Case Report

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Pancreatic Tuberculosis Mimicking a Mass: A Case Report

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Running Title Tuberculosis as a Pancreatic Tumour

ABSTRACT

Tuberculosis, a preventable and curable disease caused by Mycobacterium tuberculosis, is the leading infectious cause of mortality worldwide. Organs commonly affected are lungs and extrapulmonary organs like lymph nodes, meninges, bones, genitourinary and gastrointestinal tract. Ileocaecal tuberculosis is the commonest form of the gastrointestinal tract. Disseminated infection can involve almost all organs in the body but isolated pancreatic tuberculosis is rarely reported in the literature. Hereby, we report a case of a young female presenting with abdominal pain and further evaluation with imaging revealed pancreatic mass raising suspicion of malignancy. Endoscopic ultrasound (EUS) guided FNAC of pancreatic mass surprisingly revealed necrotizing granulomatous lesions favoring tuberculosis. This was further supported by the complete resolution of the mass with Antituberculous Therapy (ATT).

What is important:

All pancreatic masses are not malignant. Infectious causes like tuberculosis should be considered in the differential diagnosis which is curable by medication. With a high index of suspicion and adequate workup, unnecessary invasive procedures can be avoided.

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Introduction

Tuberculosis (TB), which is caused by the *Mycobacterium tuberculosis* complex, is one of the oldest diseases known to affect humans and one of the leading causes of infection-related death worldwide. *Mycobacterium tuberculosis* infects about one-third of the world's population, potentially causing both pulmonary and disseminated disease[1]. The WHO estimated that 10.4 million (range, 8.8–12.2 million) new (incident) cases of TB occurred worldwide in 2016, 95% of them in developing countries of Asia (6.5 million), Africa (2.6 million), the Middle East (0.77 million) and Latin America (0.26 million).TB affects the lungs predominantly followed by lymph nodes, pleura, genitourinary tract, bones and joints, meninges, peritoneum and pericardium[1]. However, virtually any organ can be affected. Abdominal TB includes the gastrointestinal tract (Ileocecal region)[1,2] lymph nodes, peritoneum, solid organs like the spleen, liver and pancreas. Isolated pancreatic tuberculosis is a rare entity in either immunocompromised or immunocompetent persons[2]. In the current report, we describe a case of isolated pancreatic tuberculosis presenting as a mass in the immunocompetent patient which is a rare occurrence.

Case presentation

A 27-year-old female working as a nurse in a tertiary care hospital presented with abdominal (right upper quadrant) pain for one month which was described as intermittent, dull aching with no radiation, no positional variation. There was no history of nausea, vomiting, loose stools and altered bowel habits. No history of abdominal distention and yellowish discoloration of eyes.

The patient also had a history of evening rise of temperature with chills for one month. There was no history of myalgias, arthralgias, loss of weight and loss of appetite. Besides,there was no history of tuberculosis and denied a history of chronic cough or use of prolonged medication for any condition associated with cough and fever. But patient remembers that her grandmother used to suffer from TB with a cough to which she was exposed in childhood. She was not diabetic, hypertensive, or suffering from any chronic illness.

On examination, the patient was afebrile. Vitals were stable. General examination was normal. Per abdomen examination: there was mild tenderness in the right upper quadrant. No palpable organomegaly and mass. All other systemic examination was normal.

On biochemical evaluation, hemogram, renal, liver function tests, and blood sugars were normal. The chest radiograph was normal. Ultrasound abdomen revealed 2.6 × 1.7cm sized exophytic solid cystic lesion noted in the head of the pancreas with peripheral component showing internal vascularity. Pancreatic malignancy was suspected and CECT abdomen was done showing 2.1×1.8 cm heterogeneously enhancing lobulated hypodense lesion with central non-enhancing area in the neck of the pancreas with necrotic enlarged mesenteric lymph nodes (Fig.1).

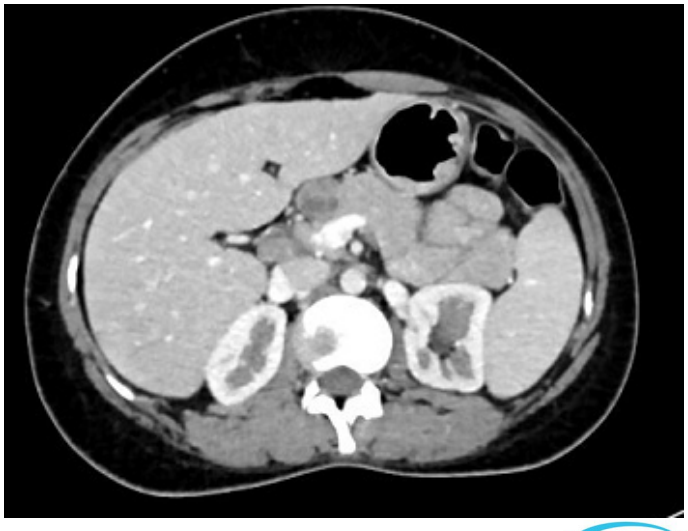

Fig. 1. CECT Abdomen: Axial cuts of the CECT abdomen show a well-defined heterogeneously enhancing hypodense lesion with a non-enhancing central necrotic area in the pancreatic head

