alpha-1-antitrypsin and neuron specific enolase. This diversity of immuno-staining emphasizes its exocrine and endocrine differentiation.[5]

Surgical management has been tailored to the slow-growing, non-invasive nature of this tumour. Depending on the location of the PCSTP, the surgical option is chosen. Size of the tumor does not decide the resectability. With tumour involvement of the head of pancreas, a pylorus-preserving pancreaticoduodenectomy is recommended. PCSTPs involving the neck or body of the pancreas are resected by central pancreatectomy and reimplantation of the pancreatic remnant into the stomach, with theoretical benefit of preserving pancreatic parenchyma and spleen.[7] When the tumour was located at the pancreatic tail, tail and body, or body of pancreas, distal pancreatectomy with splenectomy was employed in many cases.[8] But the presence of the spleen may have a favorable effect on recurrence control and survival. The hypothesis that the spleen suppresses tumor growth from minimal residual disease in the critical early postsurgical period and reduces the risk of recurrent disease was tested. Now many authors recommend spleen conservation following distal pancreatectomy whenever possible.[7,9]

Laparoscopic pancreatic resection can be applied for small tumor. Baker et al[10] and Nakamura et al[11] studied 27 and 21 patients, respectively, who underwent laparoscopic distal pancreatectomies. They concluded that the procedure is a safe, effective modality for managing neoplasms of the pancreatic body and tail, providing a morbidity rate comparable to that of the open procedure and a substantially shorter length of stay.

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Asymptomatic heterotopic pancreas in the mesentery

Introduction

Heterotopic pancreas (HP) is an uncommon entity. It is usually detected incidentally and may or may not be associated with complications related to the pathologic conditions of the pancreas itself but may present with complications like inflammation, bleeding, obstruction or malignant transformation.[1,2] HP in the mesentery of the small intestine is very rare. A brief review of the HP is discussed along with the case.

Case Report

A 19-year-old male presented with pain abdomen, fever and easy fatigability since one month. He had history of rheumatic heart disease with mitral and aortic regurgitation. The physical examination showed shifting dullness suggestive of free fluid in abdomen. The abdomen was soft and non-tender with no palpable mass and normal bowel sounds. Stools test was negative for occult blood. Hematologic examination and blood biochemical findings were normal as well except mildly deranged liver function. Ultrasonography revealed hepatosplenomegaly, bilateral medical renal disease, pleural and pericardial effusion. Contrast enhanced computed tomography (CECT) performed revealed similar findings and in addition showed the soft tissue in the small bowel mesentery which was distinctly separate from the pancreas proper, and showing homogeneous enhancement similar to pancreas without evidence of necrosis suggestive of HP (**Figure 1**). For exact confirmation of nature of lesion detected on CT, MRI was performed on 3Tesla MR system (Magnetom Verio, Siemens Medical Systems, Erlangen, Germany) with a phased-array body coil.T1-weighted imaging with and without fat suppression, and fat suppressed T2-weighted axial images revealed lobulated homogenous lesion in the mesentery with signal character similar to pancreas on all sequences (**Figure 2**).

Discussion

Heterotopic (ectopic, aberrant, accessory rest) pancreas is defined as the presence of pancreatic tissue, outside its usual location without any anatomical and vascular continuity with the normal pancreas proper.[1,2] It has a genetic make-up, physiologic function, and local environmental exposure similar to that of the pancreas. Heterotopic pancreatic tissue is often found incidentally in patients operated on for other reasons or during autopsies. Its frequency has been estimated as 1 case per 500 explorations of the upper abdomen or 0.6- 13.7% of autopsies.[3,4] It can present at any age but most commonly encountered in the 4th to 6th decades, and has a male preponderance.[1,2] The most frequent location of HP is the

