



CASE REPORT

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Isolated Tuberculosis of Pancreas – A rare entity & A Diagnostic Dilemma

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Abstract

First described by Auerbach in 1944, Pancreatic Tuberculosis constitutes one of the rarest presentations of abdominal Tuberculosis. Most of the semi microscopic lesion involving the body or head, but a careful and thorough examination along with FNAC can aid in making an accurate diagnosis. Literature search revealed that only nine cases of Pancreatic Tuberculosis have been reported from India in last 5 years. Here we present a rare case of an Isolated Pancreatic Tuberculosis diagnosed on Cytology and treated successfully by anti-tubercular drugs thus preventing major surgery. Keywords: Pancreatic Tuberculosis, Tuberculosis, Pancreas, miliary, extra pulmonary tuberculosis.

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1 | INTRODUCTION

Tuberculosis (TB) is a communicable disease that is a major cause of ill health than done of the leading causes of death worldwide. Until the coronavirus (COVID-19) pandemic, TB is the leading cause of death from a single infectious agent, ranking above HIV/AIDS. TB is caused by the bacillus *Mycobacterium tuberculosis*, which is spread when people who are sick with TB expel bacteria into the air (e.g., by coughing). The disease typically affects the lungs (pulmonary TB) but can affect other sites. [1]. Globally, with an estimated 10 million new cases and around 1.4 million deaths, TB has emerged as one of the top 10 causes of morbidity and mortality in 2019. Worst hit 8 countries account for two thirds of the new TB cases in 2019, with India leading the count. Abdominal infection with TB commonly affects the ileo-cecal region, spleen, liver and kidney. Pancreatic involvement by *M. tuberculosis* is extremely rare, presumably because of the resistance offered by the pancreatic enzymes [2,3]. It is thought to be consequential to bacterial dissemination from regional lymph nodes. The incidence of pancreatic TB is reported to be less than 4.7% worldwide. Pancreatic tuberculosis was first reported by Auerbach in 1944. [4]. The incidence of Pancreatic Tuberculosis has recently increased. Literature search revealed that only nine cases of Pancreatic Tuberculosis have been reported from India in last 5 years. [5]. Clinico-radiologically pancreatic TB closely resembles a pancreatic malignancy. Therefore, most cases of pancreatic TB have been diagnosed after exploratory laparotomy surgery for suspected malignancy. However, with the use of improved imaging techniques computed tomography (CT) or more recently endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) and image-guided interventions preoperative diagnosis of pancreatic masses is now possible without going for surgery [6]. We here present a rare case of an isolated pancreatic tuberculosis presenting as discrete pancreatic mass in the head diagnosed without laparotomy and treated successfully with anti-tubercular treatment (ATT).

2 | CASE SUMMARY

A 27-year-old lady presented with complaint of constant dull aching pain in epigastric region of abdomen associated with multiple daily episodes of nausea and 1-2

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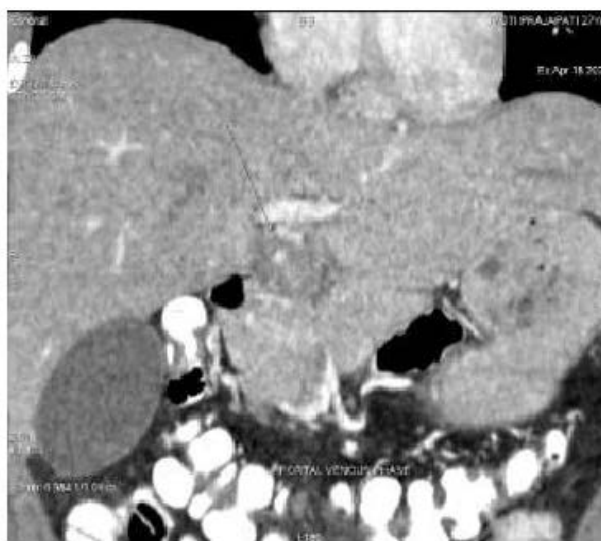
episodes of vomiting per day since 3 months without any history of cough and fever. Patient was referred from a primary health center where ultrasound abdomen was suggestive of Cholelithiasis as is with hypoechoic lesion near the head of pancreas. Patient then went to a tertiary center for further management where a CECT abdomen was done which was S/O 4.1x2.1 cm Benign Pancreatic lesion (?Solid pseudo papillary tumor of Pancreas). She underwent some symptomatic treatment but symptoms still persisted so an image guided FNAC was done which was S/O Langerhans cells, granuloma and occasional acid fast bacilli. All other hematological, biochemical and serology were within normal limits. ESR was raised to 22mm in 1st hr. Ca19.9 was also normal. She was then started on anti-tubercular therapy and became symptomatically better after 2 weeks. However, she defaulted after 1 month and again presented with the same complaints. Again, a repeat CECT was performed which was S/O 2.4x1.8 cm ill-defined hypo dense lesion in the body and neck of the pancreas. Patient was admitted for further evaluation and management. Mantoux test was performed which came out to be positive. Chest x-ray was done which did not show any changes suggestive of pulmonary tuberculosis. Since the patient had previously responded clinically to anti-tubercular therapy which she defaulted after a month and now that both Chest x-ray & CECT abdomen showed no changes suggestive of tuberculosis except an ill defined hypodense lesion in pancreas, a provisional diagnosis of isolated pancreatic tuberculosis was made and the patient was again started on ATT and other supportive therapy. Initial two months she was treated with Isoniazid 300mg/d, Rifampicin 450mg/d, Ethambutol 1800mg/d and Pyrazinamide 1500 mg/d. Subsequently for next ten months she is planned to be treated with rifampicin 450mg/d and isoniazid 300mg/d. The patient improved with the therapy within 2 weeks and was asymptomatic after completing two months of therapy.