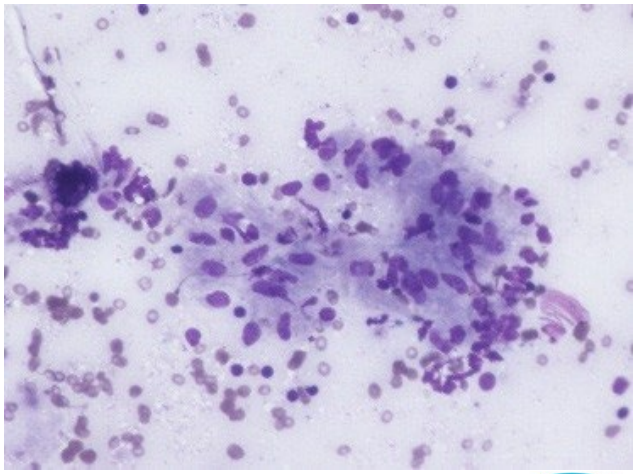

Fig. 2. FNAC of the lesion showing necrotizing granulomas on Giemsa stain (× 10).

Fig. 3. Ultrasound abdomen: Follow-up Ultrasound abdomen shows no evidence of local lesion in the region of the head of the pancreas.

On endoscopic ultrasound(EUS), transduodenal FNAC of pancreatic lesion & lymph node was done showing necrotizing granulomatous inflammation with no evidence of malignancy. (Fig. 2).

Mantoux test (skin tuberculin test) was positive. With this evidence, a diagnosis of pancreatic tuberculosis was made and the patient was started on the first-line antitubercular drugs. Within one month, abdominal pain subsided and there were no episodes of night sweats. After two months of treatment, the size of the mass was decreased. The patient was kept under follow-up. Repeat ultrasound was done after 6 months of ATT which showed a significant decrease in size of the pancreatic mass and the patient was symptom-free. (Fig. 3).

Discussion

Tuberculosis is a disease of great public interest in India[2]. Up to 12% of patients infected with tuberculosis have abdominal organ involvement. Evidence of concomitant active pulmonary tuberculosis is found in only 6-38% of cases [1]. Pancreatic tuberculosis with or without peripancreatic lymphadenopathy is rare even in an endemic region. Retroperitoneal location, pancreatic enzymes like lipase and DNases make the pancreas relatively resistant to Mycobacterial invasion [3, 4]. Three forms of Mycobacterial infection to the pancreas have been described in the literature: (1) Generalised military tuberculosis, (2) Spread to the pancreas from coeliac and other retroperitoneal lymph nodes, (3) Primarily

localized to the pancreas which may reflect the point of origin from intestinal tract[2, 5].

Primary pancreatic tuberculosis is defined by an isolated involvement of the pancreas by tuberculosis in the absence of previously identified tuberculosis and involvement of any other organs[3, 5]. Primary pancreatic tuberculosis is rare with less than 100 cases reported worldwide and incidence estimated to be less than 4.7%[5]. Pancreatic TB presents with a wide spectrum of symptoms such as abdominal pain, fever, night sweats, mass (as in our case), anorexia, weight loss, pancreatic abscess, massive GI bleed, acute or chronic pancreatitis, splenic vein thrombosis, pancreatic mass causing obstructive jaundice mimicking malignancy[3]. When presented as the mass, it usually involves the head and uncinate process. In our case, it involved the head and neck of the pancreas.

Ultrasound abdomen shows bulky inhomogeneous pancreas, cystic lesions, or one or more solid hypoechoic masses in the pancreatic parenchyma that may sometimes show liquefaction[6]. Our case showed an exophytic solid-cystic lesion in the head. CT features are nonspecific which include hypodense, hypovascular, well-defined mass with peripheral enhancement with multiloculated appearance with adjacent necrotic or nonnecrotic lymphadenopathy [6]. CT in our case showed similar findings with necrotic mesenteric lymphadenopathy. FNAC is the easiest and minimally invasive method of diagnosing pancreatic TB. It not only confirms tuberculous etiology but also rules out malignancy. There are several reports which recommend FNAC for diagnosing Tuberculosis[6, 7]. Mallery et al. in 2002 concluded that EUS guided tissue sampling is as accurate as CT/USG guided sampling and surgical biopsies[8]. Direct histopathology examination by laparoscopy should be considered only when the above approaches fail to confirm the diagnosis [8].

The patient in our case had no history of tuberculosis. The disease was localized, a chest radiograph was normal. She had no other detectable foci of tuberculosis. She had a positive Mantoux test and cytological diagnosis. However, acid-fast bacilli could not be demonstrated.

The treatment comprises 4 drugs of antitubercular chemotherapy for 6-12 months.[4]. Response to treatment is predictable and complete. Patients should be followed up carefully for response to therapy and to rule out the rare possibility of tuberculosis coexisting to malignancy especially in endemic areas [3, 9].

Tuberculosis should be suspected in a patient having pancreatic mass particularly if the patient is young, not jaundiced, coming from an area of high TB endemicity. Emphasis can be laid on avoiding unnecessary laparotomy by doing CT/ US/ EUS guided FNAC with culture for Mycobacterium in a patient with pancreatic mass [10]. Its vague symptomatology, nonspecific radiological findings, and excellent response to medical treatment call for great vigilance.

Ethical Considerations

Consent

Written informed consent taken from the patient.

Compliance with ethical guidelines

All ethical principles are considered in this article.

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Authors' contributions

All authors equally contributed in preparing this article.

Conflict of interest

Nil.

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