Pancreatic Tuberculosis: A case report

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ABSTRACT

Primary pancreatic tuberculosis is an extremely rare entity even in tuberculosis endemic areas. It usually presents with vague and nonspecific symptoms. It is often confused with pancreatic malignancy on clinical presentation as well as on imaging. In our case, a 67-year-old male presented with abdominal pain with constitutional symptoms-fever, anorexia and weight loss. Ultrasonography and computed tomography scan showed a mass in the pancreatic head. CT guided FNAC showed granulomatous inflammation with caseous necrotic material which is cytologically consistent with tuberculosis. Standard four-drug antituberculous medicines were started and the patient responded well clinically with radiological resolution of the lesion.

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INTRODUCTION

Tuberculosis is a common disease in developing countries but isolated involvement of the pancreas by tuberculosis is rare.[1] The exact prevalence of pancreatic tuberculosis can't be assessed. The 1st case of pancreatic tuberculosis was reported by Aurbach.[2] Pancreatic tuberculosis frequently poses diagnostic problems because of the vague and variable clinical features and often it mimics characteristics of pancreatic adenocarcinoma.[3] Pancreatic tuberculosis should be suspected when dealing with pancreatic mass with constitutional symptoms specially in people in developing countries. Diagnosis is usually made by radiological investigation and image guided intervention, which can prevent the need for diagnostic laparotomy.[4]

This paper presents a case of pancreatic tuberculosis in a 67 year old male patient manifesting irregular fever and constitutional symptoms.

The case

A 67 year old male presented with irregular high grade fever for 1.5 years associated with chills and rigor. The highest recorded temperature was 104^{0}F. He also complained of loss of appetite and significant weight loss of 8 kg in last 6 months. There were no respiratory complaints and no history of pulmonary or gastrointestinal tuberculosis in the past.

Clinical signs on physical examination were normal. Total leukocyte count was 9000/mm^3 with the following differential count: Neutrophilis 84%, Lymphocytes 12%, and Monocytes 2%. Haemoglobin: 10.8 gm/dl, ESR: 60 mm in 1st hr and CRP: 6.35 mg/dl (reference value <0.5 mg/dl).Liver function tests were found to be normal. ICT for malaria and kala-azar and tests for febrile antigens were found to be negative. Montoux test was negative (2mm). Serum CA 19-9 was 16.1 U/ml (reference value <37U/ml). Chest x-ray was normal. Ultrasound scan of the abdomen showed a small hypoechoic area near the head of pancreas. Contrast enhanced computed tomography (CECT) scan of the abdomen demonstrated heterogenous mass in the pancreatic head (Figure 1).

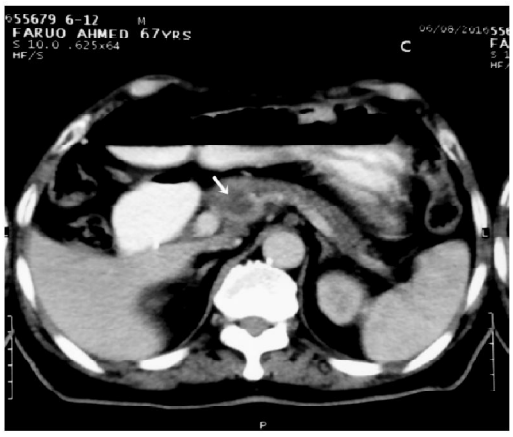

Figure 1: CECT shows mixed density mass in the head of pancreas (Arrow)

USG guided FNAC was performed, which revealed granulomatous inflammation with epithelioid cells and abundant caseous necrotic material which is cytologically consistent with tuberculosis (Figure 2).

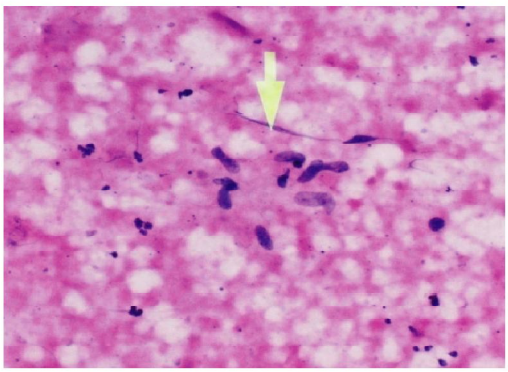

Figure 2 : FNAC shows Pancreas epithelioid cells, caseous materials and celluar debris (H&Ex400)

The patient was treated with four-drug anti-tuberculosis therapy (Rifampicin: 600 mg, INH: 300 mg, PZA: 1500 mg, Ethambutol: 1200 mg daily) for nine months. He became asymptomatic after completing two months of therapy. In the follow-up, the patient showed gradual gain in weight (8 kg in nine months), decrease in erythrocyte sedimentation rate (ESR) and repeat CECT of the abdomen performed after nine months showed radiological resolution of the lesion (Figure 3).

