

A Rare Case of Isolated Pancreatic Tuberculosis

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ABSTRACT

Pancreatic tuberculosis (TB) is a rare but important entity to consider when evaluating a pancreatic mass, especially in patients from endemic areas. Its clinical and radiologic features may mimic those of a pancreatic neoplasm, making it a difficult clinical diagnosis. We present a case of a 31-year-old Indian man who presented with fevers, night sweats, weight loss, and epigastric pain. Abdominal magnetic resonance imaging (MRI) showed a pancreatic head mass. Biopsy of the mass was consistent with pancreatic tuberculosis.

INTRODUCTION

Tuberculosis (TB) is a systemic disease that can affect any organ.¹ Abdominal TB can affect the ileocecal region, liver, spleen, and kidneys. While abdominal TB is common in developing and endemic countries, pancreatic and peripancreatic TB is rare. Pancreatic TB may present with nonspecific findings such as epigastric pain, fever, anorexia, weight loss, jaundice, and a pancreatic mass.¹ Its clinical and radiologic features may mimic those of a pancreatic neoplasm, making it difficult to diagnose clinically.² Consequently, most previously reported cases were diagnosed after exploratory laparotomy for evaluation of pancreatic malignancy.³⁻⁴

CASE REPORT

A 31-year-old previously healthy man presented with fevers, epigastric pain, poor appetite, and a 12-kg weight loss over 1 year. The patient denied a history of TB. Abdominal MRI revealed periportal lymphadenopathy and a 3 x 4-cm mass indenting the pancreatic head and uncinate process and compressing the mid-common bile duct. In addition, a focal, lobulated, septated, exophytic lesion measuring 2.1 x 2.3 cm was noted in the pancreatic tail. Initial labs were notable for a white blood cell count of 12,200 cells/ μ L, amylase of 152 mg/dL, eosinophils of 2122 cells/ μ L, and a lipase of 623 U/L. Malignancy work-up, including cancer antigen (CA) 19-9, CA 125, and alpha fetoprotein, was negative. Human immunodeficiency virus test was negative, and quantiferon gold was positive. A chest x-ray showed no parenchymal disease. Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) of the pancreatic head mass and tail cyst was performed (Figure 1). EUS demonstrated an irregular, hypoechoic mass with poorly defined borders in the pancreatic head in the pancreaticoduodenal groove.

Additionally, EUS identified an anechoic lesion in the pancreatic tail, suggestive of a cyst/pseudocyst. The cyst had 2 thinly septated compartments with a thin outer wall and lacked internal debris in the fluid filled cavity. Cytological examination of the pancreatic head mass revealed caseating granulomas and a positive acid fast bacilli (AFB) stain suggestive of mycobacteria (Figures 2 and 3). Cytological examination of the pancreatic tail cyst demonstrated a non-mucinous cyst with a carcinoembryonic antigen of <0.2 ng/mL and amylase of 453,022 U/L. AFB culture of the pancreatic

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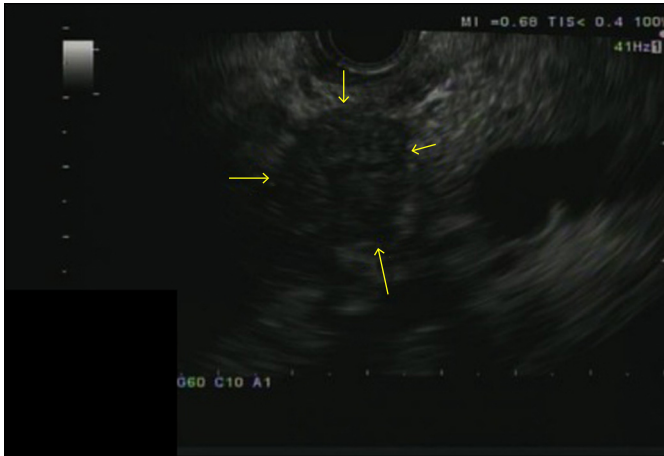


Figure 1. Solid mass in the head of the pancreas as seen on EUS.

cyst was negative. The patient was treated with isoniazid, pyrazinamide, ethambutol, and rifampin for 4 months followed by isoniazid and rifampin for 10 months. Follow-up MRI of the abdomen 1 year after initiation of treatment showed resolution of the pancreatic head mass.

DISCUSSION

While TB is a major health concern worldwide, isolated pancreatic TB is uncommon even in endemic areas.⁵ The prevalence of pancreatic TB is similar in men and women with a mean age of 40 years old.⁶ In a large case series studying abdominal TB in India, there were no reported cases of pancreatic TB.² Pancreatic TB can affect both immunocompromised and immunocompetent populations. While it occurs more frequently among the immunocompromised, there has been an

