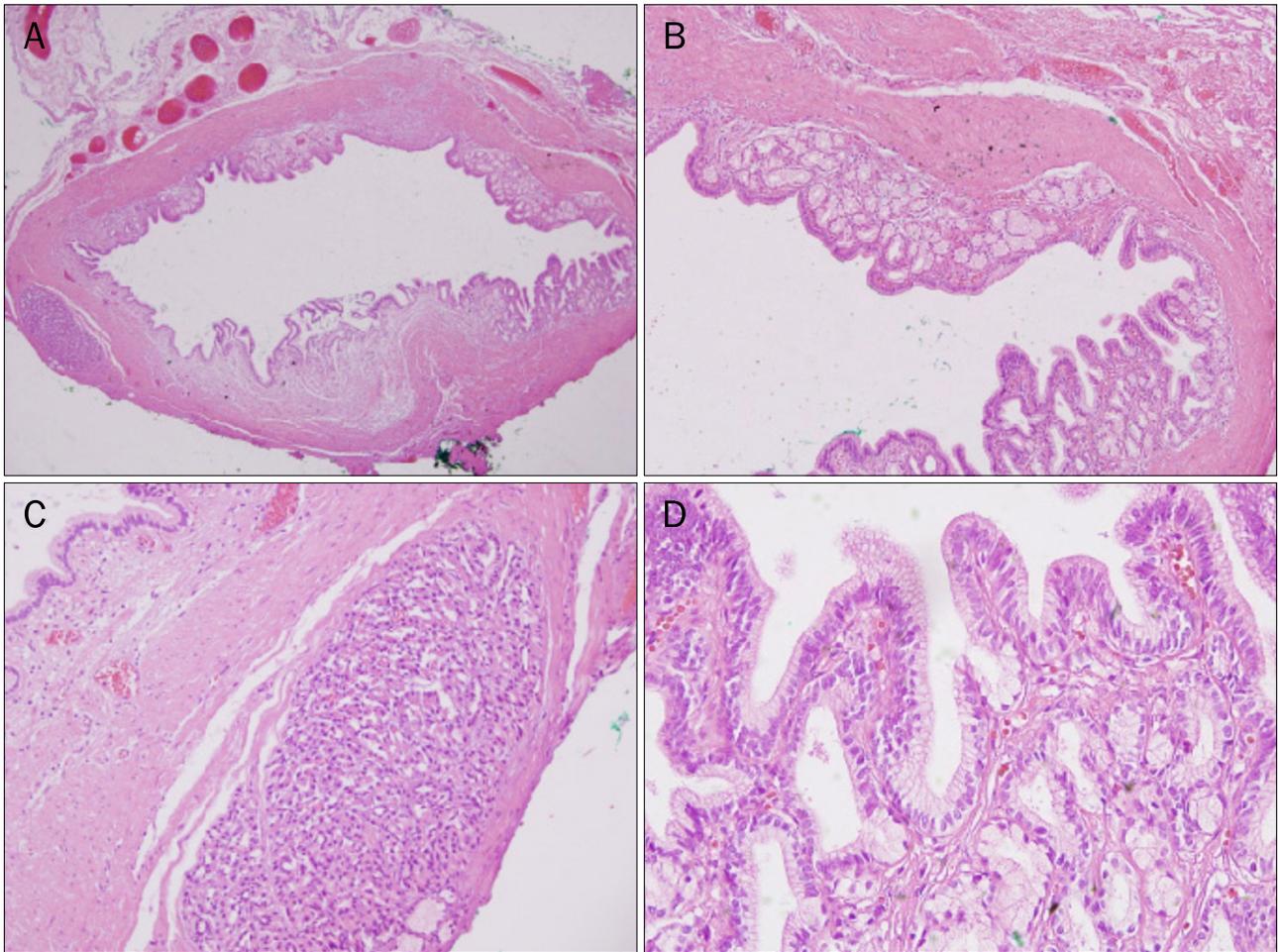
## DISCUSSION

Alimentary tract duplications are rare congenital anomalies that can occur anywhere along the alimentary tract from the tongue to the anus with the most common site in the ileum. Foregut duplication cyst of the stomach is relatively rare and the incidence in female is two to three times higher

than in male.<sup>2</sup> The pathogenesis is controversial, but abnormal recanalization after the solid epithelial stage of embryonic bowel development is thought by most as an underlying mechanism for these lesions.<sup>6</sup>

Most patients with duplication cyst of the stomach are asymptomatic and have no specific symptom, therefore, they are discovered incidentally by radiological examination or upper endoscopy. However, gastric duplication cysts can present with vague abdominal pain, dyspepsia, nausea, vomiting, hematemesis, melena, and subsequent anemia.<sup>2,7</sup>

Grossly, gastric duplication cysts are spheric cysts or tubular structures located in, or immediately adjacent to, part of the gastrointestinal tract.<sup>8</sup> Ectopic pancreatic tissue is found in the walls of up to 37% of gastric duplications, as present case.<sup>8</sup> The differential diagnosis includes various intramural tumors of the stomach, mesenteric cyst, congenital cyst of the pancreas, lymphoepithelial cyst of the pancreas, epithelial inclusion cyst of the spleen, post-traumatic pseudo-



**Fig. 2.** Histopathologic features of the resected specimen. (A) Pathologic examination revealed that the submucosal mass was a cystic lesion (H&E,  $\times 20$ ). (B) The cystic space was lined by columnar epithelial mucosa and had its own muscle layer (H&E,  $\times 40$ ). (C) In the cystic wall, ectopic pancreatic tissue was present, consisting of acinar and ductal structures (H&E,  $\times 40$ ). (D) The mucosa consisted of enteric-type columnar epithelium (H&E,  $\times 40$ ).

cyst of the spleen, and parasitic cyst of the spleen.<sup>6,8</sup>

Malignant transformation of gastric duplication cyst is extremely rare, and most cases are adenocarcinoma. Comparing with incidentally discovered benign gastric duplications, most patients with cancer arising from a gastric duplication cyst present with nausea, vomiting, weakness, weight loss, and abdominal pain.<sup>5,6</sup>

Small and asymptomatic duplication cysts are usually recommended observation and follow up. In case of need for removal of a gastric duplication cyst, conventional treatment is surgical resection and recently minimal invasive surgery and laparoscopic treatment of gastric duplication cyst were applied.<sup>4,5</sup> In this case, we intended to use the injection-and-cut technique with upper endoscopy; however, after saline injection, the lesion was dented and impossible to grasp

with a snare. Therefore, we performed ESD. ESD is an emerging technique for the treatment of early digestive neoplasms and submucosal tumor and this was the first case of a complete resection of a gastric duplication cyst by ESD.<sup>9</sup> We believe that this method is less invasive, and could be considered as an important therapeutic option in case of small duplication cyst which is planned to remove.

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