Figure 3: Repeat CECT of the abdomen performed after six months shows gradual radiological resolution of the lesion.

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

DISCUSSION

Primary pancreatic tuberculosis (PPTB) is described as an isolated involvement of pancreas by *Mycobacterium tuberculosis* in the absence of involvement of any other organ or previously identified TB.[5] The pancreas is rarely affected by tuberculosis probably because of the presence of pancreatic enzymes.[3] Fewer than hundreds cases have been reported worldwide.[6] Aurbach first reported pancreatic involvement in 4.7% of biopsies in case of miliary tuberculosis.[7] Most reports of pancreatic tuberculosis indicate a preponderance of males in the reported cases except for two reports from China and South Korea. The mean age (or median) in various published series varied from 36 to 56 years suggesting that most patients are affected in the fourth to fifth decade of life.[7] Isolated pancreatic TB is predominantly observed in the following patient types:[8]

- Patients who reside in endemic tuberculosis zones,
- Patients in areas of widespread TB dissemination such as a miliary setting and developing countries
- Patients who are immune-compromised

The possible mechanisms of involvement of pancreas are hematogenous dissemination from an occult lesion in lungs or abdomen, direct spread form the contagious lymph nodes, reactivation of dormant bacilli in an old tubercular lesion in an immune suppressive state.[4]

The common clinical features are non-specific abdominal pain, fever, anorexia and weight loss. Less common features are anemia, vomiting, obstructive jaundice, upper gastrointestinal bleeding and portal hypertension.[7-11] Rarely, diabetes mellitus may occur secondary to pancreatic tuberculosis.[12] Past history of tuberculosis has been reported in up to 44% of cases.[7] Clinical examination is usually non-contributory. Presence of abdominal lump has been reported in a variable number of patients in few reports. Presence of human immuno deficiency virus (HIV) infection has been reported in up to 50% of cases.[6,16,17] Abnormal chest radiographs have been reported in up to 50% of patients with pancreatic tuberculosis. Positive tuberculin skin test has been reported in 32–71% of patients with pancreatic tuberculosis across various series. Ultrasonography features include a diffusely enlarged pancreas which may or may not be associated with peripancreatic and mesenteric lymphadenopathy. Other associated findings are bowel wall thickening, focal hepatic or splenic lesion and ascites.[7] CT scan most commonly reveals a mass lesion but cystic lesions and multiloculated lesions have also been found to be of tubercular origin. Other findings include peripancreatic and periportal lymphadenopathy with peripheral ring enhancement.[1,6,7]

Ultrasound or CT-guided FNAC, essential to establish the diagnosis, helps evaluating samples by staining, cytology, bacteriology, culture and polymerase chain reaction assay. The microscopic features of tuberculosis are granuloma, caseation necrosis (seen in 75%-100% of cases) and presence of acid fast bacilli (identified in 20%-40% of cases). Endoscopic ultrasound (EUS) is a reliable technique for differentiating pancreatic lesion from peripheral structures. It is also preferred for tissue biopsy because of less chances of needle tract dissemination especially when the mass seems malignant.[7,10,13,14,15]

Most cases of pancreatic TB respond well to anti-tubercular drugs. Directly observed therapy with a standard multiple anti-tubercular drugs regimen including isoniazid, rifampicin, pyrazina-

mide, and ethambutol or streptomycin for 6-12 months, is usually effective. Minimally invasive procedures may be required in patients with enlarging symptomatic pancreatic mass not responding even after getting anti-tubercular drugs therapy for a reasonable period of time.[7,10,16,17]

CONCLUSION

The diagnosis of pancreatic tuberculosis is challenging, requires high index of suspicion. It should be considered in the differential diagnosis in patients with pancreatic lesions, particularly those with constitutional symptoms. USG or CT-guided FNAC emerges as an extremely important method of choice to diagnose pancreatic tuberculosis because of its low-invasiveness and reasonable specificity. The majority of patients respond well to anti-tubercular chemotherapy with a good prognosis.

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Conflict of Interest: None

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