CASE REPORT

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Coexistence of Pancreatic Carcinoma and Pancreatic Tuberculosis: Case Report

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Pancreatic tuberculosis (TB) is extremely rare and mimics pancreatic carcinoma both clinically and radiologically. This paper discusses the occurrence of 2 heterogeneous masses located in the head and tail of the pancreas in an adult male. In this patient, laparotomy was performed because of the high suspicion of pancreatic carcinoma. Intraoperative fine needle aspiration biopsy revealed the coexistence of pancreatic carcinoma with pancreatic TB, and a combined resection of the distal pancreas and spleen was successfully performed. Following surgery, the patient received standard chemotherapy for TB. At 7-month follow-up, computed tomography showed resolution of the mass in the pancreatic head. Clinicians must maintain a high index of suspicion for pancreatic TB in patients with pancreatic masses. The coexistence of malignancy and TB should be considered when patients present with multiple pancreatic masses. **(Gut Liver 2011;5:536-538)**

Key Words: Fine needle aspiration biopsy; Laparotomy; Pancreatic carcinoma; Pancreatic mass; Pancreatic tuberculosis

INTRODUCTION

The incidence of tuberculosis (TB) has significantly increased worldwide. Extrapulmonary TB most commonly affects the intestines, peritoneum, meninges, urogenital system, bone, and lymph nodes; rarely is it found in the pancreas.[1] Based on the clinical manifestations and imaging studies, it can be difficult to differentiate pancreatic TB from pancreatic carcinoma. The coexistence of pancreatic carcinoma with pancreatic TB has not been reported previously in the database. This paper presents such a case of pancreatic carcinoma coexisting with pancreatic TB in an adult male patient.

CASE REPORT

A 34-year-old man was admitted to our hospital with a 1-month history of vague epigastric pain. His review of systems was otherwise unremarkable. He denied exposure to TB or a personal history of TB. On physical examination, epigastric tenderness was present, however no mass was palpated. Laboratory examination showed: hemoglobin 10.9 g/dL, platelet count 325×10^9/L, white blood cell count 8.68×10^9/L, aspartate aminotransferase 21 IU/L (normal, <46 IU/L), alanine aminotransferase 15 IU/L (normal, <55 IU/L), total bilirubin 5.1 μmol/L (normal, 5.0 to 28.0 μmol/L), direct bilirubin 1.6 μmol/L (normal, <8.8 μmol/L), and CA19-9 157.80 U/mL (normal, <22 U/mL). Human immunodeficiency virus (HIV) serology was negative. Chest X-ray was normal.

Abdominal contrast-enhanced spiral computed tomography (CT) showed a hypodense mass in the head of the pancreas

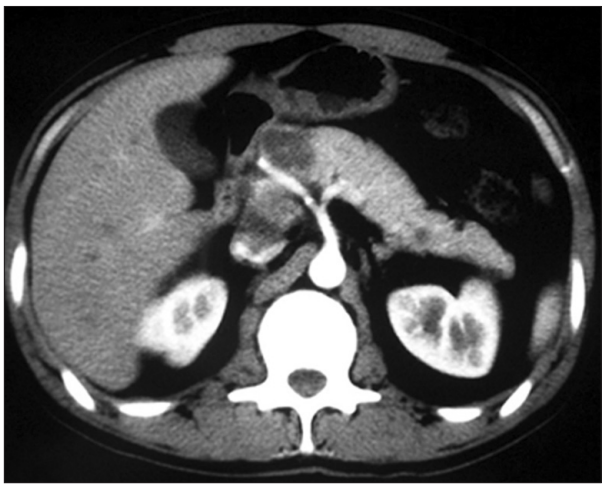

Fig. 1. A contrast-enhanced computed tomography scan shows 2 heterogeneous masses in the head and tail of the pancreas.

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and a second hypodense mass in the tail of the pancreas. Both masses exhibited peripheral enhancement. No evidence of dilation of the bile duct system or pancreatic duct was seen. The hepatic artery was encased by the pancreatic head mass and lymph nodes (Fig. 1). Based on the available data, an initial diagnosis of pancreatic carcinoma with intrapancreatic metastasis was made. A diagnosis of TB was considered, as it is endemic in China; however, supportive evidence was lacking. The patient presented with no personal or family history of TB, a normal chest X-ray, and none of the typical symptoms of TB. Subsequently, the patient and his relatives consented to laparotomy.