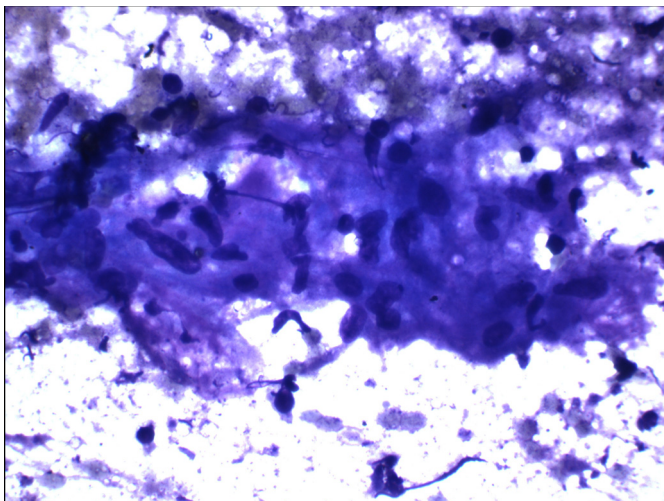


Figure 2. Pancreatic head mass. FNA smears revealed several granulomas with epithelioid histiocytes characterized by elongated and curved nuclei in a background of necrosis and chronic inflammation. Diff-quick stain, 600X.

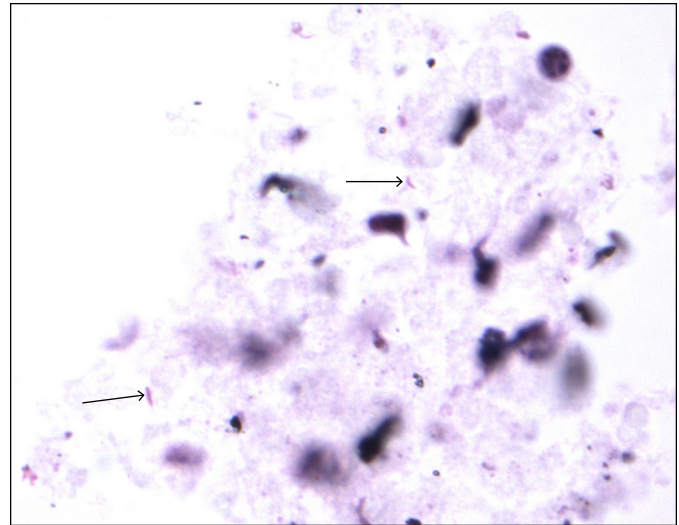


Figure 3. Pancreatic head mass. ThinPrep preparation showing acid-fast bacilli, suggestive of mycobacterium TB, marked by black arrows. Ziehl-Neelsen stain, oil immersion, 1000X.

increase in reported cases affecting the immunocompetent population in the Western world.⁷ It has been hypothesized that pancreatic TB is a rare occurrence due to the antibacterial effect of pancreatic enzymes such as lipases and deoxyribonucleases on mycobacteria.³

Pancreatic TB most commonly affects the head or body of the pancreas, although isolated lesions in the tail of the pancreas have been reported.⁴ When evaluating a solid mass in the head of the pancreas, one must consider primary exocrine pancreatic cancer, pancreatic neuroendocrine tumor, lymphoma, metastatic disease, and focal chronic or autoimmune pancreatitis. Although quite rare, sarcoidosis of the pancreas must also remain in the differential when noncaseating granulomas are identified. In pancreatic TB, patients may present with obstructive jaundice and a pancreatic mass clinically indistinguishable from a pancreatic neoplasm.⁸ There are no radiologic features pathognomonic for pancreatic TB. Typically, pancreatic lesions from TB are heterogeneous and multicystic on imaging.⁹ Computed tomography (CT) findings may include hypodense lesions with irregular borders typically in the head of the pancreas, or enlarged peripancreatic lymph nodes.¹⁰ MRI findings of focal pancreatic TB include a sharply delineated mass exhibiting heterogeneous enhancement often located in the pancreatic head. These lesions are characteristically hypointense on fat-suppressed T1-weighted imaging and show a mixture of hypo- or hyperintensity on T2-weighted imaging.¹¹

Given the lack of characteristic findings on imaging, the diagnosis of pancreatic TB necessitates histological, cytological, and bacteriological confirmation. EUS-FNA is the diagnostic modality of choice for pancreatic TB.¹² The majority of cases

of pancreatic TB respond well to standard anti-TB regimens with isoniazid, rifampin, pyrazinamide, and ethambutol or streptomycin for 6-12 months.⁷ The duration of therapy and choice of regimen may change in the instance of a resistant strain. Due to noncompliance and human immunodeficiency virus infection, multidrug resistance is increasing worldwide.⁴ In summary, isolated pancreatic TB is a rare disease that must be considered in the differential diagnosis of a pancreatic mass, especially in endemic regions. A high index of suspicion and an accurate diagnostic approach with ultrasound or CT-guided FNA are necessary. There are no specific guidelines for management of this disease due to its rarity. Albeit rare, isolated pancreatic TB warrants consideration in the evaluation of a pancreatic mass in the appropriate clinical setting.

DISCLOSURES

Author contributions: DJ Waintraub wrote the manuscript and reviewed the literature. LS D'Souza edited and reviewed the manuscript. E. Madrigal and M. Harshan reviewed the pathology and provided the images. G. Ascunce is the article guarantor.

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