

A rare case of heterotopic pancreas in the stomach which caused closed perforation

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ABSTRACT

Heterotopic pancreas is the presence of an abnormally located focus of normally developed pancreatic tissue outside the boundaries of the orthotopic pancreas, without anatomical or vascular connections. Heterotopic pancreas is usually found incidentally and is generally asymptomatic. However, the lesion can become symptomatic depending on the size, location and the pathological changes. We present the case of a 19-year-old female patient with a perforated heterotopic pancreas of the gastric antrum. There have been no reports describing perforated gastric heterotopic pancreas and it should always be considered in the differential diagnosis of gastric masses and acute abdomen.

KEYWORDS

Heterotopic pancreas, stomach, perforation

INTRODUCTION

Heterotopic pancreas is the presence of an abnormally located focus of normally developed pancreatic tissue outside the boundaries of the orthotopic pancreas, without anatomical or vascular connections. The most common locations of heterotopic pancreas is the proximal gastrointestinal tract (70 to 90% of these lesions are detected in the stomach, duodenum and jejunum) but it may also be found anywhere in the gastrointestinal tract, pelvis and in the thorax.^{1,2} Heterotopic pancreas is usually found incidentally and is generally asymptomatic. However, the lesion can become symptomatic depending on the size, location and the pathological changes. Gastric and duodenal obstruction, gastrointestinal bleeding due

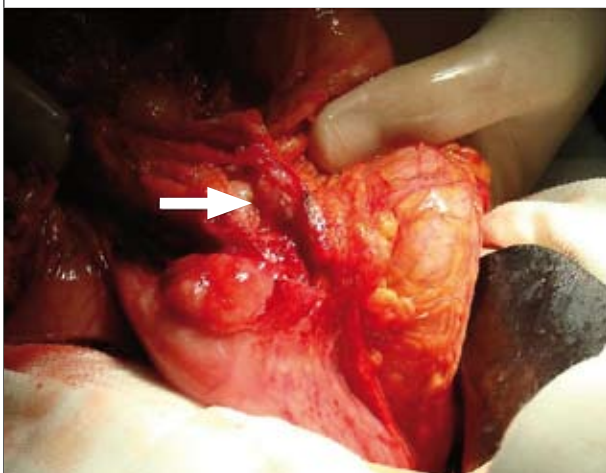
to ulceration, dyspeptic symptoms, acute and chronic pancreatitis, malignant change and cyst formation have also been reported due to heterotopic pancreas.³

We present the case of a 19-year-old female patient with a perforated heterotopic pancreas of gastric antrum. To the best of our knowledge, our patient has a very rare form of heterotopic pancreas not previously described.

CASE REPORT

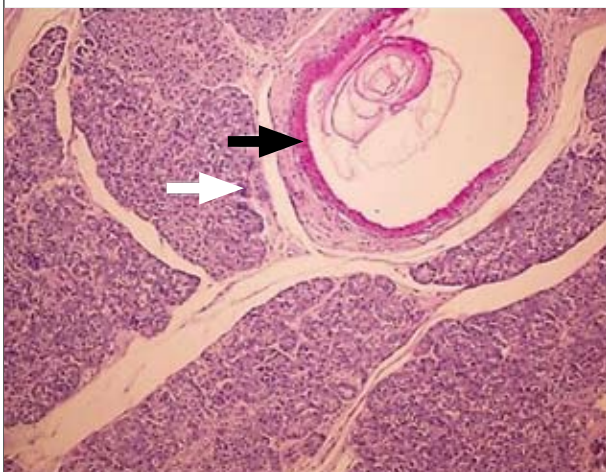
A 19-year-old woman was admitted to our hospital complaining of worsening epigastric pain, nausea and vomiting for two days. Her past medical history was unremarkable and she had no history of systemic disease, trauma or abdominal symptoms. On physical examination, there was tenderness and defence in the epigastric area. Vital signs were as follows: temperature 38.2°C, heart rate 118 beats/min, respiratory rate 22 breaths/min and blood pressure 95/45 mmHg. Plain chest and abdominal X-rays were unremarkable. Laboratory testing, including amylase at admission, were normal except for a leucocyte count of 13,200/mm³ (89% polymorphonuclear) and C-reactive protein (CRP) 48 mg/dl. Abdominal ultrasonography revealed asymmetrically thickened gastric wall and an irregular, hypoechoic solid lesion of 32 x 25 mm with minimal free intra-abdominal fluid. Computed tomography was not performed and a decision was made to proceed with surgery with the clinical impression of perforated gastric ulcer or gastric cancer. On exploration through the midline excision, a yellow-coloured, centrally perforated mass about 3 x 3 cm in the gastric antrum, which was covered with omentum, was present (*figure 1*). Upon gastrotomy, intact gastric mucosa was seen and the mass was located intra-murally. No lymphadenopathy was noted and the other observations of the abdominal explorations were within normal limits. Distal gastrectomy