The operation revealed a firm mass in the head of the pancreas and another mass in the tail of the pancreas, measuring 4.0×3.8×3.5 cm and 1.2×1.0×1.0 cm, respectively. Enlarged lymph nodes were identified along the hepatic artery and hepatoduodenal ligament. Excisional biopsy of the lymph nodes and fine needle aspiration biopsy (FNAB) of the pancreatic masses were performed. Caseating granulomas with Langhans giant cells were found in the specimens from the lymph nodes and the mass in the pancreatic head, consistent with TB (Fig. 2). Adenocarcinoma was identified in the biopsy specimens taken from the mass in the pancreatic tail. Resection of the distal pancreas and spleen was then performed. Postoperatively, the histopathology on paraffin section confirmed the diagnosis of pancreatic carcinoma (Fig. 3) and TB. However, the acid-fast stain of the caseous material was negative, and the incisional margin, spleen, and a total of 7 lymph nodes were free of tumor. The pathology report indicated pathologic stage IA (T1N0M0) pancreatic carcinoma. The patient was treated with isoniazid, rifampicin, and ethambutol according to the protocol for standard TB chemotherapy. His family members refused anti-tumor chemotherapy. At the 7-month follow-up, the CT examination showed resolution of the mass in the pancreatic head (Fig. 4). There was no evidence of tumor recurrence or metastasis.

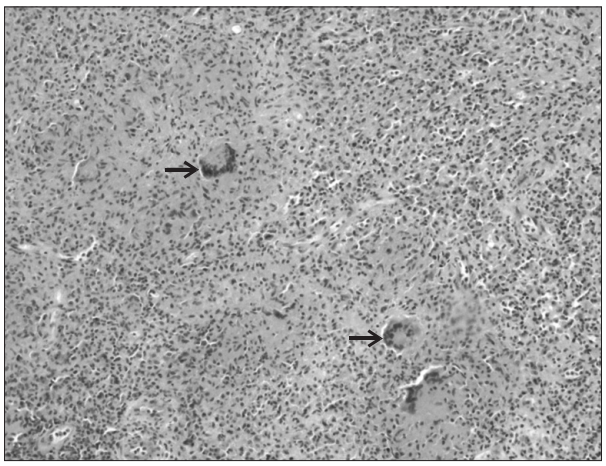

Fig. 2. Biopsy specimens from the mass of the pancreatic head shows caseating granulomas and Langerhans giant cells (arrow) (H&E stain, ×100).

DISCUSSION

TB is still a common disease in developing countries. With the high prevalence of HIV, it has also been resurgent in developed countries. Pancreatic TB remains a clinical rarity. In India, Bhansali[2] found no pancreatic TB in 300 patients with abdominal TB. Auerbach[3] reported on 1,656 autopsies with TB; among these cases, 297 (17.9%) had acute generalized TB, but only 14 (4.7%) had pancreatic involvement. Paraf *et al*.[4] identified only 11 (2.1%) cases with pancreatic or peripancreatic involvement in 526 miliary TB cases between 1891 and 1961.

The pathogenesis of pancreatic TB has been described: 1) lympho-hematogenous spread from an active focus; 2) direct invasion into adjacent celiac and retroperitoneal lymph nodes; 3) toxic allergic reaction of the pancreas in response to generalized TB.[5,6] The pancreas is biologically resistant to the infection of *Mycobacterium tuberculosis*. Intraparenchymal injection of *M. tuberculosis* can cause pancreatic lesions, only if abundant

