

CASE STUDY IN GASTROENTEROLOGY & HEPATOLOGY

An Uncommon Complication of Peptic Ulcer Disease

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A 54-year-old African American woman presented with a 1-month history of intermittent, burning epigastric abdominal pain that was moderately severe in intensity. Her pain radiated toward her back in a band-like fashion. She also noted nausea and vomited once, with the vomit consisting of food particles. The patient denied having signs and symptoms of melena, hematochezia, or hematemesis. Her medical history was significant for peptic ulcer disease, and the patient had had multiple endoscopies in the past 6 years. It was learned that she had 2 clean-based antral ulcers 5 years prior (Figure 1) and was started on lansoprazole, which she could not afford and so was switched to omeprazole, which she used intermittently. She also admitted to past use of an over-the-counter analgesic consisting of acetaminophen, aspirin, and caffeine.

On examination, the patient's abdomen was soft and nondistended. Bowel sounds were present in all 4 quadrants. Mild tenderness was present over the epigastrium. Her hematocrit was 39.3%, and her basic laboratory findings were within normal limits. Imaging studies included an upper gastrointestinal series, which showed an accessory tract within the pylorus (Figure 2). An esophagogastroduodenoscopy (EGD) showed incidental findings of 2 separate openings of the pylorus into the small intestine, with clean-based gastric and duodenal bulb ulcers (Figure 3). Biopsies also were taken for *Helicobacter pylori*, the results of which were negative.

The patient was diagnosed with double pylorus, an uncommon complication of peptic ulcer disease. The patient was started on a proton pump inhibitor (PPI) and discharged in stable condition. She was also instructed to avoid nonsteroidal anti-inflammatory drugs (NSAIDs).

Discussion

Double pylorus is a rare gastrointestinal condition that is seen twice as often in men as women.^{1,2} Fewer than 100

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Figure 1. A previous endoscopic image showing a single pyloric channel.

cases have been reported in the literature worldwide, and the majority of patients have been European or Asian. Only 5 cases have been reported in the United States.

Double pylorus can be congenital or acquired. Congenital double pylorus is extremely rare. Acquired double pylorus is a complication of peptic ulcer disease. Rokitsansky and colleagues suggested that the new channel is formed by 2 separate ulcers, one in the lesser curvature of the stomach and the other in the duodenum, that erode toward each other, resulting in formation of a channel.^{2,3} The fistula and the pylorus are separated by a septum or bridge, which is also a usual site of ulcer formation.²

Most patients with acquired double pylorus have a long-standing history of peptic ulcer disease and/or NSAID use. Some patients have had multiple endoscopies that showed a normal single pyloric channel with ulcers in the stomach or duodenum, as seen in our patient. Interestingly, some patients with peptic ulcer disease report

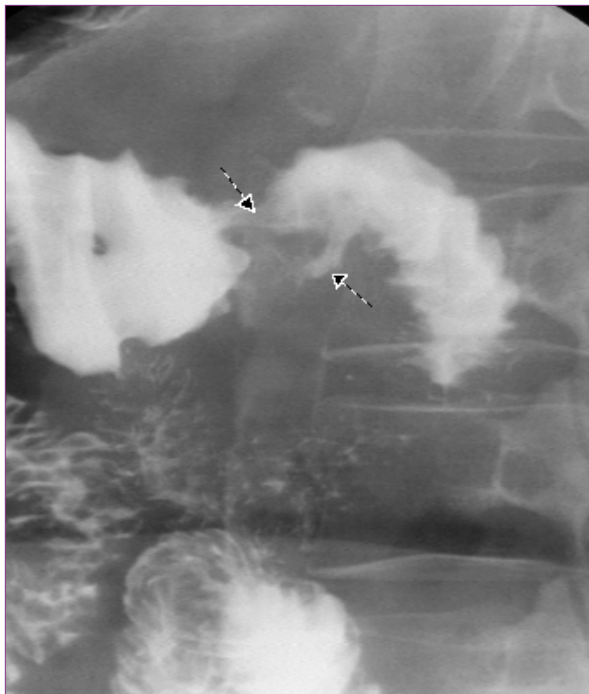


Figure 2. An upper gastrointestinal series showing contrast in both channels (arrows).

relief of symptoms after fistula formation.^{1,4,5} The timing of the formation of the fistula in our patient is unclear, as her last EGD was 5 years prior to presentation, between which time she was lost to follow-up.

Most patients in whom double pylorus develops have double pylorus despite being on antisecretory medications. The reason for poor healing despite treatment is unclear. Poor healing may be due to nonadherence, nonaffordability of medications, or use of ulcerogenic medications such as NSAIDs. Several systemic diseases, including diabetes mellitus, chronic obstructive pulmonary disease, chronic kidney disease, rheumatoid arthritis, and systemic lupus erythematosus, also have been reported to be associated with double pylorus.^{1,4,6-9} In our patient, nonadherence and use of NSAIDs led to double pylorus. The efficacy of PPIs in prevention of fistula formation is not known.

Double pylorus has a characteristic appearance on double-contrast studies but may easily be misinterpreted as polyps, tumors, or large mucosal folds.⁵ Endoscopy is generally the preferred visualization method. In most cases, double pylorus is found incidentally during endoscopic evaluation for abdominal pain, anemia, or melena. On endoscopy, a variable-dimensioned accessory channel is visualized without peristaltic movements. The accessory channel may vary from a few millimeters to several centimeters. The endoscope should be introduced separately through both channels to confirm the diagnosis.

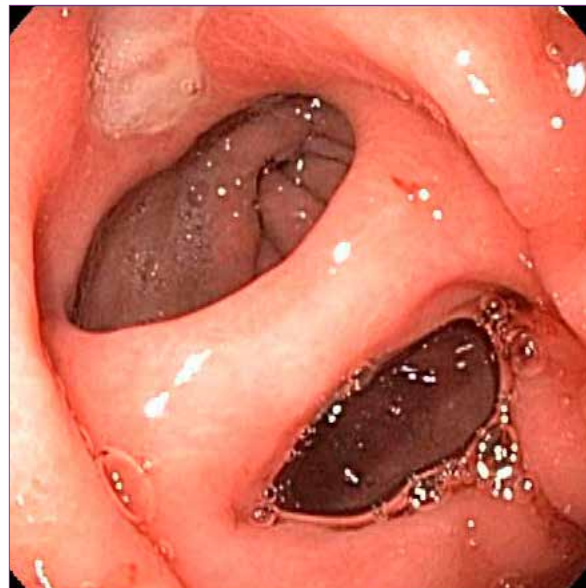


Figure 3. An esophagogastroduodenoscopy revealed a double pylorus. A clean-based ulcer is also visible.

Therapy should focus on removal of factors that impair mucosal healing. Ulcerogenic medications, such as NSAIDs or corticosteroids, should be avoided. *H pylori* infection should be investigated, as it has been shown to be common in double pylorus, with some reduction in symptoms following treatment of the infection.²

Even with repeated courses of antisecretory therapy, the closure rate of the fistula is very low. It is not yet known whether the convergence of 2 channels is of any benefit. Surgical intervention should be reserved for refractory cases or for gastric outlet obstruction due to recurrent ulcer formation.

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