Ectopic Pancreas with Gastric Outlet Obstruction: Report of Two Cases and Literature Review

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Ectopic pancreas is a rare entity and is usually an incidental finding in clinical practice. Most patients with an ectopic pancreas are asymptomatic, and if present, symptoms are nonspecific according to the site of the lesion and different complications encountered. The most-common site is the stomach, accounting for 25%-38.2% of all patients. An asymptomatic ectopic pancreas is usually of no clinical importance, and there is no surgical indication in such a situation. However if there are complications caused by an ectopic pancreas, a variety of actions becomes necessary. We report 2 cases of ectopic pancreas with gastric outlet obstruction. The first case was a 41-year-old man who suffered from epigastric fullness and dyspepsia for 3 years. Endoscopic examination revealed a submucosal tumor measuring 2.5 cm in diameter in the prepyloric area. The second case was a 53-year-old man, who initially underwent a craniotomy to remove a pituitary adenoma, and laparotomy and duodenorrhaphy due to a perforated peptic ulcer. The postoperative course was not uneventful, and an upper gastrointestinal series showed a 2-cm intramural mass with a mucosal ulcer at the distal antrum. Both cases had symptoms and signs of gastric outlet obstruction, and both cases accepted subtotal gastrectomy with Billroth II anastomosis. A review of the literature revealed few cases of ectopic pancreas with gastric outlet obstruction. An ectopic pancreas must be considered in the differential diagnosis of gastric outlet obstruction. *(Chang Gung Med J 2002;25:485-90)*

Key words: ectopic pancreas, gastric outlet obstruction.

Ectopic pancreas is a rare entity and is usually an incidental finding in clinical practice and is of no clinical importance.[1] Most patients with an ectopic pancreas are asymptomatic, and there is no surgical indication in such a situation. However if symptoms are present, they are usually nonspecific according to the site of the lesion and different complications encountered. Removal becomes necessary if complications are caused by an ectopic pancreas. In this report, we present 2 rare cases of ectopic pancreas that caused gastric outlet obstruction, and review the literature.

CASE REPORTS

Case 1

This 41-year-old man had suffered from epigastric fullness and dyspepsia for 3 years. He visited our outpatient department (OPD) for treatment. Abdominal pain and tarry stool were also mentioned

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by the patient on arrival. Endoscopy was arranged at that time, and a submucosal tumor measuring about 2.0 cm in diameter on the side of the prepyloric region with greater curvature was found. No gastric or duodenal ulcer was seen. Endoscopic ultrasonography was then arranged, and a 2.5 cm isoechoic tumor with blurring mucosal and submucosa layers and some hypoechoic components in it was found in the prepyloric region (Fig. 1). Our impression was compatible with an ectopic pancreas. With medical treatment, his symptoms improved, and he continued with regular follow-up at our OPD. However, the

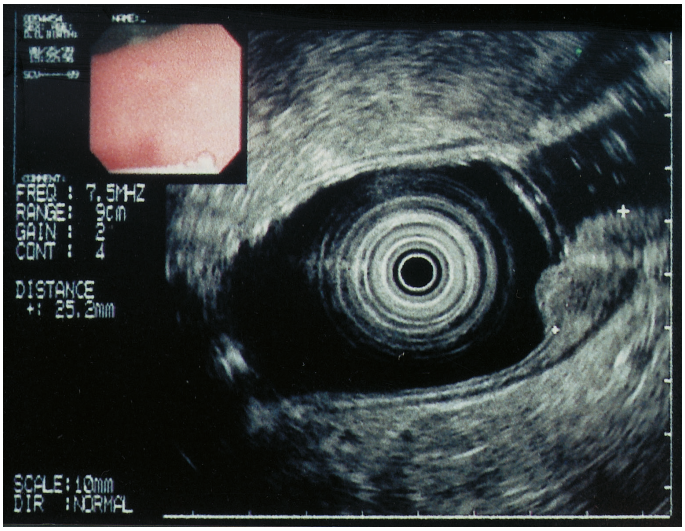

Fig. 1 Endoscopic ultrasonography showing a 2.5-cm isoechoic tumor with a central pit. There is blurring mucosal and submucosal layers with some hypoechoic components. The muscularis propria layer is intact.

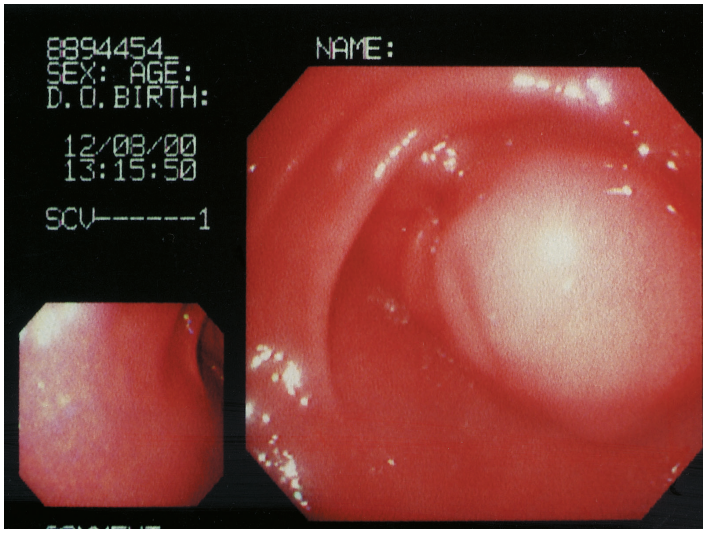

Fig. 2 Endoscopy revealing a submucosal tumor with an intact mucosal surface and a large central dimple, located on the posterior wall on the side with greater curvature. It is larger than 2.5 cm in diameter.

