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Case Report

A rare endoscopic finding – double pylorus

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Double pylorus is a rare gastrointestinal tract abnormality that is classified as congenital or acquired. Most cases are of the acquired type and result from intramural penetration of gastric or duodenal ulcers. We report a 76-year-old man with chronic kidney disease and gouty arthritis receiving non-steroidal anti-inflammatory drug (NSAID) who presented with chronic abdominal pain and tarry stool. Esophagogastroduodenoscopy (EGD) showed two openings at pre-pyloric antrum. Based on these findings, double pylorus was diagnosed. Etiology, clinical presentation, endoscopic characteristics, and treatment of this disease are reviewed.

Keywords: double pylorus, gastroduodenal fistula, gastric fistula, intestinal fistula, complication of peptic ulcer disease

Introduction

Double pylorus (DP) is a disease in which an accessory canal from the stomach to the duodenum develops, with two openings between the gastric antrum and duodenal bulb. The prevalence of DP is about 0.001-0.4%[1]. According to its etiology, it can be classified as congenital or acquired. Most published cases are of the acquired type.

The major symptoms of DP are abdominal pain, fullness, hematemesis, and tarry stool[3]. Some patients may experience severe symptoms, such as gastric outlet obstruction[4]. However, most congenital cases are asymptomatic. Endoscopic findings include two separate canals connecting the pre-pyloric antrum and duodenal bulb. Barium study is an alternative diagnostic method for this disease. Most cases of acquired DP respond well to conservative treatment. We herein report a patient with DP who presented with chronic abdominal pain and tarry stool.

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Case report

A 76-year-old man had underlying diseases of type 2 diabetes mellitus, chronic kidney disease, and gouty arthritis. He took non-steroidal anti-inflammatory drug (NSAID) intermittently for pain control. There was no remarkable history of peptic ulcer disease or tobacco consumption. However, he suffered from abdominal fullness, nausea, and epigastralgia for two months. Three days before seeking medical attention, he passed tarry stool several times. Upon admission, physical examination revealed mild pale conjunctiva and epigastric tenderness. Hemoglobin level was 7.9 g/dL (with baseline hemoglobin level about 9.0 g/dL). Esophagogastroduodenoscopy (EGD) demonstrated a gastroduodenal fistula on the lesser curvature

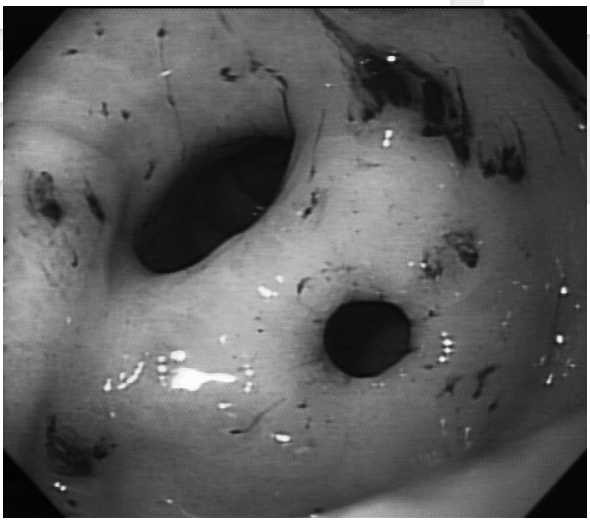

Figure 1. An additional orifice is evident on the lesser curvature side of the antrum without normal peristalsis.

