

# A 52-year-old Male with Pyloric Metaplasia in Duodenum

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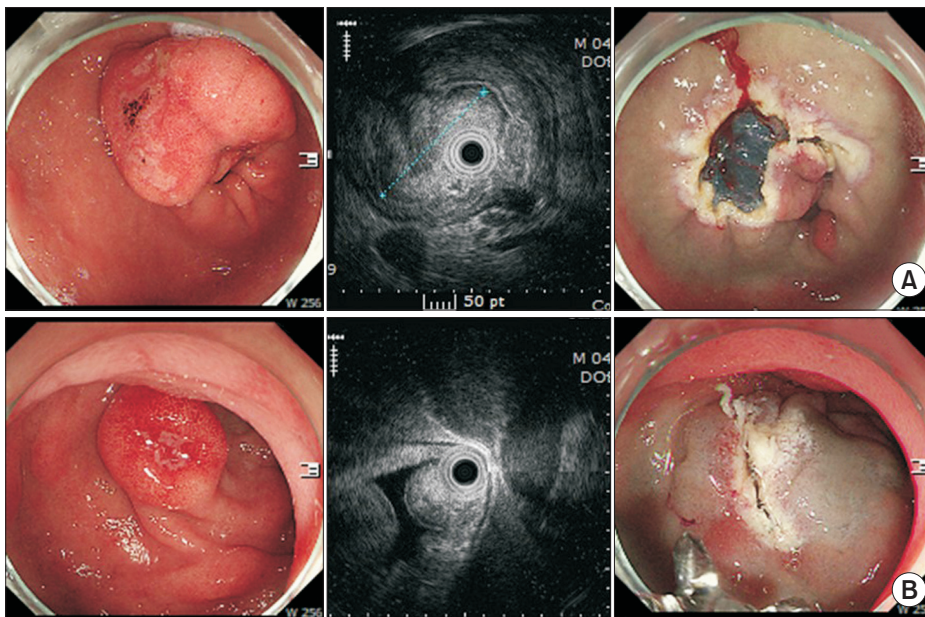
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**QUESTION:** A 52-year-old male was admitted to a hospital for endoscopic removal of protruding lesions with erosions in gastric antrum and duodenum (Fig. 1). Endoscopic ultrasonography demonstrated mixed echoic lesion arising from submucosal layer. He had undergone endoscopic mucosal resection for removal and pathologic confirm of the lesions (Fig. 1). Pathologic finding showed the gastric-type mucus secreting cells in the surface epithelium of the duodenum, which were similar findings of gastric lesions (Fig. 2) Immunohistochemically positivity for MUC5AC and MUC6 was seen in the surface layer of the tumor and deep in the tumor, respectively (Fig. 3). What is the diagnosis of duodenal lesion?

**ANSWER:** Pyloric metaplasia in duodenum.

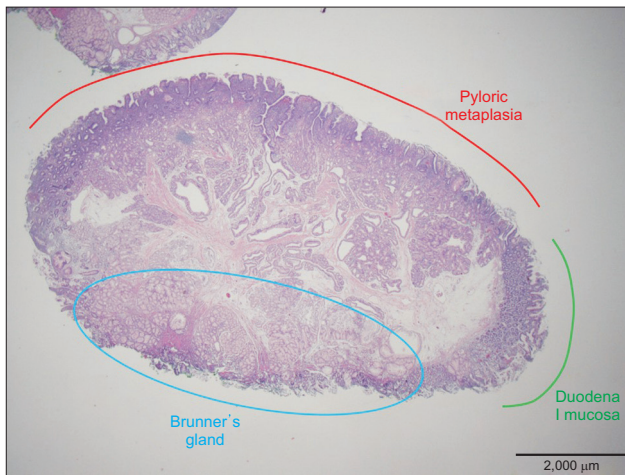
**REVIEW:** The gastrointestinal mucosa plays a role as an important barrier from the external stimuli [1]. The damage of mucosa requires local response for wound healing process, leading to the induction of reparative metaplastic lineages. This metaplastic lineage has characteristics of mucin-secreting lineages of distal stomach such as antral/pyloric glands and Brunner's glands. The presence of gastric pyloric-type glands has been known to associated with injury in the small bowel, which was called 'gastric metaplasia' or 'pyloric metaplasia'. It is associated with variable chronic