abdominal fullness, pain, and dyspepsia worsened, and he experienced body weight loss of more than 10% within 1 year which was revealed 15 months after initial diagnosis and treatment. A second endoscopic examination was performed. It revealed a prepyloric submucosal tumor with an intact mucosal surface and a central dimple, located on the posterior wall of the side with greater curvature. The tumor was greater than 2.5 cm in diameter (Fig. 2). He was transferred to our department. On physical examination, his abdomen was soft and flat without a palpable mass. Mild epigastric tenderness was found. Data from the laboratory investigation were all within normal limits except for a positive HBs Ag.

Subsequently, a laparotomy was performed. After palpation of the stomach, a prepyloric mass 2-2.5 cm in size was found proximal to the pylorus on the posterior wall. A subtotal gastrectomy with Billroth II anastomosis was performed. The pathology report showed a 1.5 ¡ 1.5 ¡ 1.0-cm ectopic pancreas in the submucosa and muscle wall in the prepyloric area of the stomach (Fig. 3). The postoperative course was uneventful, and he was discharged on the eighth postoperative day, tolerating intake without complaint. At 3-month follow up, he was completely free from the previous symptoms.

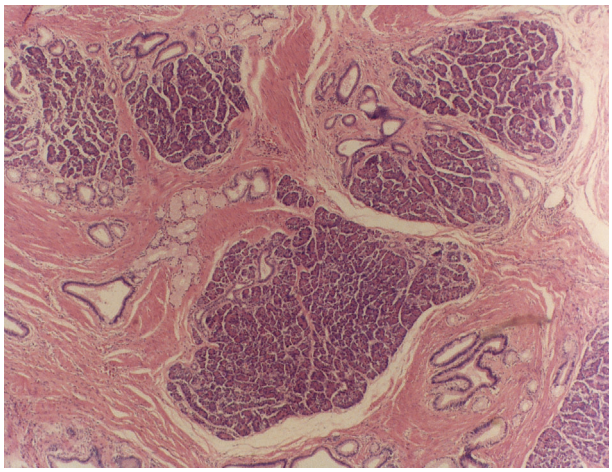

Fig. 3 Pathology showing pancreatic islet cells and ducts in the gastric submucosal and muscular layers. (H & E stain, 100 ¡)

Case 2

The second case was a 53-year-old man who was initially admitted to our hospital due to pituitary adenoma with bilateral hemianopsia. He underwent a frontotemporal craniotomy and removal of a pituitary adenoma in October 2000. Unfortunately, he was found to have a perforated duodenal ulcer 3 days later after a craniotomy. Emergent laparotomy and duodenorrhaphy were performed. His consciousness level did not fully recover after the craniotomy, and he was cared in the neurosurgery department ward for the following 2 months. Nasogastric tube feeding was smooth during this period. However, his abdomen became distended, after which nasogastric tube feeding became impossible. After decompression, the nasogastric tube drain volume was larger than 2000 ml per day. An upper gastrointestinal series revealed an intramural mass with a mucosal ulcer at the distal antrum (Fig. 4).

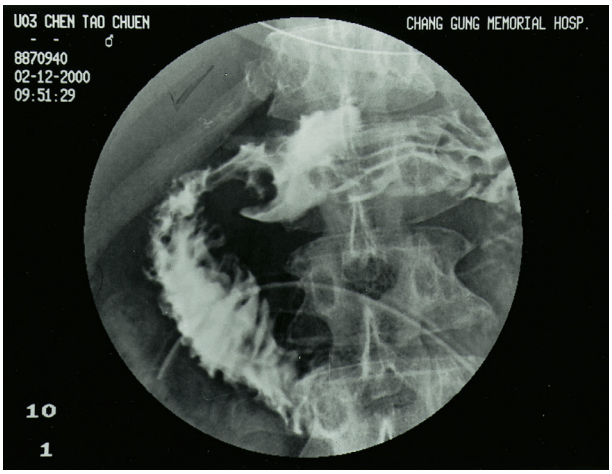

Fig. 4 Upper gastrointestinal series showing an intramural mass with a mucosal ulcer at the distal antrum.