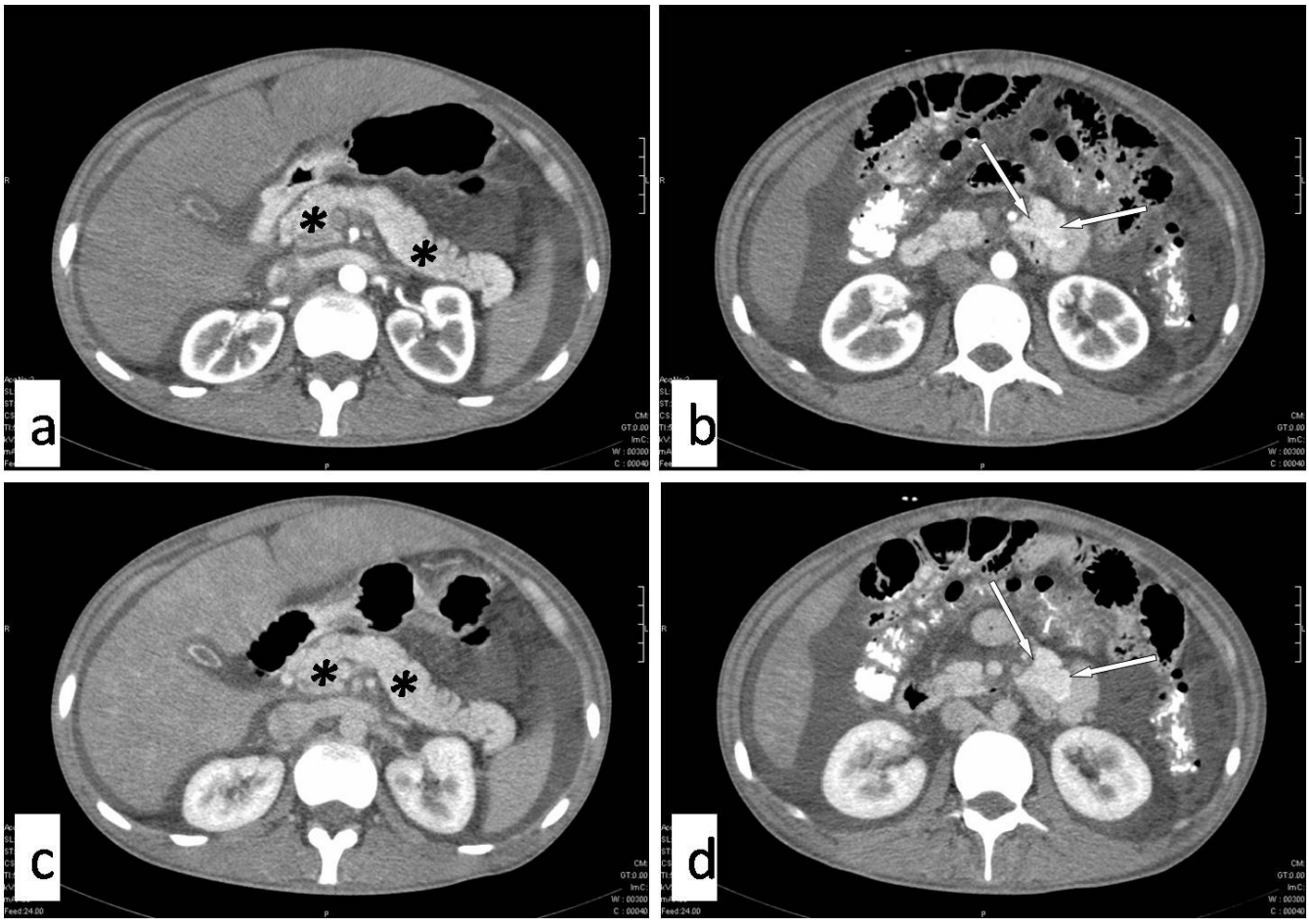

Figure 1 Biphasic contrast enhanced CT axial images in arterial (a and b) and venous phase (c and d) showing homogenously enhancing soft tissue in the mesentery (white arrows) having attenuation and enhancing pattern similar to pancreas (asterix).

