Pancreatic tuberculosis: A rare occurrence

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ABSTRACT

Pancreatic tuberculosis is a rare clinical entity and may present diagnostic difficulties. It can mimic carcinoma of the pancreas. However, it is a curable disease once the diagnosis is established. We report a case of pancreatic tuberculosis in which percutaneous Computerized Tomography guided biopsy confirmed the diagnosis. Patient recovered completely following a nine month course of anti-tuberculoses chemotherapy. Therefore, percutaneous computerized tomography guided biopsy of the pancreas can lead to precise diagnosis without the need for laparotomy.

Keywords: Pancreatic tuberculosis.


In Saudi Arabia where tuberculosis (TB) is still endemic, the frequency of extrapulmonary TB is increasing. Between 1964-1976, extrapulmonary TB has increased from 7.8% to 13.7% in USA. Abdominal TB is a common form of extrapulmonary TB. About 12% of patients infected with TB have abdominal involvement. The most common sites are the mesenteric lymph nodes, small bowel, peritoneum, liver and spleen. However, pancreatic involvement is rare even in association with miliary TB. Furthermore, focal pancreatic TB is even rarer. The pancreas is usually affected in patients who have previously suffered from TB.

We report a case of pancreatic TB mimicking malignancy. The diagnosis was established by percutaneous CT-guided biopsy with complete response to anti-tuberculosis chemotherapy.

Case report. A 30-year old male patient was referred to the Department of Surgery as a case of carcinoma of the head of the pancreas with three months history of progressive upper abdominal pain, nausea and vomiting. There were yellow discoloration of the eyes, dark urine, white stool and generalized pruritus. Patient lost 10kg during this period and his appetite was reduced. He denied any history of abdominal trauma. He gave a history of pulmonary tuberculosis 18 months prior to admission for which he was treated for 4 months. He is neither diabetic nor hypertensive. He is non-smoker and non-alcoholic. Examination was unremarkable, apart from deep jaundice and abdominal scratch marks.

Hematological and Biological investigations were within normal except high ESR (76mm/hour). Liver function tests were all elevated: Total Bilirubin 12.5 mg/dl; alkaline phosphatase 1965 u/L; serum albumin 2.8 g/dL; SGOT 95 u/L; SGPT 56 u/L and Gamma glutamyl transferase 149 u/L. Urinalysis was positive for bilirubin. Sputum and urine analysis were repeatedly negative for acid-fast alcohol-fast bacilli. Chest x-ray, ECG, PT & PTT were also within normal limits. Serology was positive for hepatitis B but negative for HIV. A tuberculin test with 5TU of PPD was negative. Carcino embryonic-antigen (CEA) and CA19-9 were normal. Ultrasound of abdomen showed an irregular hypoechoic mass 6cm in diameter in the head of the pancreas reaching the caudate lobe. The portal vein was displaced forward. The common bile duct (CBD) and the intrahepatic ducts were dilated. The gallbladder was slightly distended (Figure 1).

Contrast-enhanced CT-scan of abdomen confirmed a
mass in the head of the pancreas extending upward and laterally towards the porta hepatitis. It compressed the hepatic artery and inferior vena cava with mild dilatation of the intra and extrahepatic biliary tree and some distension of the gall bladder (Figure 2). An ERCP showed compression of the CBD. Nine days after admission the patient showed clinical and biochemical improvement. His jaundice became tinge and only itching disappeared. His bilirubin and alkaline phosphatase became low. A percutaneous CT-guided fine needle aspiration was performed and ten milliliter of greenish-yellow, non-offensive material was aspirated. Acid-fast, alcohol-fast bacilli and malignant cells couldn't be identified. Trucut (18G) biopsy was later carried out under CT-scan guidance. Histopathology revealed features compatible with caseating granuloma (Figure 3). Patient was started on anti-tuberculous chemotherapy: Rifampicin 600 mg, INH 300 mg, ethambutol 750 mg for two months, followed by Rifampicin 600 mg and INH 300 mg for the subsequent seven months. Vitamin B6 40 mg was given during the whole duration of therapy.