Subsequently, a second laparotomy was performed. A firm 2 cm mass was found at the distal antrum, on the posterior wall with lesser curvature. A subtotal gastrectomy with Billroth II anastomosis was performed. The postoperative course was smooth, and the patient could again tolerate nasogastric tube feeding. The pathology revealed an ectopic pancreas in the muscular wall of the distal antrum.

DISCUSSION

Ectopic pancreas is relatively rare and is defined as pancreatic tissue that is abnormally situated, has no contact with the normal pancreas, and possesses its own ductal system and blood supply.[1] The incidence of ectopic pancreas varies. It is usually found at autopsy or as an incidental finding at laparotomy. Its incidence in autopsy series varies from 0.6% to as high as 13.7%.[2] Laparotomy series report a 1 in 500 incidence.[3] The distribution of ectopic pancreas tissue varies throughout the gastrointestinal tract. In 90% of patients, the ectopic pancreas is encountered in the stomach, duodenum, or jejunum.[2] The most-common site is the stomach, accounting for 25%-38.2% of all ectopic pancreas patients.[4] Kilman and Berk reported 20 cases of ectopic pancreas in the stomach, 65% of which were found in the antrum, 30% in the pylorus, and 5% in the pyloric channel.[5] No one had symptoms or signs of gastric outlet obstruction in that report. Unusual sites for an ectopic pancreas include Meckel's diverticulum, gall bladder, umbilicus, mediastinum, fallopian tube, esophagus, lung, common bile duct, cystic duct, ampulla of Vater, spleen, mesentery, omentum, and lymph node.[3,4,6,7]

Most patients with an ectopic pancreas are asymptomatic,[8] and if present, symptoms are nonspecific according to the site of the lesion and different complications encountered. Reported symptoms include abdominal pain (45.5%), epigastric discomfort (12.0%), nausea and vomiting (9.6%), bleeding (8.0%), and others (24.5%).[4]

Most complications caused by an ectopic pancreas are due to mechanical obstruction, including intussusception and obstruction of the small bowel,[4,6,9] obstructive jaundice,[10] and pyloric obstruction.[2,3,6,11] Reports of gastric outlet obstruction are, however, focused on the neonatal period. Other complications include malignant transformation,[6,12] cyst formation,[4] acute inflammation,[13] abscess formation,[4] gastrointestinal bleeding,[2,12] and various islet cell tumors in the ectopic pancreas, including insulinoma-producing hypoglycemia, gastrinoma with Zollinger-Ellison syndrome, and growth hormone-secreting tumor with acromegaly.[4] Almost all of the changes which can occur in the pancreas itself may develop in an ectopic pancreas.

Diagnosis of an ectopic pancreas is difficult since most patients with an ectopic pancreas are asymptomatic or have nonspecific complaints. In our 2 cases, upper gastrointestinal series, esophagogastroduodenoscopy, and endoscopic ultrasonography provided good information on the prepyloric ectopic pancreas with gastric outlet obstruction. A contrast-enhanced computed tomographic scan may also help in diagnosis and provide information.[3,5]

To our knowledge, an ectopic pancreas is usually an incidental finding and asymptomatic. This condition may be better left untreated.[14] There is no surgical indication in such a situation. On the other hand, if any of the above-mentioned complications caused by an ectopic pancreas occur, removal becomes necessary. In our cases with gastric outlet obstruction, wide excision was not possible due to the locations being very near the pylorus. Subtotal gastrectomy with Billroth II reconstruction was ultimately performed. Proper diagnosis and treatment can yield a good outcome.

In conclusion, although an asymptomatic ectopic pancreas usually is of no clinical importance, extremely rare cases of an ectopic pancreas with gastric outlet obstruction are found. An ectopic pancreas must be considered in the differential diagnosis of gastric outlet obstruction.

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異位性胰臟併胃出口阻塞：二例報告及文獻回顧

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異位性胰臟的定義是在正常胰臟外的胰臟組織與胰臟不相連接，擁有自己的胰臟組織，胰管系統及血流供應。異位性胰臟在臨床上並不常見，通常是在開腹手術或解剖時意外發現。最常出現的地方是胃部，約佔所有異位胰臟的25%至38.2%。大部份的病人沒有症狀，意外診斷出來也不需要手術切除。然而異位性胰臟如同胰臟一般，幾乎所有在胰臟發生的病變也會在異位性胰臟發生。一旦造成症狀及併發症，手術切除異位性胰臟是必要的。我們報告兩例異位性胰臟的病例；第一個病例是41歲男性病人在幽門前部有一大於2.5公分之黏膜下腫瘤，第二個病例是53歲男性病人在遠端胃竇有一個2公分黏膜下腫瘤。兩者皆造成胃出口阻塞的症狀。手術方式爲施行次全胃切除。病人皆預後良好。病理報告皆爲異位性胰臟。文獻回顧異位性胰臟造成胃出口阻塞的病例很少見，然而在胃出口阻塞的病人手術切除異位性胰臟是必要的。我們報告兩例異位性胰臟的病例；第一個病例是異位性胰臟仍需列入鑑別診斷。
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關鍵字：異位性胰臟，胃出口阻塞。

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