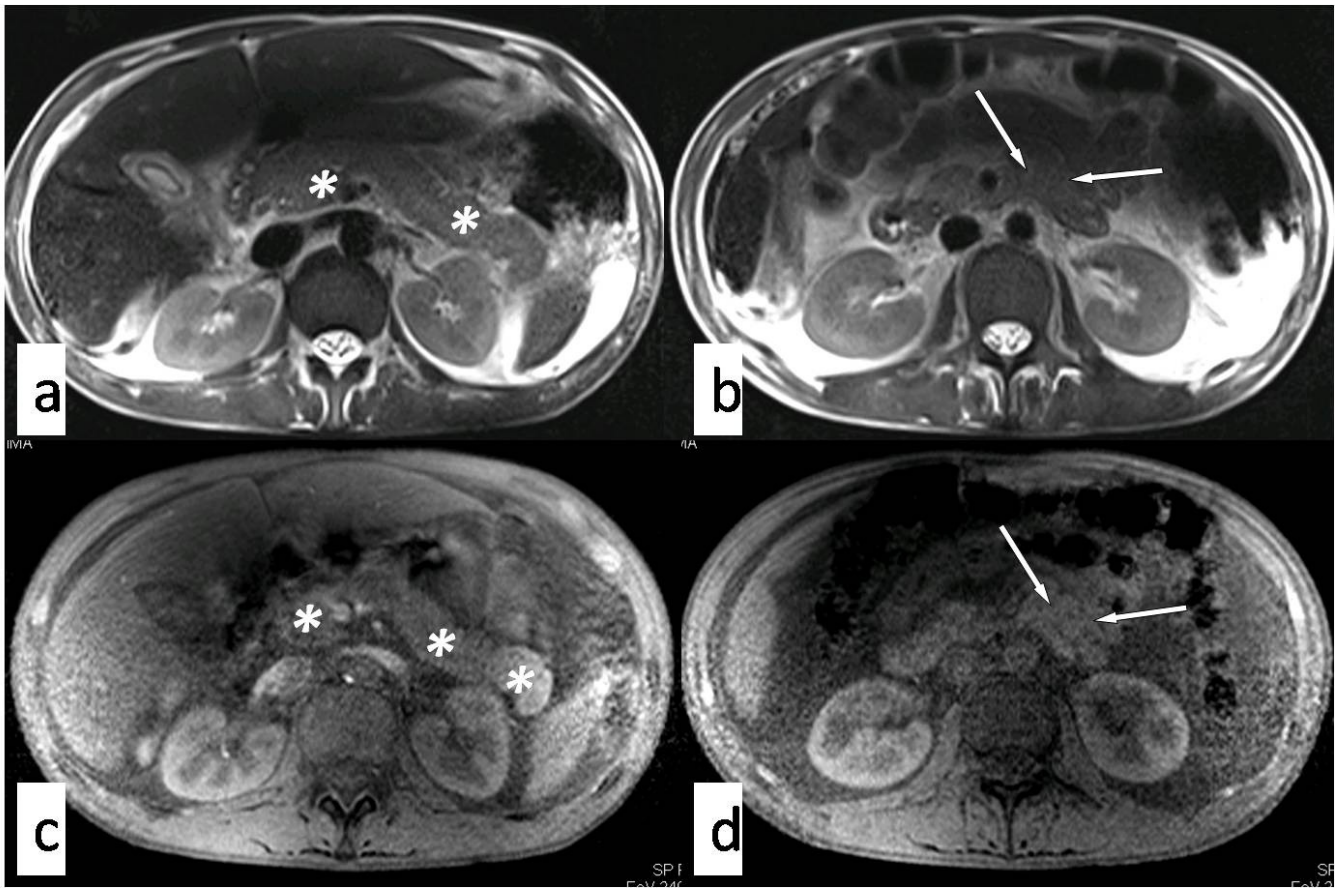

Figure 2 T2-weighted (a and b) and T1-weighted fat-saturated (c and d) axial MR images showing soft tissue lesion in the mesentery (white arrows) having signal character similar to the pancreas (asterix).

stomach (47%), followed by jejunum (35%), duodenum (11.7%) and ileum (5.8%).[3-6] The histological layers involved are, in descending order of frequency, the submucosa, muscularis propria, and serosa.[6] Other locations include the gallbladder, bile ducts, splenic hilum, umbilicus, fallopian tubes, mediastinum, esophagus, lymph nodes, omentum and meckel's diverticulum.[6] The mesenteric location of HP is rare and there are only a few reported cases of HP in the mesentery of the small intestine.[6] The differential diagnosis of HP includes gastrointestinal stromal tumor, gastrointestinal autonomic nerve tumor , carcinoid, lymphoma, or even adenocarcinoma.