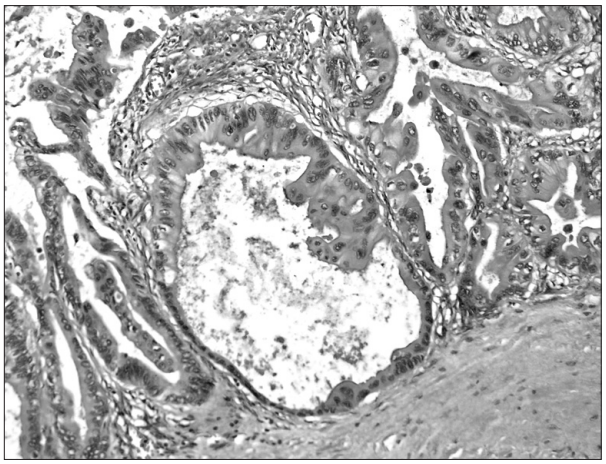

Fig. 3. This histological section demonstrates an appearance consistent with moderate differentiated adenocarcinoma (H&E stain, ×50).

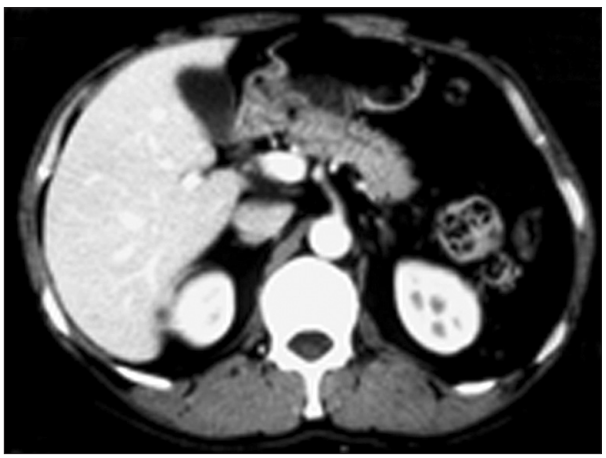

Fig. 4. Follow-up computed tomography scan 7 months later shows resolution of the mass in the pancreatic head.

inoculum is used. Furthermore, an antimycobacterial effect of pancreatic extracts, purified lipases, and deoxyribonucleases has been reported.[7]

The main clinical manifestations of pancreatic TB include epigastric pain (64%), fever (53%), weight loss (40%), and anorexia (36%).[8] Contrast-enhanced CT may demonstrate hypodense and/or multiloculated masses, diffuse enlargement of the pancreas, and stenosis of the pancreatic duct. These features are nonspecific and can resemble pancreatic carcinoma, pancreatitis, and lymphoma.[9]

The diagnosis of pancreatic TB should be considered when the following are observed: 1) young patients with a personal history of TB or exposure to TB; 2) patients with active TB; 3) congenital or acquired immune deficiency; 4) positive tuberculin test, elevated erythrocyte sedimentation rate, or abnormal serum globulin; 5) ultrasound and/or CT demonstration of focal hypoechoic or hypodense masses with ring enhancement or internal separation.

When pancreatic TB is suspected, ultrasound or CT-guided FNAB may help determine the diagnosis. Even if the initial microbiological results are negative, conventional techniques and polymerase chain reaction should be performed to avoid unnecessary laparotomy.[10] Once the diagnosis of pancreatic TB is confirmed, standard chemotherapy has been shown to have good curative effect.[11] Our hospital did not have the needle systems for FNAB; consequently, ultrasound and/or CT-guided FNAB was not undertaken preoperatively.

This case represents a rare presentation of a patient with multiple pancreatic masses. Gouya *et al*.[12] reported only 2 patients out of a group of 30 patients with insulinomas had more than one insulinoma. In 1998, Klein *et al*.[13] retrospectively analyzed 66 patients with metastases to the pancreas and identified multiple tumors in 11 patients. In our case, the definitive diagnosis was made by an intraoperative FNAB. The sensitivity, specificity, false-positive rate, and complication rate for intraoperative FNAB were 93%, 100%, 0%, and 0%, respectively.[14] The biopsy method can be an important tool utilized to avoid unnecessary resection, and to reduce the morbidity and mortality that accompany inappropriate surgical interventions.

In conclusion, pancreatic TB should be considered in the differential diagnosis of pancreatic masses, especially in areas where TB is prevalent. To avoid unnecessary laparotomy or resection, histopathological and microbiological evaluations should be performed, preferably before (or during) the operation. If multiple masses are present, biopsies must be taken from all the masses in order to direct subsequent therapy.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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