Peptic ulcer diseases (PUDs) are common and can be complicated by inflammation, ulceration, or perforation.\(^1,2\) Organ penetration can occur into the pancreas, gastrohepatic omentum, biliary tract, or liver. But, penetration of the liver is rare and may lead to severe complications, such as upper gastrointestinal hemorrhage and abscess formation.

Here, we report the case of a 57-year-old man with a bile ductular proliferation in the gastric wall after a perforated gastric ulcer penetrated the liver.

**CASE REPORT**

A 57-year-old man was admitted to our hospital for further evaluation of a gastric malignancy. One month before admission, he was diagnosed with an adenocarcinoma by endoscopic biopsy at another hospital. A subtotal gastrectomy was performed to confirm malignancy and relieve the epigastric pain. Histologically, single glands were located between the ulcer base and attached liver tissue and stained positively for cytokeratin 19. The pathologic diagnosis was a gastric ulcer and bile ductular proliferation in the liver and gastric wall. Here, this report is the first Korean case of liver penetration of a gastric ulcer.

Liver penetration is one of the most serious complications of peptic ulcer diseases but is rarely encountered. A 57-year-old man was admitted to our hospital for further evaluation of a gastric malignancy. One month before admission, he was diagnosed with an adenocarcinoma by endoscopic biopsy at another hospital. A subtotal gastrectomy was performed to confirm malignancy and relieve the epigastric pain. Histologically, single glands were located between the ulcer base and attached liver tissue and stained positively for cytokeratin 19. The pathologic diagnosis was a gastric ulcer and bile ductular proliferation in the liver and gastric wall. Here, this report is the first Korean case of liver penetration of a gastric ulcer.

**Key Words:** Stomach ulcer; Penetration; Liver

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No mitotic figures were observed. Immunohistochemically, cytokeratin (CK)7 and CK19 (Fig. 3C) were positive in single glands, but CK20 was negative. The Ki-67 proliferation rate was very low. A paraffin block of a remnant specimen was prepared to search for tumor cells.

**DISCUSSION**

Perforation occurs in 5-10% of patients with PUD, and 60% of gastric ulcer perforations occur along the lesser curvature. Unusual presentations of a penetrating gastric ulcer include pneumopericardium, subcutaneous emphysema, splenic abscess, tension pneumothorax, gastropleural fistula, gastrobronchial fistula, gastroenteral fistula, and penetration of the heart and liver.

The hepatic-related complications of a perforated gastric ulcer are liver abscess, upper gastrointestinal hemorrhage, subcap-

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Fig. 1. Computed tomography scan shows focal gastric wall thickening with enhancement at the posterior wall of the mid-body of the stomach.

Fig. 2. Single glands are located between the ulcer base and the attached liver tissue.

Fig. 3. Histologically, the attached liver tissue shows ductular proliferation (A), and single glands are distributed in the gastric wall (B). Immunohistochemically, single glands in the gastric wall stain positively for cytokeratin 19 (C).
sular liver abscess, and liver rupture. Kayacetin and Kayacetin reported one case and reviewed 13 others of liver penetration by a peptic ulcer. A diagnosis was made in all cases by the presence of liver tissue on histological examinations of endoscopic biopsies, and males predominated (78.6%). Ulcers were located in the lesser curvature of the stomach (42.9%), in the anterior (21.4%) and posterior (7.1%) walls of the antrum, and in the anterior (14.3%) and posterior (14.3%) walls of duodenal bulbs. In no case was the ulcer recognized clinically or radiologically prior to endoscopy.

In present case, no liver was observed in two endoscopic biopsies. The gastrectomy specimen revealed single glands located between the ulcer base and attached liver tissue, and no atypism was observed in the cells of single glands. Immunohistochemically, single glands in the gastric wall and ductular proliferation in the attached liver tissue stained positively for CK19, but the Ki-67 proliferation rate was very low; thus, we concluded that the single glands in the gastric wall originated from the bile duct.

Slides of the remnant specimen were prepared, but no cancer cells were found, so the slide with the diagnosis of an adenocarcinoma from the other hospital was reviewed. The slide showed clustered gastric glands and single cells in the lamina propria with ulcer debris, which suggested reparative change. Accordingly, if a gastric malignancy is suspected, a histopathological examination of the endoscopic biopsy material is essential for diagnosis and for excluding a primary malignancy. Histopathological findings showed the presence of hepatic tissue or ductular proliferation in the specimen.

In summary, liver penetration by a gastric ulcer is uncommon. In such cases, a histopathological examination of the endoscopic biopsy material is essential for diagnosis and for excluding a primary malignancy. Histopathological findings showed the presence of hepatic tissue or ductular proliferation in the specimen.

REFERENCES