HP is the second most common pancreatic congenital anomaly after divisum. It is postulated that early in fetal life, during rotation of the foregut and fusion of the dorsal and ventral parts of the pancreas, small parts are separated from it, and continue to develop in the wrong location. Histologically, the aberrant pancreatic tissue may contain all elements of normal pancreatic tissue such as acini, ducts and islet cells. The most characteristic gross feature is a central ductal orifice. Only about one-third of the patients with HP are symptomatic; frequent symptoms and signs are epigastric pain, abdominal fullness, tarry stools, vomiting, and diarrhea. Symptoms depend upon the anatomical location and its mass effect, such as gastric outlet obstruction in a pre-pyloric rest or obstructive jaundice in a bile duct focus and are also related to the size of the lesion. Lesions greater than 1.5cm in diameter are more likely to cause symptoms. Complications related to the pancreas may be inflammation, cyst or pseudocyst formation, abnormal hormone secretion and malignant degeneration. In addition, complications unrelated to the pancreas may be gastric outlet, intestinal or common bile duct obstruction, intussusceptions or bleeding. Mesenteric heterotopic pancreatitis is a rare cause of acute abdominal pain.[6]

Different imaging modalities can be used to detect HP. Abdominal USG may be normal or show a cystic or heterogeneous mass in different parts of the abdomen.[7] In our case USG evaluation was limited for HP due to obscuration by bowel gases. The classic finding on radiographic barium study or at endoscopic examination is a submucosal mass with central umbilication.[6] CT findings are usually non specific. However, multi-detector CT with oral and intravenous contrast may demonstrate the lesion which enhances similarly with the

normal pancreatic tissue as seen in our case. The appearance and enhancement pattern of HP on CT scans have been reported to be unreliable in differentiating the condition from gastrointestinal stromal tumor or carcinoid tumor. Visualization of the duct with MRCP was diagnostic of HP, obviating histologic confirmation in cases previously described.[6] In our case duct was poorely visualised due to non dilatation and absence of any pathology affecting it.

The combination of endoscopic ultrasonography with fine-needle aspiration cytology has been used for evaluation of submucosal gastrointestinal lesions. Preoperative biopsy may not help in the diagnosis of HP, and except for a few cases, definitive diagnosis of HP was not established preoperatively even in the symptomatic patients. Both conservative treatment and follow-up or removal of HP to prevent future complications is the recommended treatment options. Resection of the ectopic rest is advisable when the condition is encountered coincidentally during the operation.

In conclusion, HP in mesentery is extremely rare and imaging diagnosis of this condition is hardly described previously especially in asymptomatic patients. Signs and symptoms of the disease may cause confusion in the clinical diagnosis, if the pathologic conditions develop in the heterotopic tissue. However, the characteristic imaging features of HP may help in establishing the diagnosis.

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Congenital esophagobronchial fistula in an adult

Introduction

Persistence of congenital esophagobronchial fistulae into adulthood is rare.[1] They usually present in infants and may occur with or without esophageal atresia.[2]

Case report

A 20 yr old female presented with history of recurrent respiratory infection from the age of 13 years. At presentation, she had history of prolonged cough soon after food intake which was more with liquid food for the last 3 years. There was no past history of any surgery, trauma, tuberculosis or any other major illness. On examination, she was moderately built and poorly nourished. Respiratory system examination revealed coarse crepitations in the right lower lobe areas. Routine blood investigations were normal. Esophagogastroduodenoscopy showed a opening in the esophagus 30 cm from the incisor tooth (**Figure 1a**). Barium swallow showed spill over of barium from the esophagus into the right lower bronchus (**Figure 1b**). CT scan showed communication between esophagus and right lower bronchus and destruction of the right lower lobe with bronchiectatic changes. Bronchoscopy showed right posterior basal segmental orifice located more anteriorly with plenty of secretions. During surgery a fistulous communication between the esophagus and the bronchus (**Figure 2a**) noted. Fistula along with the right lower lobe was resected. Resected specimen (**Figure 2b**) was sent for histopathological analysis. The