

## CASE REPORT

# Isolated Tuberculosis of the Pancreas: A Case Report

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### ABSTRACT

**Context** Pancreatic tuberculosis is a rare entity. Only a few cases have been reported in the medical literature. We hereby describe a case of pancreatic tuberculosis in an immunocompromized individual. **Case report** A fifty-year-old African-American gentleman with history of HIV non-compliant on anti-retroviral therapy presented with epigastric pain for five weeks duration. CT scan of abdomen showed large necrotic node on the posterior aspect of the head of pancreas and multiple cystic masses adjacent to the pancreas. Acid fast bacilli were found on staining of CT guided biopsy of the node. Cultures grew *Mycobacterium tuberculosis*. Anti-tubercular therapy was initiated and resulted in gradual resolution of symptoms. **Conclusion** Pancreatic tuberculosis is rare and is frequently confused with pancreatic cancer on clinical presentation as well as on imaging studies. Since it is a curable disease, accurate diagnosis is paramount CT or ultrasound guided biopsy is cornerstone of diagnosis. Endoscopic ultrasound is now increasingly being used for obtaining tissue for diagnosis. Anti-tubercular therapy is curative in majority of the cases.

### INTRODUCTION

Tuberculosis of the pancreas is rare [1]. It is sparsely reported in medical literature. Majority of the cases have been reported from tuberculosis endemic regions of the world. It is often confused with carcinoma of pancreas or periampullary carcinoma, which are more common causes of radiologically determined masses in this anatomical location [1, 2]. Extensive surgical procedures for this often misdiagnosed medically treatable condition, is not unheard of, which underlies the importance of tissue diagnosis in these cases [3]. We hereby report pancreatic tuberculosis in a HIV positive patient. Through this case, we attempt to review the clinical presentation, diagnosis and management of this rare entity.

### CASE REPORT

A 50-year-old African-American gentleman with past medical history of HIV non-compliant on highly active antiretroviral therapy presented to the Emergency Department with complaints of progressively worsening epigastric pain over preceding five weeks.

Pain was described as continuous, dull ache unrelated to meals. This was not associated with nausea, vomiting, constipation or obstipation. No recent change in bowel habits was reported. Patient presented with low grade fevers, anorexia and weight loss quantified as 11 kg over the same period. No cough, chest pain or hemoptysis was reported.

On general physical examination, patient was found to be cachectic. Oral examination showed presence of severe oral mucosal thrush. Abdomen was soft and diffusely tender in epigastrium and left and right upper quadrants. No hepatosplenomegaly was felt. Bowel sounds were heard in all four quadrants. Chest was clear to auscultation. Rest of the systemic examination revealed no abnormality. On routine investigations, blood CD4 count was found to be  $5 \mu\text{L}^{-1}$ .

Patient thereafter underwent CT scan of the abdomen with intravenous and oral contrast which showed a large necrotic node on the posterior aspect of the head of pancreas. Large multilobular cystic lesions adjacent to the pancreas in the porta hepatis and peripancreatic fat were seen (Figure 1). Enlarged aortocaval lymph nodes were seen. No bowel obstruction was observed. No free air or free fluid was noticed. Interventional radiology assisted with draining the cystic masses percutaneously under CT guidance. The peripancreatic mass was biopsied. Biopsy material stained positive for acid fast bacteria. Acid-fast bacillus cultures grew *Mycobacterium tuberculosis*. A diagnosis of pancreatic and peri-pancreatic tuberculosis was made. Chest X-ray did not show any evidence of active tuberculosis or any old healed granulomas.

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**Key words** HIV; Pancreas; Tuberculosis

**Abbreviations** HIV: human immunodeficiency virus

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Patient was started on four drug antitubercular therapy with isoniazide, pyrazinamide, rifampin and ethambutol. Highly active antiretroviral therapy was also initiated. There was gradual resolution of symptoms. Patient was discharged in a stable condition and followed-up subsequently as an outpatient.