**Fig. 1.** Endoscopic findings from a 52-year-old man with protruding lesions with erosions in gastric antrum (A) and duodenum (B). Each endoscopic ultrasonographic finding demonstrated mixed echoic lesion arising from submucosal layer in gastric antrum and duodenum.

intestinal damage such as regional enteritis (Crohn's diseases), tuberculosis enteritis, and following gastro-jejunostomy [2]. Pyloric gland or gastric metaplasia has been recognized in association with duodenal ulcers. And also, the presence of pyloric gland metaplasia adjacent to duodenal ulcers is related to both *Helicobacter pylori* infection and acid production [3]. Duodenal epithelial tumors were classified into

two groups; tumors with CD10-positive brush borders of intestinal epithelium and MUC2 staining were classified as intestinal type and tumors with MUC5AC-positive and MUC6-positive phenotypes were classified as gastric type. The grade of atypia has been reported to be higher in gastric-type epithelial tumors [4]. Acute and chronic injury to the mucosa of the gastrointestinal tract lead to the emergence of metaplastic lineages with similar phenotypes of mucus-secreting glands of the gastric antrum. These preparative metaplasia provides protective mucins and growth factors to promote epithelial restitution. Further studies need to be performed to evaluate clinical characteristics and prognosis of metaplastic lesions in duodenum.



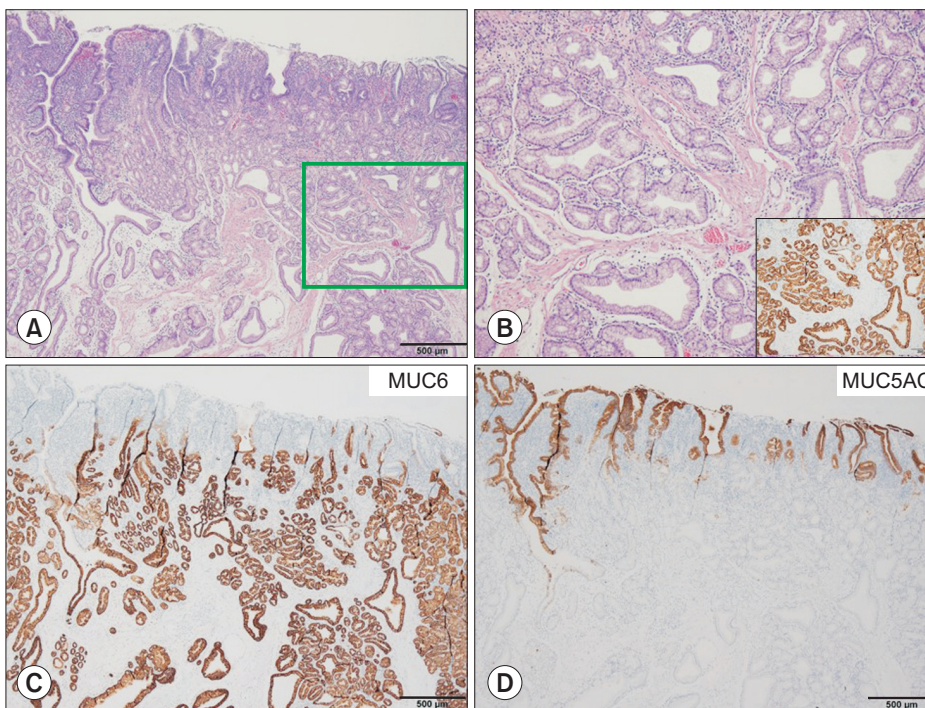
**Fig. 2.** Pathologic finding of resected specimen in duodenum. The gastric-type mucus secreting cells in the surface epithelium of the duodenum were noted, which were similar findings of gastric lesions (H&E stain).

### CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

### AUTHOR'S CONTRIBUTIONS

Conceptualization: Seon-Young Park. Writng draft and supervision: Hyun-Soo Kim, Seon-Young Park.



**Fig. 3.** H&E (A, B) and immunohistochemical (C, D) staining of resected specimen in duodenum. Positivity for MUC6 was seen in the deep layer in the tumor (C) and positivity for MUC5AC was seen in the surface layer (D).

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