During follow-up, patient’s appetite improved, weight increased, ESR decreased and liver function tests returned to normal. Eight weeks culture of the specimen was positive for mycobacterium tuberculosis. CT-scan abdomen carried out after completion of chemotherapy showed complete regression of the pancreatic mass (Figure 4). Patient was followed-up for three years after completing the anti-tuberculous chemotherapy with no clinical, biochemical or radiological evidence of recurrence and remains well.

**Discussion.** Pancreatic tuberculosis is rare even in countries where TB is endemic. It occurs in 2.7% to 4.7% of autopsy studies of patients with miliary disease. It is most often associated with miliary tuberculosis or occurs in the immuno-compromised patients. In recent years there has been a resurgence of TB worldwide. The high-risk categories include immigrants, homeless and immunocompromised patients. The diagnosis needs a high index of suspicion. History of previous infection with TB is important and it could be the source of infection of other organs such as the pancreas as demonstrated in this case.

Out of 125 cases of extrapulmonary TB reviewed by Mokhtar and Salman, 22 were abdominal: affecting mesenteric lymph nodes, peritoneum, ileocaecal region and anal canal.

Yasawy et al reported 55 cases of abdominal TB.
There was no single case of pancreatic involvement. In a review of 300 patients with abdominal TB from India, Bhansali did not report a single case in which there was clinical involvement of the pancreas.

Pancreas becomes involved in miliary TB by the following routes: A toxic-allergic reaction to generalized TB (Concomitant pancreatitis); Direct extension from adjacent caseating lymph nodes; Hematogenous dissemination; Reactivation of old TB focus, particularly in immuno-suppressed patients, e.g. renal transplants and HIV patients.

The primary focus could be in the lungs, intestines or skin. The clinical presentations of pancreatic TB is legendarily variable. Patients may present with pancreatitis, obstructive jaundice, pancreatic abscess, GI bleeding, pancreatic insufficiency, pyrexia of unknown origin and others. Our patient presented with abdominal pain, nausea, vomiting, weight loss and obstructive jaundice. Most often the diagnosis is not suspected prior to laparotomy unless there is evidence of TB elsewhere, especially in the lungs.

A normal chest x-ray was reported in 50-80% of patients with abdominal TB. Ultrasound and CT-scan can clearly delineate the pancreatic lesion and whether coeliac and retroperitoneal lymphadenopathy is present, but they are non-specific. The CT scan of our patient clearly demonstrated a mass in the head of the pancreas with different densities and comparison on the duodenum, hepatic artery and inferior vena cava. These features are highly suggestive of a malignant neoplasm.

Pancreatic tissue can be obtained by fine needle aspiration, percutaneous biopsy or during laparotomy and laparoscopy or both.

An ultrasound or CT-guided biopsy is a favorable technique, thus avoiding unnecessary laparotomy. The diagnostic criteria for abdominal TB include a positive tuberculin test, presence of characteristic granuloma in tissue biopsy and demonstrating mycobacteria by staining and culture. Negative tuberculin test occurs in 70% of patients. In this case the tuberculin test and acid-fast, alcohol-fast bacilli staining were negative. Absence of organism does not rule out the diagnosis because negative result is frequent in abduma TB. However, culture of the biopsy demonstrated the organism after 8 weeks of incubation. The diagnosis was achieved by percutaneous CT-guided biopsy. This is in contrast with most reports where diagnosis of TB was established after exploratory laparotomy. Abdominal TB should be included in the differential diagnosis of many intraabdominal lesions including malignancy, Crohn's disease and lymphomas.

Since the patient had previous pulmonary TB, we can speculate that the pancreas could have been secondarily involved by lymphohematogenous route. It remains, however, unclear why the process of reactivation involved the pancreas.

The disappearance of jaundice during hospitalization and before starting treatment could be due to liquefaction within the pancreatic mass relieving the pressure on the CBD.

Tuberculosis is a treatable disease. The current anti-tuberculous chemotherapy is highly effective and curable. During treatment, patients should be closely monitored for hepatic dysfunctions.

In conclusion, pancreatic TB is exceedingly rare. It should be considered in the differential diagnosis of any pancreatic mass especially in endemic regions. Percutaneous CT-guided biopsy is a safe and reliable procedure that should be carried out for patients presenting with pancreatic lesions. The procedure has minimal morbidity with cosmetic advantages as compared to exploratory laparotomy.

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References