## DISCUSSION

Tuberculosis is a major health problem in developing countries. Through good part of past three decades since the advent of HIV, it has posed serious public health concerns for developed nations as well [4]. It primarily involves the lungs. It occurs in extrapulmonary locations in about 15% of the cases [5]. Pancreas is an organ rarely affected by the *Mycobacteria*. Most of the medical literature on this rare disease is limited to case reports or small case series. There have been reported incidents in the past where extensive surgeries have been performed for high suspicion of periampullary carcinomas which later turned out to be tuberculosis of the pancreas [3]. Owing to availability of curative pharmacotherapy, recognition of this disease process is vital.

Tuberculosis of the pancreas presents with nonspecific symptoms like fever, abdominal pain, weight loss and anorexia [6, 7]. It has been reported to present as obstructive jaundice, gastrointestinal bleed, acute or chronic pancreatitis, pancreatic mass mimicking malignancy, pancreatic abscess, portal venous thrombosis causing portal hypertension and even colonic perforation [8, 9]. It differs from pulmonary tuberculosis in two distinct ways. First, pancreatic tuberculosis tends to occur in a younger population (mean age is about 31 years in India) and occurs due to ingestion of mycobacteria rather than inhalation [3]. The *Mycobacteria* gain access to the gastrointestinal tract where necrotizing granulomas are formed. Following this, the pathogens enter the lymphatic system and then invade the organs in the gastrointestinal tract including the pancreas [10]. The *Mycobacteria* may also invade the pancreas by hematogenous route.

Since it is a treatable disease, diagnosis is vital to appropriate therapy. History of extra-abdominal tuberculosis must arouse a strong suspicion. Clinical symptoms and physical examination add little to the



**Figure 1.** CT scan of the abdomen showing large cystic masses around the pancreatic head and peripancreatic lymph nodes.

diagnosis since both are rather non-specific. Imaging modalities are suggestive but not pathognomonic of the disease. They fail to differentiate between tuberculosis of pancreas and pancreatic cancer. Ultrasonography reveals focal hypoechoic lesions or cystic lesions of the pancreas [11]. Findings on CT scan include hypodense lesions and irregular borders mostly in the head of the pancreas, diffuse enlargement of the pancreas or enlarged peripancreatic lymph nodes [12]. Ring enhancement or low density areas within enlarged lymph nodes must raise suspicion of tuberculous lymph nodes. Definitive diagnosis is based on histological and bacteriological evidence of disease. Bile cytology or ERCP has low diagnostic yield estimated around 5% [3]. Ultrasound or CT guided biopsy or surgical biopsy is central to definitive diagnosis [1, 11]. In a few cases, however, diagnosis is made at laparotomy. Endoscopic ultrasound (EUS) is being increasingly used these days for imaging and fine needle aspiration of solid or cystic pancreatic masses [13]. It is now considered the preferred imaging modality for the diagnosis of pancreatic masses [14]. The complication rate for the procedure is rather low (1-2%) [15]. However, it is a technically difficult procedure with a longer learning curve compared to CT or ultrasound guided percutaneous needle biopsies. In a recent randomized controlled study, comparing EUS-guided biopsy and CT- or US-guided biopsy for determination of pancreatic mass etiology, no statistical difference was found in terms of accuracy [16]. There is no known negative impact of tumor cell seeding with EUS-guided FNA of cystic or solid pancreatic masses [17].

Once diagnosis is established, anti tubercular therapy is administered, which is curative in majority of the cases [1, 18]. In few patients with biliary obstruction, surgical or endoscopic therapy may be required [19]. Of note, caution must be exercised in treating *Mycobacterium tuberculosis* infection in HIV positive individuals. Anti tubercular therapy must be started as early as possible on diagnosis of tuberculosis. Directly observed therapy is highly recommended. Timing of initiation of anti-retroviral therapy after starting anti tubercular therapy is determined by the patient's immunologic status (CD4 count). Non nucleoside reverse transcriptase inhibitor based regimens have fewer interactions with rifampin and hence are preferred. Six month duration of therapy is considered adequate in majority of the patients. However, in some patients with delayed response to therapy, prolonged course is recommended [20].

To conclude, a high index of suspicion must be maintained for pancreatic tuberculosis in immunocompromised patients (especially HIV patients) who present with short duration of non-specific symptoms of pancreatic disease. Imaging is helpful but tissue diagnosis is the cornerstone for management. Anti tubercular therapy is highly effective for therapy.

**Conflict of interest** The authors have no potential conflicts of interest

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