Figure 1. Centrally perforated mass about 3 x 3 cm in the gastric antrum which was covered with omentum (arrow)



and gastroduodenostomy was carried out under the clinical impression of gastrointestinal stromal tumour. The postoperative course was uneventful and she was discharged five days after operation. Macroscopically, the tumour measured 3,5 x 3 cm, was yellowish-white in colour, hard with an irregular margin and located intramurally. The cut surface was composed of greyish-brown necrotic tissue with a wide area of ulceration and perforation hole about 1 cm in diameter. Microscopic examination showed intramurally located dilated pancreatic ducts and acini and pyogenic inflammatory granulation tissue containing intense polymorphonuclear and mononuclear cell infiltration and wide ulceration. The overlying mucosa was intact and the diagnosis was gastric heterotopic pancreas without any evidence of malignancy or stromal tumour (figure 2).

Figure 2. Histological examination of the resected specimen demonstrated pancreatic tissue with acinar cells (white arrow) and duct cells (black arrow)



DISCUSSION

First described in 1729, heterotopic or ectopic pancreas is considered to be the most common congenital anomaly of the pancreas after divisum. The prevalence at autopsy has been reported to be between 0.55 and 13.7 %, and at laparotomy 0.2%.⁴ Heterotopia can occur within any portion of the digestive tract having a propensity to be found in stomach and upper intestine as well as common bile duct, gallbladder, umbilicus, spleen and even within the fallopian tubes.^{1,2} The aetiology of heterotopic pancreas is unknown. There are some theories involved in the aetiopathogenesis including separation of pancreatic tissue during embryonic rotation of the dorsal and the ventral pancreatic ducts and misplacement of buds of embryonic tissue as they penetrate into the bowel wall.⁵

The Heinrich classification system is frequently used to classify heterotopic pancreas: type 1 (contains acini, islets and duct), type 2 (acini and ducts, no islets) and type 3 (ducts alone). The present case belongs to the type 2 showing dilated pancreatic ducts and acini.⁶

Gastric heterotopic pancreas is located in the antrum in 85 to 95% of the cases and the involvement of the submucosal, muscularis and subserosal layer is 73, 17 and 10%, respectively. It is usually solitary, measuring 3 cm or less in diameter, although gastric lesions tend to be larger.⁷ Because the findings on imaging studies (ultrasonography, endoscopic ultrasonography and computed tomography) are not specific for heterotopic pancreas, its preoperative definitive diagnosis is difficult. The definitive diagnosis of heterotopic pancreas is reached on histopathological examination. The endoscopic appearance is usually a small, centrally umbilicated, submucosal mass and the surface biopsies are usually normal because of the frequent submucosal localisation of the lesion.⁸ Heterotopic pancreas is usually asymptomatic and found incidentally, but may become clinically evident depending on the size, location and the pathological changes. Although the real reason for perforation in our case is speculative, it was considered that necrotising inflammation in the heterotopic pancreas tissue resulted in ulceration and then perforation at the serosal site of gastric antrum.

CONCLUSION

To date, there have been no reports describing perforated heterotopic pancreas of the stomach. Therefore, the present case was considered to be a very rare case of this disorder. Heterotopic pancreas should always be considered in the differential diagnosis of gastric masses and acute abdomen.

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