CASE REPORT

# Primary Pancreatic Tuberculosis: A Rare and Elusive Diagnosis

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## ABSTRACT

Primary pancreatic tuberculosis is an extremely rare entity, even in tuberculosis endemic areas. A 22-year-old male presented with features of obstructive jaundice. Ultrasonography and computed tomography scan showed mass in the pancreatic head for which he underwent a pancreatoduodenectomy. Histological examination of the specimen showed caseating granulomas. Antituberculous medicines were started and he remained well 18 months after surgery. Pancreatic tuberculosis is rare and is frequently confused with pancreatic cancer on clinical presentation as well as on imaging studies. A high index of suspicion is vital to avoid surgeries in this medically treatable, often misdiagnosed condition.

**Key words:** *Pancreas. Tuberculosis. Obstructive jaundice. Pancreatic head.*

## INTRODUCTION

Tuberculosis claims about two million lives each year worldwide.[1] In recent years developed countries too have seen a resurgence of this disease consequent to an increase in emigration from third world tuberculosis-endemic countries as well as subsequent to the AIDS epidemic and widespread use of immunosuppressant drugs.[2,3] Approximately 15% of tuberculosis cases involve extra pulmonary sites.[4]

Abdomen is the most common site of extra pulmonary tuberculosis, but involvement of pancreas is reported rarely even in tuberculosis endemic areas. Primary pancreatic tuberculosis (PPTB) in immunocompetent individuals is a rarity and often the diagnosis is made postoperatively due to low index of suspicion of this entity and masquerading of its symptoms as more common pancreatic conditions. Pancreatic tuberculosis commonly presents as mass lesion producing local compressive symptoms and mimic pancreatic malignancy, both clinically and radiologically.

We present a case of primary pancreatic tuberculosis in an immunocompetent individual from Pakistan presenting as obstructive jaundice with mass of pancreas initially misdiagnosed and surgically treated as pancreatic carcinoma.

## CASE REPORT

A 22 years old non-smoker male was referred from Sargodha to Surgical Department of Combined Military Hospital, Rawalpindi with sudden onset of severe, colicky, epigastric pain which was aggravated by taking meals and associated with anorexia. He did not have nausea, vomiting, pruritus or fever. His bowel habits were normal and he was passing normal coloured stools. There was no history of dyspepsia or tuberculosis or any past surgery. During his stay in hospital for investigations, he lost 4 kg weight in one month. He was mildly jaundiced but rest of the physical examination was unremarkable. His serum bilirubin was 158 μmol/l, ALT was 107 IU/l and ALP was 843 IU/l. Ultrasound abdomen revealed a dilated common bile duct (CBD) with normal intrahepatic biliary channels and a mass in the head of pancreas. Contrast enhanced CT-scan abdomen revealed a heterogeneously enhancing mass in the head of pancreas (Figure 1) measuring 6.6 x 4.7 x 4.3 cm which was pushing superior mesenteric vein (SMV) anteriorly. Pancreatic duct was normal and there was no evidence of abdominal lymphadenopathy. CT-portography and abdominal aortography show normal portogram and encasement of inferior pancreatoduodenal artery by the mass. EUS guided FNAC revealed atypical cells suspicious of adenocarcinoma.

Pancreatoduodenectomy (Whipple's procedure) was carried out for diagnosis of adenocarcinoma of head of pancreas. Patient made an uneventful recovery

