

Gastropancreatic Fistula: A Rare Complication of Peptic Ulcer Disease

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ABSTRACT

Peptic ulcer disease (PUD) has a significant health burden. Penetration is a rare complication of PUD, where an ulcer erodes into another organ. To the best of our knowledge, we present the fourth case in the literature where a gastric ulcer has penetrated the pancreas. A 67-year-old man with a history of PUD presented to the emergency department for epigastric pain. Endoscopy revealed a large gastric ulcer at the incisura with magnetic resonance imaging demonstrating gastropancreatic fistula. Our case emphasizes on the importance of timely identification and treatment strategies for gastropancreatic fistula, the rarest complications of PUD.

INTRODUCTION

Peptic ulcer disease (PUD) contributes to a significant health burden. Among the complications of PUD, bleeding is most common (73%), followed by perforation (9%).¹ Most perforations involve the anterior wall of the duodenum (60%).² Penetration is pathologically similar to perforation, except that the ulcer erodes into another organ such as the liver or the pancreas instead of the peritoneal cavity.³ An extensive literature search was performed on PubMed, Google Scholar, Embase, and MEDLINE to look for similar cases. Penetration into the pancreas from gastric ulcer is an extremely rare entity, with only a few reported cases in the literature so far.^{3–5} In this study, we present a case of gastric ulcer penetrating the pancreas and forming a gastropancreatic (GP) fistula.

CASE REPORT

A 67-year-old man with a medical history of refractory gastric ulcer presented with epigastric pain for 1 week. He denied taking nonsteroidal anti-inflammatory drugs. Vital signs were stable and laboratory results were unremarkable. Physical examination was positive for epigastric tenderness without any signs of peritonitis. Abdominal computed tomography (CT) with intravenous (IV) and oral contrast demonstrated 2 ulcers along the lesser curvature of the stomach, measuring 4.4×2.3 cm and 1.4×2.7 cm. The smaller ulcer extended to the pancreatic tail. So, abdominal magnetic resonance imaging with and without IV contrast was performed showing 2 gastric ulcers, correlating with CT, with 1 ulceration having broad abutment and tethering of the distal pancreatic body/tail. Underlying small fistulous tract was identified between gastric ulcer and distal pancreatic body/tail (Figure 1). No pneumoperitoneum was identified. Esophagogastroduodenoscopy (EGD) demonstrated a 4-cm cratered ulcer at the incisura of the stomach without evidence of fistula (Figure 2). Histopathology of the biopsy specimen revealed chronic inflammation of the lamina propria.

As there were no signs of peritonitis and his symptoms resolved by day 2, he was treated conservatively and was discharged on twice-daily 40-mg pantoprazole therapy. He had recurrent admissions for epigastric pain for the next 6 months despite being compliant with proton-pump inhibitor therapy. Repeat imaging showed a stable GP fistula. However, his severe epigastric pain persisted, and eventually, 6 months later after the diagnosis of the fistula, he underwent distal gastrectomy with gastrojejunostomy (Billroth II) for pain control. His pain resolved after the removal of the fistula. He was maintained on twice-daily proton-pump inhibitor therapy for the next year after the surgery. Pathology of the resected specimen revealed benign PUD without any evidence of *Helicobacter pylori* or malignancy.

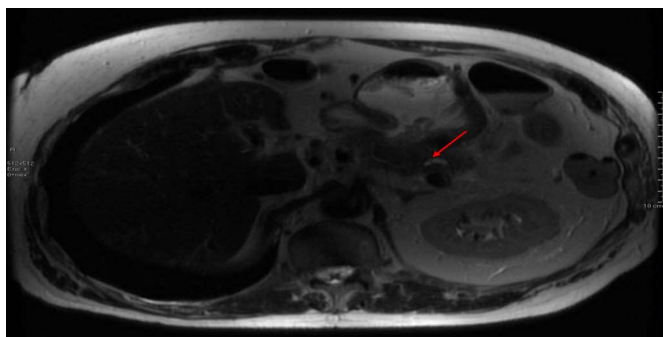


Figure 1. Magnetic resonance imaging showing the small fistulous tract (red arrow) connecting gastric body and the pancreatic tail in our patient.