Figure 2. Barium study with prone position shows two separate channels connecting the pre-pyloric antrum and duodenal bulb (black arrows).

side of pre-pyloric antrum. The endoscope could pass through both openings and a tissue bridge separated the two channels. The orifice near the greater curvature side of antrum had a smaller diameter and contracted intermittently, suggesting that it was the true pyloric ring (Fig.1). Multiple gastric erosions with hematin coating were noted, but no active bleeders were found. Barium study demonstrated two channels emptying into the

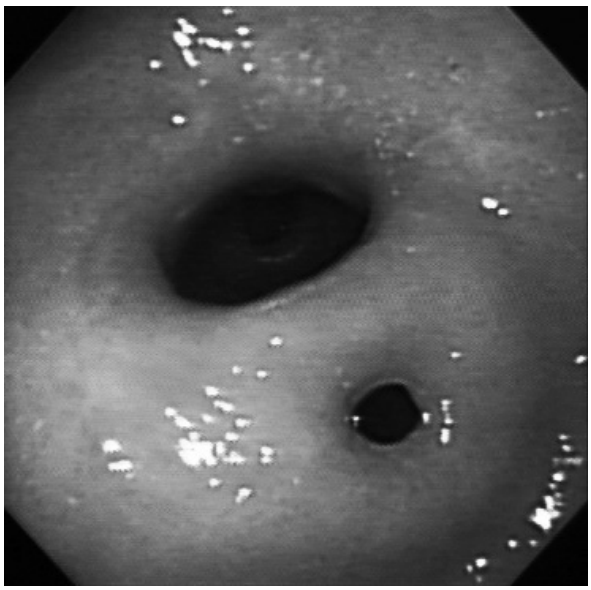

Figure 3. EGD performed four months later demonstrates two sustained openings of the antrum.

proximal duodenum, which were separated by a septum (Fig.2). Abdominal pain improved after administration of proton pump inhibitor (PPI) and prokinetic agents. After his discharge, we limited his NSAID use and prescribed oral PPI for 4 months. Helicobacter pylori quick test conducted during outpatient clinic visit was negative. Follow-up EGD four months later disclosed two sustained separate channels connecting pre-pyloric antrum and duodenal bulb (Fig.3). No further complications were noted.

Discussion

DP was first described endoscopically in 19695. It may occur as a congenital abnormality or an acquired complication of chronic peptic ulcer disease. The reported prevalence in endoscopic series is approximately 0.001-0.4%[1]. The prevalence in males is almost twice that in females[6]. The accessory channel is more commonly found on the lesser curvature side of the gastric antrum[3, 6].

Congenital DP occurs in both adults and children. It usually results from a gastric diverticulum[4, 7] or a duplication cyst[8]. Aberrant pancreatic tissue in fistula or orifice of equal size implies congenital origin following embryologic and developmental anomalies in the stomach and duodenum[4].

Peptic ulcer disease is associated with a variety of systemic diseases such as diabetes mellitus, chronic kidney disease, and chronic obstructive pulmonary disease. It is also associated with DP[1,14,15]. A relationship between systemic diseases and acquired DP has been considered, as ulcerogenic medications, such as NSAIDs or steroids, are prescribed for treating such diseases and they are associated with poor healing of peptic ulcers, leading to the formation of fistula[1,2]. DP patients may present with epigastric pain, dyspepsia, and gastrointestinal tract hemorrhage or DP may be found incidentally[9, 10]. Some patients with DP display a refractory course as the non-physiologic fistula allows for unimpeded biliary reflux, hindering ulcer healing. However, the majority of patients respond well to medical treatment[11]. Surgical intervention is usually not necessary. Associated endoscopic characteristics of acquired DP include accessory orifice of varying size without normal peristalsis, ulceration scar, and acute peptic ulcers[12, 13].

From the results of a long-term observational study, spontaneous closure of gastroduodenal fistula is rare (<10%). Convergence between these two openings is noted in about 25% of patients. Eradication of Helicobacter pylori in infected patients and avoidance of ulcerogenic medications, such as NSAIDs and corticosteroids, can prevent ulcer recurrence and relieve clinical symptoms of this disease[1, 12]. In our patient, abdominal pain decreased significantly after PPI treatment and there was no recurrence of ulcer four months later. Fistula closure or convergence with normal pyloric ring was not seen in this case.

In conclusion, acquired DP is a rare endoscopic finding that results from intramural penetration of gastric or duodenal ulcer. Treatment with PPIs, eradication of Helicobacter pylori in infected patients, and avoidance of ulcerogenic medications are recommended for acquired DP patients.

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