3 | DISCUSSION

Tuberculosis is a major health problem in developing countries. With a periodic prevalence of 9.7 million cases of TB; maximum being in Asia, South America, Eastern Europe, and most sub-Saharan African countries. The gastrointestinal tract is the sixth most common site of extra pulmonary involvement for tuberculosis [7]. Incidence of abdominal tuberculosis is about 11–16% [8]. Although pulmonary TB is the most common presentation of disease; extra pulmonary TB (EPTB) accounts for nearly 20% of all cases of TB in immune competent hosts [9].

Isolated pancreatic TB is extremely uncommon, with pancreatic involvement generally being in the setting of miliary or extensively spread TB; most commonly in immunocompromised hosts [10,11].

Pancreatic tuberculosis was first reported by Auerbach in 1944. In his series of 1656 autopsies of tuberculous patients, only 14 cases had pancreatic involvement that may have mimicked neoplasia but did not find any cases of isolated pancreatic tuberculosis. The incidence of pancreatic TB is reported lower than 4.7% world wide [4].



Figs. A and B CECT Abdomen in arterial and Portal Venous phase showing Pancreatic Mass



Figs. C showing Pancreatic tumor on Sagittal view

D showing Hypo dense Mass on delayed phase

Men and women are affected equally [12]. Hematogenous spread from the pulmonary site, bacilli ingestion from sputum of an active pulmonary case, lymphatic spread and direct spread account for most of the postulated mechanism by which the Mycobacterium Tuberculosis bacilli reaches the GI tract. Lymphohematogenous dissemination from an occult lung focus seems to be the most common cause [7,12].

Pancreatic TB presents with a wide spectrum of symptoms such as abdominal pain, constitutional symptoms, obstructive jaundice, iron-deficiency anemia, pancreatic abscess, massive gastro-intestinal bleeding, acute/chronic pancreatitis, secondary diabetes, and a pancreatic mass mimicking malignancy.

Nonspecific pain in the abdomen constitutes the most common symptom. Our patient also presented with abdominal pain as her first complaint followed by other constitutional symptoms such as nausea and vomiting. The head region of the pancreas is the most common location of mass occurrence in pancreatic TB followed by the body, but isolated involvement of the tail has also been reported [13].

Most cases have a high erythrocyte sedimentation rate and skin test is positive in about 70% cases [14]. In our case also the ESR value was 22 mm/hour and skin test came out to be positive. Rest hematological tests are usually within normal limits similar to the findings in our case.

Several imaging approaches like transcutaneous ultra sound, Cts can and endoscopic ultra sound have been used for assessment of pancreatic pathology. The imaging findings may suggest the possibility of tuberculosis, but none of them proved to be pathognomonic for pancreatic tuberculosis. CT scan may show hypodense lesion with irregular border in the head of the pancreas, diffuse enlargement of the pancreas or enlarged peri pancreatic lymph nodes [2]. Similar to our case, the CTs can show hypo dense lesion on the head of pancreas (Fig A,B,C,D). The presence of hypo dense peripancreatic lymph nodes with rim enhancement, as well as and/or mural thickening affecting the ileo-caecal region suggests pancreatic tuberculosis [15]. Magnetic resonance imaging (MRI) usually shows a sharply delineated mass in the pancreatic head showing heterogeneous enhancement which is hypo intense on fat-suppressed T1-weighted images and shows a mixture of hypo- and hyper intensity on T2-weighted images in cases of Pancreatic Tuberculosis [16]. Normal appearing common bile duct and the pancreatic duct with a centrally placed mass in the head of pancreas is an important differentiating feature from pancreatic adenocarcinoma where the pancreatic duct is dilated in centrally located tumors in the head region. The diffuse form of pancreatic tuberculosis is characterized by pancreatic enlargement with narrowing of the main pancreatic duct and heterogeneous enhancement.

Clinical and radiological features being inconclusive, histopathology is the mainstay for diagnosis. Image guided (USG or CT) biopsy, Laparoscopic or Open surgical procedure for biopsy and the EUS biopsy helps in aiding the exact diagnosis. Currently EUS biopsy is considered the 'gold standard' as diagnostic modality for pancreatic mass [6,17]. The microscopic features of tuberculosis are caseation necrosis and presence of acid-fast bacilli. Caseating granuloma is seen in 75%-100% of cases, and acid-fast bacilli are identified in 20%-40% of cases [18]. Our case also underwent an image guided FNAC which showed granulomatous lesion with occasional acid-fast bacilli. Once the diagnosis is made, antitubercular drugs should be started as early as possible. Majority of the patients show symptomatic improvement within two weeks. Because of the rarity of this disease, there are no specific treatment guidelines. The majority of cases of pancreatic tuberculosis respond well to 6-12 months of anti-tubercular therapy and their prognosis is good. In our case also ATT was given for 2 months with complete resolution of symptoms.

4 | CONCLUSION

Isolated Pancreatic Tuberculosis accounts to one of the rarest presentations even in countries with the maximum Tubercular patient load. Only a handful of cases have been reported worldwide.

Most common presentation is pain abdomen and on evaluating usually shows a mass lesion on the pancreas mimicking Malignancy. Therefore, diagnosis is a challenge, warranting a multidisciplinary approach with a non-invasive approach of diagnosis. Recent development of Endoscopic ultrasound-guided fine-needle aspiration for histological and microbiological tuberculosis diagnosis is on the rise thus avoiding major surgeries and associated comorbidities. Clinical perception of pancreatic TB may help clinicians to appropriate diagnostic studies and management; which may lead to alleviation of symptoms and possible resolution of pancreatic masses with ATT.

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