J Hong Kong Col Radiol. 2010;13:73-5

CASE REPORT

Heterotopic Pancreas in the Jejunum

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ABSTRACT

Heterotopic pancreas is the presence of pancreatic tissue outside the normal location lacking ductal or vascular continuity with the main gland. There are case series describing the computed tomographic appearance of heterotopic pancreas in the stomach. Pancreatic heterotopia in the jejunum is rare. To the best of our knowledge, there is only one report on the computed tomographic appearance of heterotopic pancreas in the jejunum. We present the computed tomographic appearance of another such case.

Key Words: *Choristoma; Intestine, small; Jejunum; Pancreas; Tomography, X-ray computed*

中文摘要

在空腸位置的異位胰腺

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胰腺異位是指胰腺組織出現在正常位置以外的部位，並且與主腺沒有腺管或血管相聯。電腦斷層成像顯示在胃部出現異位胰腺已有病例報導，然而在空腸出現異位胰腺卻很罕見。據作者所知，迄今只有一宗電腦斷層成像顯示在空腸出現異位胰腺的病例報告。本文報告另一宗空腸中段位置異位胰腺的病例。

CASE REPORT

On postoperative day 3 following laparoscopic appendectomy for acute appendicitis, a 36-year-old man complained of abdominal pain and vomiting for 1 day in September 2009. Initially the pain was in the periumbilical region but soon migrated to the right lower quadrant. On blood investigations, his white blood cell count was elevated to 19 x 10^9 /l (reference range, 4.5-11 x 10^9 /l) and the serum amylase level was slightly high (180 U/l) [reference range, 25-85 U/l]. Urgent computed tomography (CT) of the abdomen and pelvis indicated intestinal obstruction due to fibrous bands from previous surgery. The cut-off point was at the ileo-caecal junction. Further evaluation of the small bowel showed a 16-mm moderately enhancing broad-based nodular submucosal lesion in the dilated mid jejunal loop (Figure 1). Pooling of fluid in the dilated bowel loops made the lesion more distinct. An avid homogeneous bright enhancement was noted similar to the enhancement encountered with orthotopic (normally located) pancreas. The differential diagnosis included small bowel gastrointestinal stromal tumour, incidental primary jejunal neoplasm, and heterotopic pancreas. The patient underwent an emergency operation with adhesiolysis for intestinal obstruction. Targeted resection of the segment of mid jejunal bowel loop bearing the incidental tumour was performed. The postoperative period was uneventful.

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Submitted: 4 Jan 2010; Accepted: 2 Feb 2010.

Cross-section of the specimen showed a well-circumscribed nodule with a light-yellowish soft cut surface (Figure 2). The nodule was confined to the submucosa and measured 1.2 cm in length, 1.5 cm across, and 0.7 cm in thickness. On microscopic examination, there were well-circumscribed lobules of pancreatic acini intermingled with fibrous stroma, which are features compatible with pancreatic heterotopia.

DISCUSSION

Heterotopic pancreas is a congenital anomaly defined as pancreatic tissue that has no contact with the orthotopic pancreas and has its own duct system and vascular supply.[1] The term was first used by deCastro et al[2] and its reported point prevalence ranged from 0.55 to 13.7%.[3] This anomaly has been reported to occur in several locations in the abdomen and mediastinum, mostly in the stomach, duodenum, and the upper part of the jejunum.[4,5] Heterotopic pancreatic tissue, on occasion, has been found in the ileum, colon, spleen, liver, biliary tract, omentum, mesentery, and mediastinum.[3,6] The lesions are usually small, ranging from a few millimetres to a few centimetres in diameter, asymptomatic, and incidentally discovered at laparotomy or autopsy.[3,7] The majority have been described as a round or lobulated mass, most commonly in the submucosa, but can manifest as a subserosal nodule.[3,6,7]

