Disseminated Tuberculosis Masquerading as Metastatic Pancreatic Carcinoma

Satyajit Pawar¹, R Ragesh¹, Neeraj Nischal¹, Chandan J Das², Madhavi Tripathi³, SK Sharma¹

Abstract
Tuberculosis (TB) is highly prevalent in India, but TB of pancreas is rare. It is usually seen in patients with miliary TB and often in immunocompromised host as like in HIV positive patients. Pancreatic TB can present as pancreatic mass, pancreatic abscess or acute or chronic pancreatitis. Pancreatic involvement in tuberculosis can occur via haematological route by contiguity from the adjacent organs. In certain clinical settings, presence of pancreatic mass should alert clinicians regarding possibility of pancreatic TB, especially in endemic areas. With use of appropriate diagnostic tests and proper treatment it is potentially curable.

Introduction
Tuberculosis involving pancreas has been thought to be rare even in endemic settings. But with advancement in diagnostic techniques, there has been increase in number of cases reported. Presentation as pancreatic mass lesion with surgical jaundice usually leads physician to make a diagnosis as carcinoma of pancreas. Here we are discussing a case of disseminated tuberculosis which mimicked carcinoma pancreas with distant metastasis.

Case Report
A 38-yr-old male, resident of New Delhi, was referred to Medical Outpatient Department (OPD) of AIIMS, New Delhi, with a 2-year history of insidious onset gradually progressive jaundice. The patient had features suggestive of obstructive jaundice; which included pruritus, high coloured urine, pale stools and right upper hypochondriac pain. There was no history of fever, overt gastro-

intestinal bleed, vomiting or altered bowel habits. He had associated constitutional symptoms like loss of appetite and weight loss. During work up of this patient prior to presentation to us, a contrast enhanced CT (CECT) scan of chest and abdomen was done which showed a mass in the head, neck and uncinate process of pancreas with duodenal and distal common bile duct (CBD) infiltration with dilated intra-hepatic biliary radical dilatation (IHBR) and main pancreatic duct with portal vein encasement with mesenteric and para-aortic lymphadenopathy.

A detailed evaluation revealed no peripheral lymphadenopathy. Examinations of cardiovascular, respiratory and neurological system were normal. Abdominal examination showed mild epigastric tenderness, however, no mass was palpable. Fine needle aspiration cytology (FNAC) done from pancreatic mass was inconclusive. Empirically he was given one cycle of chemotherapy (Gemcitabine + Oxaliplatin). Repeat CECT chest, abdomen and pelvis (Figure 1) done three months after chemotherapy showed no change in size of primary pancreatic mass but there was appearance of focal liver lesion (?metastasis) suggestive of chemotherapy non-responsive progressive disease. The patient now developed focal sensory seizures of the right side of the body without generalisation. In view of this, the patient presented to us. CECT head (Figure 2) done in emergency room revealed a space occupying lesion in the left high parietal lobe (? metastatic lesion) and patient was started on anti-seizure medication.¹⁰ FDG-PET-CT (Figure 3) showed features suggestive of malignant pathology involving pancreas with metastasis to liver, lungs, brain, lymph nodes and omentum. Repeat FNAC was done from both the liver and the pancreatic mass. The sampling from the pancreatic mass was again inconclusive but FNAC from liver mass showed acid-fast bacilli (AFB) in the background of caseous necrosis with granulomas.

He was started on four drug anti-tuberculosis therapy (ATT). There was a significant symptomatic improvement and repeat CECT abdomen (Figure 4) revealed resolution of the pancreatic and...
Fig. 1: Pre-treatment axial CECT image (a) a hypodense mass in pancreatic head (thick arrow) leading to upstream pancreatic duct (thin arrow) dilatation (seen better in image b) along with large hypodense lesion (arrowhead) in right lobe of liver, (c) omental thickening (d) ascites (star).

Fig. 2: Pre-treatment CECT axial image of brain showing an enhancing lesion in left parietal lobe with perilesional edema suggesting metastasis.

Fig. 3: Pre-treatment 18FDG/CT fusion images showing intense FDG uptake in pancreatic head (thin arrow) and hepatic mass in right lobe (thick arrow) as well as in left lobe (arrow head).