DISCUSSION

Long-standing gastric ulcers can penetrate the pancreas with the formation of GP fistula. Here, we have compiled 3 cases of GP fistula from gastric ulcer with their different characteristics along with our current case report. The first case of GP fistula was described by Hughes and Blunck in 1987.⁵ The 41-year-old man with a medical history of PUD was admitted for perineal abscess. On the second day of the admission, his hemoglobin dropped. CT scan with oral contrast showed contrast flowing from the posterior wall of the stomach into the main pancreatic duct. The EGD showed a 1 × 1-cm ulcer on the posterior wall of the stomach, but no fistula was identified. Eventually, he underwent distal gastrectomy with gastrojejunostomy for a persistent drop in hemoglobin.

The second case of the GP fistula was described by Fujihara et al in 2012.³ A 57-year-old man presented to the emergency department with hematemesis. Laboratory studies on admission showed hemoglobin of 5.4 g/dL. Abdominal CT showed a defect in the gastric mucosa. EGD showed an active gastric ulcer of 40 mm in diameter, on the lesser curvature. Open gastrectomy with gastrojejunostomy was performed. The third case of GP fistula has been described by Shibukawa et al in 2017.⁴ The 62-year-old woman was admitted to the hospital with altered mental status with the diagnosis of septic shock secondary to osteomyelitis of the jaw. During the admission, she had melena. She underwent EGD, which revealed a giant ulcer at the antral greater

curvature of the stomach. A small opening was identified on the ulcer base which suggested perforation or penetration.

After analyzing all 4 cases, we have come up with the following conclusions and treatment strategies for GP fistula. Of the 4 cases, 2 had an ulcer on the lesser curvature, 1 had on the greater curvature, and 1 had on the posterior wall of the stomach. Ulcers on the lesser curvature may be more likely to penetrate the pancreas. Chronic nonresolving epigastric pain is the usual presenting symptom. So, in a patient with a history of PUD, the presence of nonresolving epigastric pain should prompt investigation for a possible GP fistula with a careful endoscopic examination and abdominal imaging. In 3 of 4 cases, the patient was not taking nonsteroidal anti-inflammatory drugs, no *H. pylori* was identified, and these idiopathic PUDs are more severe and difficult to treat.⁶ We suggest that GP fistula is more common with idiopathic PUD. Diagnosis requires CT or magnetic resonance imaging, demonstrating a fistulous tract as in our case. EGD may reveal a fistulous opening, but only 1 of the 4 cases demonstrated fistula on EGD, suggesting that gastroenterologists rely on imaging studies for the diagnosis. Histopathology helped rule out *H. pylori* or other etiologies of refractory PUD.

In all cases, conservative therapy was tried, but 3 of 4 cases did require distal gastrectomy and gastrojejunostomy for persistent epigastric pain, suggesting most patients with GP fistula may require surgery. However, a case report has mentioned a conservative approach in a patient with GP fistula with no signs of peritonitis.⁴ Also, in our case initially, the patient was treated conservatively because he did not have any signs of peritonitis and no free air under the diaphragm. Eventually, he underwent distal gastrectomy with gastrojejunostomy for nonresolving epigastric pain. These 4 cases have suggested that in a GP fistula because of gastric ulcer, if there are no signs of peritonitis, a conservative approach may be tried, and surgery can be offered later if the symptoms persist or the patient develops signs of peritonitis.

DISCLOSURES

Author contributions: S. Dhruv, D. Gurala, and V. Gumaste wrote the manuscript. J. Philipose revised the manuscript for intellectual content. S. Dhruv is the article guarantor.

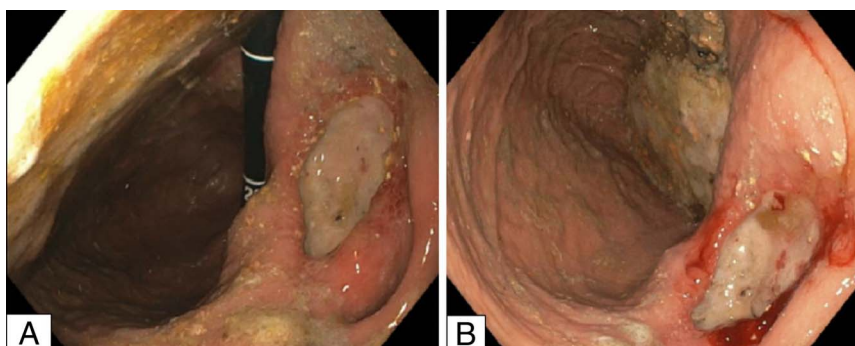


Figure 2. Upper endoscopy demonstrating a 4-cm cratered ulcer with heaped-up margins located at the incisura in a (A) retroflexed view and a (B) forward view.

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Informed consent was obtained for this case report.

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