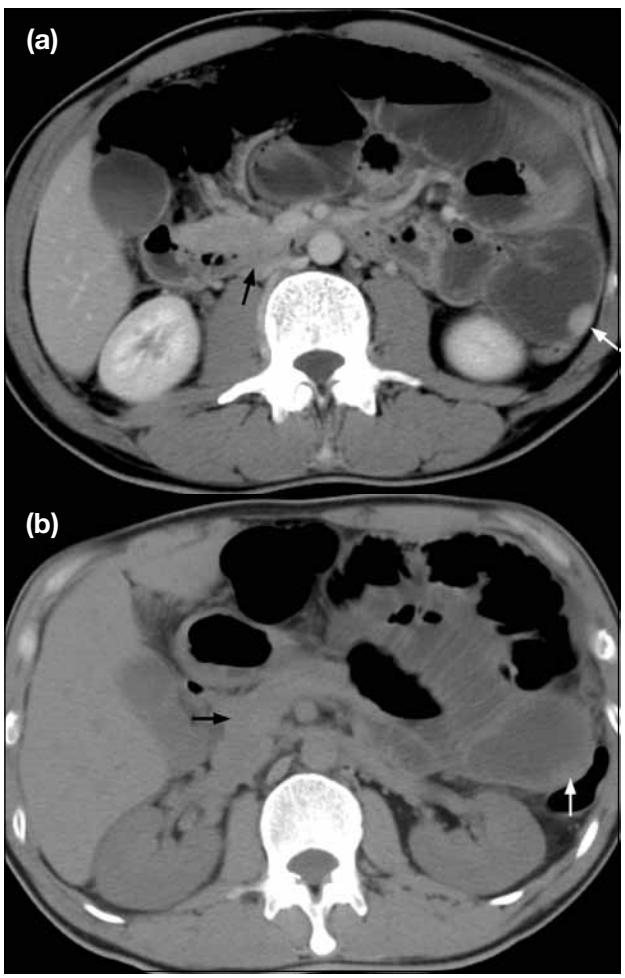

Figure 1. A 36-year-old man operated for acute appendicitis presented with abdominal pain and vomiting on his postoperative day 3. (a) Contrast-enhanced axial computed tomographic (CT) image of the abdomen shows an enhancing submucosal nodule in the mid jejunum (white arrow); the normal pancreatic head (black arrow) is shown. (b) Similarly, axial non-contrast CT shows the similar density subtle nodule in the proximal jejunum (white arrow); the pancreatic head is shown (black arrow). Also note the fluid-filled dilated small bowel loops consistent with small bowel obstruction.

The pancreas is derived from several endodermal invaginations of the primitive duodenal wall. The dorsal diverticulum becomes the body and tail, and the ventral portion becomes the head of the pancreas. Several theories have been proposed to explain the occurrence of heterotopic pancreatic tissue.[3,8] The most widely accepted theory is that one or more of the aforementioned invaginations remain within the bowel wall and become incorporated in the upper gastrointestinal tract. Heterotopic pancreas is well differentiated and histologically it can be indistinguishable from orthotopic pancreas,[3] and can be subject to the same pathological changes. Despite its congenital origin, heterotopic pancreas manifest clinically in older adults, often in the 6th decade of

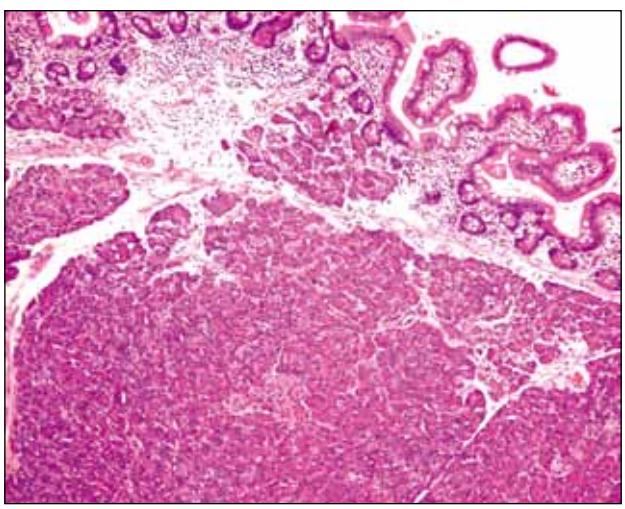

Figure 2. Histology shows a higher power view of the small intestinal mucosa and the details of benign pancreatic exocrine acinar tissue (typical of pancreatic heterotopia) [haematoxylin and eosin stain; original magnification, x 100].

life. The clinical significance of heterotopic pancreatic tissue is uncertain. Further management depends on the patient's presentation. Incidentally detected lesions can be observed clinically. Such lesions may produce symptoms, depending on their location, size, and involvement of the overlying mucosa. Although serious complications (pancreatitis, small bowel obstruction, massive gastrointestinal bleeding, and malignant transformation) have been reported, heterotopic pancreatic tissue is usually an incidental finding.[3,6]

The largest series of 16 cases described the CT appearance of gastric heterotopia and, as in our case, reported bright enhancement similar to that of an orthotopic pancreas.[6,9,10] Reduced enhancement may be encountered with inflammation. The only report of jejunal heterotopic pancreas by Sandrasegaran et al[11] described an exophytic, bright, and homogeneously enhancing jejunal mass with surrounding inflammatory changes in a clinical setting compatible with acute pancreatitis. We report another case of jejunal pancreatic tissue presenting as an incidental submucosal mass with imaging features resembling to those reported in gastric heterotopias.

Thus, pancreatic heterotopia should be considered part of the differential diagnosis of an incidental enhancing nodule in the jejunum, particularly when the enhancement pattern is identical to that of the pancreas.

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