Fig. 4: Post-treatment CECT axial image after treatment showing resolution of liver lesion with residual bulky pancreatic head (arrow).

hepatic lesions and contrast enhanced MRI of the brain (Figure 5) also showed complete resolution of parietal lobe lesion with only gliotic change remaining with subtle edema. FDG whole body PET-CT (Figure 6) done after four months after initiation of ATT showed decreased metabolic uptake in all described lesions in pancreas, liver and lungs with resolution of right axillary, left internal mammary, mediastinal, retroperitoneal and abdominal lymphadenopathy, suggesting a good partial response to therapy. The patient is currently doing fine.

Discussion

Tuberculosis is a multisystem infectious disease which is endemic in developing world. According to WHO annual report of 2014, incidence of TB is about 9 million per year with highest incidence of cases occurring in Asia and Africa. India contributes to about 24% of these cases. Though pulmonary TB is most common presentation of disease, 20% extra-pulmonary tuberculosis is seen in immunocompetent individual. The proportion may rise up to 50% in cases of HIV-TB coinfection.

Pancreatic involvement in TB is rare with worldwide reported incidence of 4.7% annually. First case of pancreatic TB mimicking pancreatic cancer was reported by Auerbach in 1944. There are reported incidences of extensive surgeries performed in view of suspicion of malignancy of pancreas which later turned out to be tuberculosis. Involvement of pancreas in TB is seen commonly in case of miliary or disseminated cases mainly in immunodeficient hosts. In our case the patient was immunocompetent. Pancreatic TB has higher incidence in younger persons, usually female with past history of TB or those residing in endemic area for TB.

Presentation of pancreatic TB is usually insidious with constitutional symptoms being predominant feature. In a study by Xia et al, abdominal pain (75%), anorexia (69%), weakness (64%), fever (50%) and jaundice (31%) were common symptoms. Radiological
features usually mimic that of pancreatic tumors. These similar features were seen in our case. While the presentation as pancreatic mass is seen in most of cases, our case had liver and brain lesions also hence it was erroneously labelled as carcinoma pancreas and diagnosis of TB was delayed. Pancreatic TB can also present as pancreatic abscess, acute or chronic pancreatitis, obstructive jaundice or portal vein thrombosis causing portal hypertension. Diagnostic techniques used to diagnose TB of pancreas can be invasive or non-invasive. Ultrasonography (USG) or computed tomography (CT) are often first-line diagnostic modalities. USG abdomen can show presence of focal hypoechoic or cystic lesion. On CT pancreatic involvement typically appears as an enhancing hypodense mass, with irregular borders along with omental and lymphnodal involvement. The findings are usually nonspecific, as cystadenocarcinomas, pancreatic adenocarcinomas and pancreatic pseudocysts have similar appearances. Since the early presentation of pancreatic TB mimics malignancy; histological and bacteriological evidence is ‘gold standard’ for diagnosis.

Current options for biopsy include percutaneous USG-guided or CT-guided biopsy, endoscopic ultrasound-guided biopsy, open surgical or laparoscopic biopsy. There is no difference between accuracy of these three techniques. Acid fast bacilli (AFB) from bile by using ERCP is another technique which can be used for diagnosis, but has low sensitivity. The American Joint Commission on Cancer has recommended use of EUS-FNA as a method of choice for diagnosis of pancreatic mass and has found it to be most specific and sensitive. Biopsy may reveal presence of granulomas with necrosis. AFB stain is usually negative in as many as 40% of cases. TB culture even though requires prolonged incubation, is the most specific method for confirming diagnosis.

Current RNTCP guidelines recommend 6 month ATT. But definite studies regarding exact duration of treatment are lacking. Follow-up can be done usually with the use of CECT abdomen to look for regression of pancreatic lesion. Currently with the advent of PET-CT fusion techniques treatment response to ATT can be documented objectively, which was done in our case. There can be complete regression of lesions with no uptake or reduced uptake. This can guide physicians in cases where prolonged therapy is needed rather than standard 6 month regime.

References