

Pancreatic Tuberculosis Mimicking Carcinoma: Case Report

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Abstract

Pancreatic tuberculosis is an extremely rare entity, even in tuberculosis endemic areas. It closely mimics pancreatic cancer on clinical presentation as well as on imaging studies. A 58-year-old woman presented with features of obstructive jaundice and abdominal pain. Ultrasonography and computed tomography scan showed mass in the pancreatic head for which she underwent an Endoscopic ultrasound with fine needle aspiration of the pancreatic head. Histological examination of the biopsy showed granulomatous inflammation with caseous necrosis, Polymerase chain reaction (PCR) test of the specimen was positive for *Mycobacterium tuberculosis*. Antituberculous medicines were started and she showed a clinical and biological improvement 2 months later.

Keywords: tuberculosis, pancreatic mass, endoscopic ultrasound, diagnosis

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I. Introduction

Tuberculosis is a health problem caused mainly by mycobacterium tuberculosis which can affect any organ in the human body.

Tuberculosis can infect various digestive organs but pancreatic involvement remains extremely rare and the diagnosis of pancreatic tuberculosis can easily be missed because it has similar clinical and radiological presentation to pancreatic adenocarcinoma.

We report a case of patient initially diagnosed as a tumor of the pancreatic head but the echoendoscopy with biopsy has rectified the diagnosis to pancreatic tuberculosis.

II. Patient and observation

Patient Information: A 58-year-old woman with no significant past medical history presented with intermittent, midepigastic pain, icterus with clay-colored stools for 3 weeks. She also admitted having a 15 Kg unintentional weight loss over the past 4 months with fever, chills, night sweats.

Clinical Findings: Physical examination showed icteric sclera and tenderness over the right upper abdomen. There were no enlarged peripheral lymph nodes nor were any palpable mass in the abdomen; the liver and spleen not enlarged.

Diagnostic assessment :The laboratory examinations on admission showed: white blood cell count (WBC): 7000/ μ L; C-reactive protein (CRP) 15mg/L, serum glutamic oxaloacetic transaminase (SGOT) 150 μ /L; serum glutamic pyruvic transaminase (SGPT) 200 μ /L; total bilirubin 40mg/L with direct bilirubin 30 mg/L The hepatitis B surface antigen (HBsAg), anti-hepatitis C virus (anti-HCV antibody), and anti-human immunodeficiency virus (anti-HIV) antibody were all negative. Alpha-fetoprotein, CA 19-9, and carcinoembryonic antigen (CEA) were all within normal limits. Amylase and lipase levels were within normal range. Abdominal ultrasonography (Figure1) revealed a heteroechoic mass lesion with an unclear irregular border in the pancreatic head, with common bile duct and biliary tract dilatation.

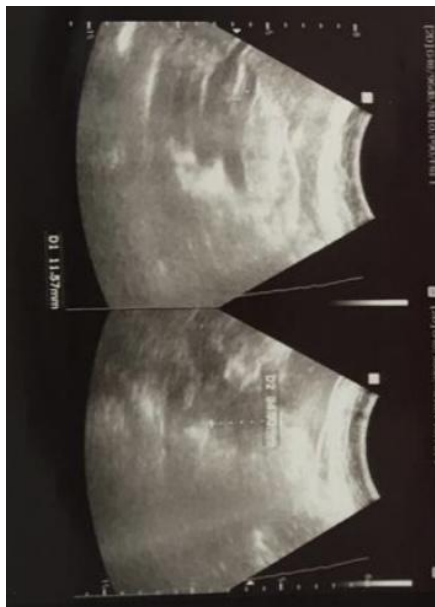


Figure 1: Abdominal ultrasonography revealing a heteroechoic in the pancreatic head, with common bile duct and biliary tract dilatation

Computed tomography (CT) of the abdomen (Figure2,3) showed a mass in the pancreatic head with a slightly low density, an unclear irregular border with dilatation of the biliary tract and the common bile duct. Contrast-enhanced CT showed heterogenous enhancement in the pancreatic mass measuring 70*50mm which was probably a pancreatic malignant tumor. Chest x-ray and thoracic CT scan (Figure4) were normal.

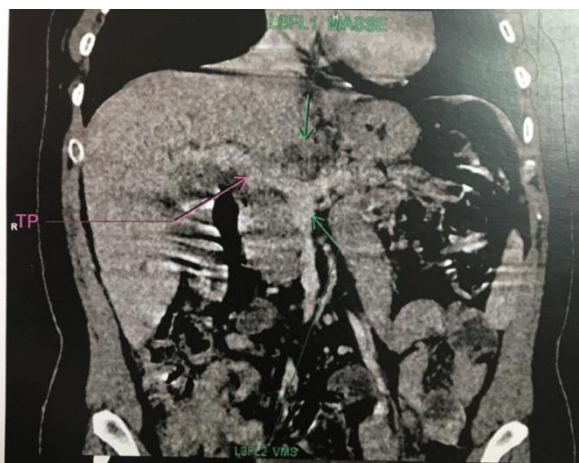


Figure 2: Coronal section of CT scan of abdomen showing a mass in the pancreatic head