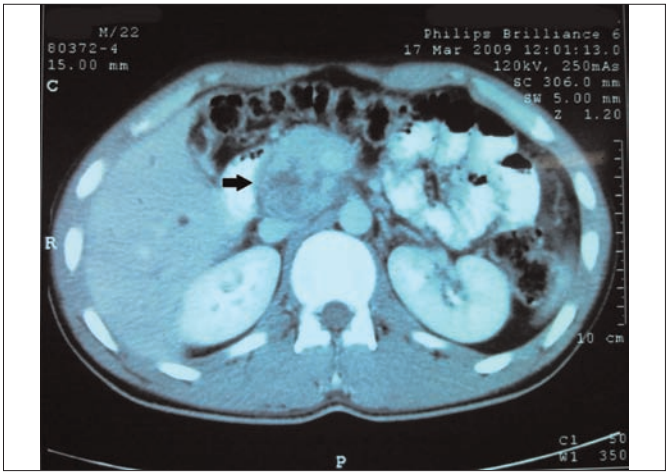


**Figure 1:** Contrast enhanced CT-scan abdomen showing irregularly enhancing mass in head of pancreas (black arrow).

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postoperatively. Histopathology of resected specimen showed chronic caseating granulomatous inflammation of pancreas and CBD along with dysplasia of pancreatic duct epithelium. This lead to workup for tuberculosis. His Mantoux test was 12 mm i.e. strongly positive and tuberculosis serology (TB complex-Pathozyme Myco) by ELISA was also positive. His chest X-ray was completely normal and he had no complaints of cough or night sweats. Thus, a diagnosis of primary pancreatic tuberculosis (PPTB) was made as his intestines were found normal at operation and there was no other evidence of abdominal tuberculosis. He was treated with four-drug anti-tuberculosis therapy (Rifampicin:600 mg, INH :300 mg, PZA:1500 mg, Ethambutol:1200 mg daily) for 12 months and is asymptomatic now.

## DISCUSSION

Upto 12% of patients infected with tuberculosis have involvement of abdominal organs including the liver, spleen, bowel, peritoneum and mesenteric lymph nodes, with the commonest site being the ileo-caecal area. Evidence of concomitant active pulmonary tuberculosis is found in only 6 – 38% of cases.[1,2,5]

Primary pancreatic tuberculosis (PPTB) is defined by an isolated involvement of pancreas by tuberculosis in the absence of previously identified tuberculosis and involvement of any other organ. Pancreatic involvement is rare even in tuberculosis endemic areas and is generally associated with miliary tuberculosis.[2] Retro-peritoneal location of pancreas and pancreatic enzymes including lipases and DNAses make pancreas relatively resistant to mycobacterial invasion.[1,6]

Pancreatic tuberculosis presents with a wide spectrum of symptoms such as abdominal pain, anorexia, weight loss and night sweat, fever, pancreatic abscess, massive gastro-intestinal bleeding, acute or chronic pancreatitis, secondary diabetes, splenic vein thrombosis, or a pancreatic mass causing obstructive jaundice and mimicking malignancy as in the present case.[2,7]

ERCP may show displacement and stenosis of the main pancreatic duct or involvement of the common bile duct. Ultrasonography and CT scan may show a diffusely enlarged pancreas, a mass lesion (as in this case), multicystic masses or focal hypo-echoic or hypo-dense lesions usually in the pancreatic head region. Due to these non-specific imaging findings, it is often confused with carcinoma of pancreas or periampullary carcinoma, which are more common causes of radiologically determined masses in this anatomical location.[2,6]

The diagnosis of pancreatic TB is a real challenge, partly because of rarity of the disease itself and partly due to its insidious presentation, mimicking pancreatic carcinoma like in the present case. A firm diagnosis can only be made with the help of histopathological or microbiological evidence of the disease. Techniques for biopsy include endoscopic US-guided biopsy, CT/US-guided percutaneous biopsy, and surgical biopsy (open or laparoscopic). Only 6 out of 73 cases reported by 2002 were diagnosed by FNA cytology/biopsy. This may be due to the fact that percutaneous FNA is usually performed for the suspicion of pancreatic cancer and the sample is not routinely sent for mycobacterial stain and culture.[1] The crucial microscopic features are those of caseating granulomatous inflammation as found in this case.[5] Acid-fast bacilli may also be found in 33 – 41% of cases.[4] Polymerase chain reaction (PCR) can yield more rapid results even if the initial microbiological results are negative, using conventional techniques.[5,8]

This patient fulfilled all the criteria except one for the diagnosis of primary pancreatic tuberculosis. He had no history of tuberculosis, the disease was localized, his chest radiograph was normal, he had no other detectable foci of tuberculosis and had a positive cytological diagnosis. However, acid fast bacilli could not be demonstrated and a culture of the pancreatic tissue was not performed.

Surgery is performed both as a diagnostic procedure during explorative laparotomies and for definitive treatment by excision of the tuberculoma, including pancreatoduodenectomy and distal pancreatectomy for suspicion of malignancy.[9] Following diagnosis, anti-tuberculous microbial therapy should be commenced. Initially, quadruple therapy is advised until sensitivities are available after which the regime can be rationalized. Treatment should be for a period of 6-12 months.[5,9] These patients still need to be followed up carefully for subjective and objective response to therapy to rule out the rare possibility of tuberculosis co-existing with malignancy, especially in endemic areas.[4]

Tuberculosis should be suspected in patients having a pancreatic mass, particularly if the patient is young, not jaundiced, coming from an area of high tuberculosis endemicity and having a normal ERCP. To avoid un-necessary laparotomy, CT/US guided percutaneous cytology/biopsy and culture of tissue for mycobacteria should be done in a patient with pancreatic mass. Its vague symptomatology, non-specific radiological findings and excellent medical treatment call for greater vigilance.

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