

Letters to the Editor

Acute upper bleeding due to an unusual complication of peptic ulcer disease – double pylorus

Key words: Gastrointestinal bleeding. Double pylorus. Peptic ulcer disease.

Dear Editor,

The inflammatory response to deeply penetrating peptic ulcer can lead to formation of a fistula between the stomach and any

structure nearby (1). Fistula arising between the stomach and duodenal bulb result in the appearance of a “double pylorus” which is a relatively rare condition (2,3). It can be either congenital or acquired and in most cases it is an acquired complication of peptic ulcer disease (2,3). We present the clinical and endoscopic findings of a case of double pylorus with acute upper bleeding.

Case report

A 73-year-old man, with a history of diabetes mellitus type 2, chronic renal failure, hypertension, osteoarticular degenerative disease, recent hospital admission for an otomastoiditis with a cervical abscess, chronically medicated with furosemide, enalapril, glimepiride and multiples nonsteroidal anti-inflammatory drugs (NSAIDs), was admitted in our emergency department with a first episode of malaenas. He denied previous epigastric discomfort or dyspeptic symptoms. On examination,



Fig. 1. Endoscopic finding of double pylorus. A. There is the true pylorus (white arrow) and in a upper position the "false" outlet (black arrow) caused by an ulcer penetrating into the gastric wall and burrowing back into the duodenal lumen leaving a mucosal bridge between the two outlets. B. Opening into duodenum (black arrow) and ulcer still active with haematin.

he was normotensive but anaemic with an hemoglobin level of 7.6 g/dL. The upper gastrointestinal endoscopy showed the presence of two openings from the stomach: one was the normal pylorus and the other opening, on the lesser curve of the peri-pyloric region, with edematous margins and a hematin based ulcer, represented a gastroduodenal fistula (Figs. 1 A and B). The condition was diagnosed as an acquired double pylorus. Biopsies of the ulcerative region showed an active atrophic chronic gastritis, *Helicobacter pylori* (*Hp*) negative, without evidence of malignancy. The patient was treated with a proton pump inhibitor. A follow-up endoscopy, 8 weeks and 1 year later, revealed resolution of the inflammatory changes with ulcera reepithelization, but gastroduodenal fistula still remained (Fig. 2). Biopsy of gastric mucosa again showed an atrophic chronic gastritis.



Fig. 2. Double pylorus 1 year after treatment, with gastroduodenal fistula still persistent.

Discussion

Duplication of the pylorus is one of the rare anomalies of the intestinal tract. The first case of a double pylorus was reported in 1969 by Smith (4). Since then, approximately 91 cases of double pylorus have been described in the literature. The prevalence in routine endoscopic and radiodiagnostic procedures is estimated at between 0.06 and 0.4% (3,5).

In general, this condition tends to be clinically silent, mostly found incidentally by endoscopic or X-ray examination (5,6). When symptomatic, it is clinically similar to peptic ulcer disease (2,3). There are few reports on clinical improvement with fistula formation (3,7).

The findings on endoscopy clinch the diagnosis, with the orifice of the fistula being visible adjacent to the pylorus. In the

majority of cases occurs on the lesser curve of the gastric antrum and connects to the superior wall of the duodenal bulb (2,3,5,8). There have been a few reports of double pylorus formed as a result of duodenal ulcer (9) and gastric cancer (10). The fistula in our case was lined by gastric epithelium and so it was a complication of a gastric ulcer.

The reasons for development of the fistula remain unclear, but many systemic diseases such as diabetes mellitus, chronic renal failure, chronic rheumatism, systemic lupus erythematosus and chronic obstructive pulmonary disease may be associated with it (2,3,8). A long history of treatment with drugs including corticosteroids and NSAIDs may also prohibit healing, leading to fistula formation (3,8). Association of double pylorus with *Hp* has not yet been elucidated, although this bacteria is known to be responsible for recurrent or refractory ulcers (2,3). We think that the formation of double pylorus in this case resulted from NSAIDs abuse in conjunction with patient multiple concomitant diseases. In this case, *Hp* infection was absent.

Treatment recommendations have included avoidance of ulcerogenic medications, institution of intensive antiulcer treatment (8) and *Hp* eradication (though no significant benefit has been shown in symptom resolution, decreasing ulcer recurrence or in fistula closure) (8).

According to the study reported by Hu et al., fistula remained open in the majority of patients (60%), converged to form a large single pylorus in 25% and closed in 5% of patients (8). In the above-described case the fistula was still patent 1 year later.

In conclusion, the double pylorus appears to be a complication of peptic ulcer disease, which can be managed by medical therapy without complications. This case highlights the association between the abuse of anti-inflammatory medications and presence of multiple systemic diseases as important factors in appearance and persistence of double pylorus.

P. Peixoto, A. Sadio, E. Cancela, A. Castanheira, P. Ministro, A. Silva and A. Caldas

Gastroenterology Department. São Teotónio Hospital. Viseu, Portugal

References

1. Culafić DM, Matejić OD, Dukić VS, Vukcević MD, Kerkez MD. Spontaneous gastrojejunal fistula is a complication of gastric ulcer. *World J Gastroenterol* 2007; 13: 483-5.
2. Kwan WH, Yeung WH, Chan TM, Cheng CS. Double pylorus with occult gastrointestinal bleeding. *J HK Coll Radiol* 2001; 4: 157-9.
3. Safatle-Ribeiro AV, Ribeiro Júnior U, Habr-Gama A, Gama-Rodrigues JJ. Double pylorus: case report and review of the literature. *Rev Hosp Clin Fac Med Sao Paulo* 1999; 54: 131-4.
4. Smith VM, Tuttle KW. Gastroduodenal (pyloric) band. Endoscopic findings and first reported case. *Gastroenterology* 1969; 56: 331-6.
5. Akazawa Y, Mizuta Y, Osabe M, Nakamura T, Morikawa S, Isomoto H, et al. A case of double pylorus caused by recurrent gastric ulcers: a long-term endoscopic observation. *Dig Dis Sci* 2005; 50: 2125-8.
6. Jiménez F. Double pylorus...? To be or not to be. Case report and review of the literature. *Acta Gastroenterol Latinoam* 2000; 30: 191-4.
7. Hegedus V, Poulsen PE, Reichardt J. The natural history of the double

- pylorus. *Radiology* 1978; 126: 29-34.
8. Hu TH, Tsai TL, Hsu CC, Lu SN, Hsiao M, Changchien CS. Clinical characteristics of double pylorus. *Gastrointest Endosc* 2001; 54: 464-70.
 9. Hu TH, Tai DI, Changchien CS, Chen TY, Chang WC. Double pylorus: report of a longitudinal follow-up in two refractory cases with underlying diseases. *Am J Gastroenterol* 1995; 90: 815-8.
 10. Matsuyama E, Nagashima R, Watanabe S, Takahashi T. Endoscopic hemostasis for hemorrhage from gastric cancer complicated by double-channel pylorus. *Gastrointest Endosc* 2001; 53: 679-80.