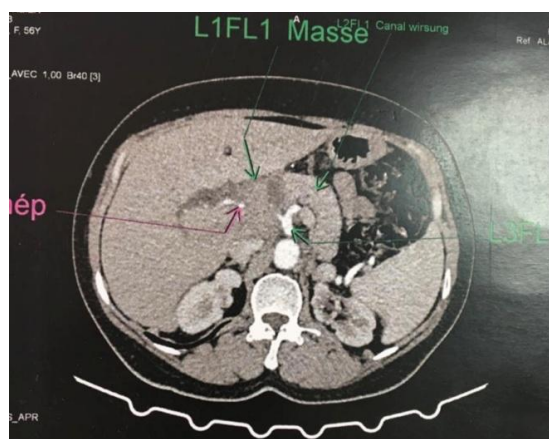


Figure 3: Abdominal CT scan showing a mass in the pancreatic head

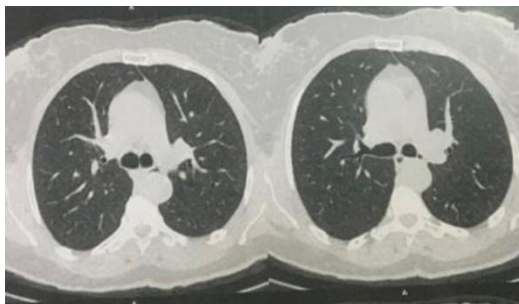


Figure 4: Normal Thoracic CT scan

The initial diagnosis was pancreatic malignancy. Endoscopic ultrasound with fine needle aspiration of the pancreatic head mass was performed. Sonographically, there was a 5 cm irregular mass within the head of the pancreas extending into the porta hepatis.

Diagnosis: cytologic and histopathologic evaluation of the biopsy specimen revealed the presence of granulomatous inflammation with caseous necrosis with no evidence of malignancy, Polymerase chain reaction (PCR) test of the specimen was positive for *Mycobacterium tuberculosis*, given the diagnosis of pancreatic tuberculosis.

Therapeutic interventions: The patient was started on antituberculin therapy with isoniazid, rifampicin, pyrazinamide, and ethambutol for 2 months and rifampicin, isoniazid for 4 months.

Follow-up and outcome: Rapid improvement of symptoms and resolution of the jaundice followed within a period of several days, as demonstrated by normalization of liver function tests after 2 months.

Informed Consent: The patient received informed consent

III. Discussion

Tuberculosis is still a major health problem worldwide, an estimated 10 million people worldwide contracted TB in 2019 (1).

Extrapulmonary tuberculosis represents an increasing percentage of all forms of tuberculosis, reaching 20-40% depending on the series (2), its abdominal location accounts for 5-10% of all locations and abdominopelvic tuberculosis is the sixth most common form (3)

For a long time, the pancreas was considered one of the rarely affected sites of abdominal tuberculosis. In large autopsy series of TB patients, Auerbach et al.⁷ and Bhansali et al.⁸ found pancreatic involvement in only 4.7% and 0% of patients, respectively. However, in recent times an increase in the number of reports of pancreatic TB has been noted (4)

The explanation for the rarity of pancreatic tuberculosis is due to the anti-mycobacterial effect of pancreatic lipase and deoxyribonucleases⁽⁵⁾

The pathogenesis of pancreatic tuberculosis may be due to dissemination from retroperitoneal lymph node, haematogenous spread of the bacillus of Koch or a primary pancreatic tuberculosis which is the rarest type⁽⁶⁾.

Pancreatic tuberculosis usually has non-specific characteristics, the upper abdominal pain, jaundice, fever, loss of appetite and weight loss were the main clinical features of pancreatic tuberculosis⁽⁷⁾

Pancreatic tuberculosis may present with a wide range of imaging findings, most of which are located in the head of the pancreas (8) Ultrasound shows bulky inhomogenous pancreas or a cystic lesion or one or more solid hypoechoic masses in the pancreatic parenchyma that may sometimes show central liquefaction and does not show any specific feature suggestive of tuberculosis of pancreas. CT scan features are non-specific and include hypodense, hypovascular well-defined mass with irregular margins and peripheral enhancement; areas of central enhancement may result in a multiloculated appearance with adjacent necrotic or non-necrotic lymphadenopathy. These features may resemble inflammatory or neoplastic cystic lesions of the pancreas. The common bile duct and pancreatic head have been reported to be normal in patients with pancreatic tuberculosis, even if the mass is positioned centrally in the head of the pancreas unlike adenocarcinoma where the pancreatic duct is dilated in centrally located tumors⁽⁹⁾

Our patient had atypical features ct scan with dilatation of the biliary tract and the common bile duct due to the mass in pancreatic head

In a case where an inoperable malignancy is suspected, it is reasonable to use a trans-abdominal approach (ultrasound or CT guided) for obtaining tissue for cytological evaluation. However, if the lesion is

resectable, echoendoscopy is the preferred modality to obtain pancreatic tissue. This approach is believed to avoid peritoneal seeding in possibly resectable cases. (10)

Use of surgery may not be needed for diagnosed patients of pancreatic tuberculosis but may be needed for patients where a diagnosis is not established by percutaneous or EUS guided approaches

The treatment of pancreatic tuberculosis is similar to the therapy for other forms of tuberculosis, anti tubercular therapy given for 6 month duration. The initiation phase of the therapy consists of intensive quadrithrapy with (rifampin, isoniazid, pyrazinamide, and ethambutol) given daily for 2 months, and this is followed by a continuation phase of at least 4 months with rifampin and isoniazid. The presence of obstructive jaundice does not alter the drugs and dosages, but it is prudent to closely follow-up these patients for drug induced liver injury. With Antitubercular therapy, there is improvement in the overall clinical condition of the patient and resolution of jaundice and liver function impairment(11). However, follow-up should include a comprehensive assessment of clinical symptoms, weight, liver function test, and repeat imaging to confirm resolution or improvement in radiological findings

IV. Conclusion

Pancreatic TB should be suspected in patients with solid pancreatic lesions, especially if the patient is young, immunocompromised, or from an endemic area. If diagnosed early, pancreatic tuberculosis is treatable medically and avoids the need for unnecessary surgical procedure.

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