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The Acquired Double Pylorus

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Four patients with the double pylorus are reported. In view of an earlier history of peptic ulcer disease, the double pylorus is considered to have been acquired in all four. The literature involving 54 reported cases is reviewed, and the natural history of the double pylorus is discussed.

Perforation or fistula formation from gastric ulcers to adjacent hollow organs is a rare phenomenon and is considered a serious complication. Such perforation may lead to the colon, the common duct, and less often to the left pleural cavity or left ventricle. The double pylorus, a fistula connecting the gastric antrum with the duodenal bulb, is also considered a complication of peptic ulcer disease, although congenital double pylorus has been observed. We wish to report four patients with the double pylorus observed by upper gastrointestinal endoscopy during 4,000 consecutive examinations.

Case Reports

Case 1

A 63-year-old woman with a ten-year history of peptic ulcer disease was diagnosed by multiple radiologic studies. In recent years her symptoms became intractable. The upper gastrointestinal barium study obtained before endoscopy showed deformity of the gastric antrum and duodenum with a possible double pyloric channel. During the subsequent endoscopic examination we saw a large antral ulceration with a narrow fistula leading into the duodenal bulb (Fig. 1). These observations were later confirmed by surgery.

Case 2

A 47-year-old man who had a two-year history of known peptic ulcer disease had radiologically documented gastric as well as duodenal ulcerations. Barium studies performed before endoscopy revealed severe deformity of the gastric outlet. During gastroduodenoscopy a pyloric band with a double pyloric channel was seen (Fig. 2). Both channels could easily be passed with the tip of the instrument, and both led into the duodenal bulb.

Case 3

A 66-year-old woman had gastrointestinal bleeding six months before examination. After a second bleeding episode, a gastroduodenoscopy was performed, and a small opening was noted adjacent to the pylorus. This opening, friable and bleeding, was probed with the biopsy forceps, which entered deeply and was then observed to reappear within the duodenal bulb. Upper gastrointestinal barium studies and later surgery confirmed the diagnosis of double pylorus.

Fig. 1. Case 1

Large antral ulcer with a small fistula leading into the duodenal bulb.
Acquired Double Pylorus

Case 4
An 88-year-old woman had a long history of peptic ulcer disease with radiologic demonstration of frequent, active antral ulcerations. Radiographic studies obtained before endoscopy revealed marked deformity of the duodenal bulb. During the endoscopic examination severe scarring of the antrum was noted with two smooth openings leading into the duodenal bulb (Fig. 3). No evidence of active ulcer disease was seen at this time.

Discussion
Rokitanski (1) in his original description suggested that gastroduodenal fistula or double pylorus may result from the erosion of gastric and duodenal ulcers toward each other. Since 1961 54 cases of double pylorus have been reported in the literature (2-17). Most were considered lesions acquired as complications of peptic ulcer disease. The gradual progression from an antral ulcer to an antroduodenal fistula or double pylorus has been observed by Hegedus (13). Rhode, et al (8) described periodic endoscopic examinations of a prepyloric ulcer for 11 months before it penetrated into the duodenal bulb. The development of a fistula caused by peptic ulcer disease has also been described by Ito and Blackstone (18), who observed a gastric fistula linking two gastric ulcers.

Congenital abnormalities of the stomach are uncommon and consist mostly of antral diaphragms. By 1970, 48 cases were reported (19). Of the 54 patients reported with the double pylorus, only two have a truly congenital duplication of the pyloric channel (3,13). A third patient considered by Fruehmorgen (4) to have a congenital double pyloric channel presented with a long history suggestive of peptic ulcer disease.

The gastric ulcer, which leads to the fistula, is located in the prepyloric gastric antrum and penetrates through the pyloric ring or the prepyloric mucosa. Gould’s review (2) of twenty cases described two types of the acquired double pylorus. The first type connects the lesser curvature of the antrum in its lower third with the first portion of the duodenum (14 of 20). Gould suggests that this fistula can occur only if the duodenal cap is unusually close to the lesser curvature. The second type is a fistula connecting the posterior gastric wall with the third portion of the duodenum (6 of 20). All patients reported since 1961 are Type I.

The development of a double pylorus is occasionally associated with diminution of ulcer symptoms (13). Two of our patients were free of significant complaints when their double pylorus was discovered. The double pylorus may relieve symptoms by permitting accelerated gastric emptying.
The reported incidence of the acquired double pylorus is about one per 1,000 patients examined. Hanson (5) observed four patients among 3,500 consecutive endoscopic examinations, while Hegedus (13) found 11 among 7,800 consecutive radiographic examinations. We saw four patients with double pylorus in 4,000 consecutive upper gastrointestinal endoscopies.

The double pylorus is diagnosed by means of radiographic or endoscopic examination. As awareness of the characteristic roentgenographic appearance increases, and as endoscopic expertise improves, the reported incidence should increase.

References