A DIAGNOSTIC PITFALL: PANCREATIC TUBERCULOSIS MASQUERADING AS PANCREATIC CARCINOMA

Hepatobiliary Surgery

Dr.Amitrajit Dasgupta*

Post Doctoral Trainee, Department of Department of Cardiothoracic and Vascular Surgery, NRS Medical College and Hospital, Kolkata, West Bengal. *Corresponding Author

Dr.Indranil Banerjee

Post Graduate, Department of Respiratory Medicine, Meenakshi Medical College Hospital & Research Institute, Kanchipuram, Tamil Nadu.

ABSTRACT

Isolated cases of Pancreatic Tuberculosis remains a rare entity even in countries with a high incidence of Tuberculosis. It presents as a hypoechoic mass on ultrasonography and imaging mimicking pancreatic malignancy. Consequently, it represents a diagnostic challenge both clinically (due to a similar array of symptoms) and radiologically. The diagnosis often requires tissue biopsy. The possibility of TB should be considered in the list of differential diagnoses of pancreatic mass and an endoscopic, ultrasound-guided biopsy might help to clinch the diagnosis of this potentially curable disease. Here, we report a case with symptoms of abdominal pain, progressive jaundice, and anorexia and weight loss, diagnosed to be a case of Disseminated Tuberculosis (Pancreatic TB) following Endoscopic Ultrasound guided FNAC of peri-pancreatic lymph nodes.

KEYWORDS

Pancreatic Tuberculosis, Pancreatic Cancer, Endoscopic Ultrasound (EUS), Magnetic Resonance Cholangio-Pancreatography (MRCP), Dilated Common Bile Duct

INTRODUCTION

In 1944, Auerbach's reported the first case of pancreatic TB ^[1]. Pancreatic tuberculosis is a rare condition in immune-competent patients and may present with protean manifestations which often makes it a diagnostic challenge for the clinician. Less than 100 cases have been reported worldwide and it is not so far known clearly how the infection can solitary affect the pancreas.^[2] The pancreas is biologically protected from being infected by Mycobacterium tuberculosis^[3] since pancreatic enzymes have been reported to have an anti-tubercular impact in vitro. The non-surgical diagnosis of this entity continues to be a challenge, as it may present as pancreatitis or may mimic cystic/mass lesion suggestive of malignancy^[4-6]. However, cases are increasingly being reported, probably due to further advancements in diagnostics. Presentation as a discrete pancreatic mass often confuses the clinician and has a high likelihood of being falsely labeled as pancreatic neoplasm.

CASE REPORT

A 38 year old monoparous female from North 24 Parganas, West Bengal presented with complaints of gradually progressive jaundice over 20 days, malaise, anorexia and abdominal pain for 1 month. There was no history of fever, nausea and vomiting. The striking feature was rapid unexplained weight loss. She had a past history of laparoscopic appendectomy 5 years back. On examination, there was icterus with dehydration associated with right hypochondriac tenderness. Gall bladder was not palpable. Liver was enlarged upto 2cm below right costal margin at the mid-clavicular line, at the height of inspiration. She was subjected to a battery of laboratory and radiological investigations given below.

Table 1: Laboratory Investigations and their results

No.	Test Name	Values
1.	Hemoglobin	11.8 g/dl
2.	Total Count	3600/mm ³
3.	Platelet Count	2.38 lakhs/mm ³
4.	ESR (1 hour)	43mm
5.	Prothrombin Time	14.5 seconds
6.	INR	1.44
7.	Serum Sodium	133 mEq/L
8.	Serum Potassium	4.0 mEq/L
9.	Serum Chloride	100 mEq/L
10.	Serum Bicarbonate	25 mEq/L
11.	Serum Bilirubin	3.6 mg/dl
12.	SGPT	399 U/L
13.	SGOT	363 U/L
14.	Alkaline Phosphatase	1366 IU/L
15.	Gamma Glutamyl Transpeptidase	429 U/L
16.	Total Proteins	8.2 g/dl

17.	Albumins	3.8 g/dl
18.	Globulins	4.4 g/dl
19.	Urea	13 mg/dl
20.	Creatinine	0.8 mg/dl
21.	HBsAg	Non-Reactive
22.	Serum CA-19-9	158.3 IU/ml
23.	Serum IgG4	3.8g/L

Figure 1: CECT Abdomen showed Hepatomegaly with fatty changes, GB sludge dilated CBD probably due to stricture.

Table 2: Radio-diagnostic investigations and their results

No.	Imaging Techniques	Impression
1.	Ultrasonography (Whole abdomen) done on 25 th May 2020	Liver mildly enlarged in size (15cm), hypoechoic parenchyma. Early central intrahepatic radical dilatation seen. Mildly dilated CBD with distal irregular narrowing. Hyper-distended gall bladder with sludge in lumen and cholesterosis.
2.	Magnetic Resonance Cholangio-Pancreatography (MRCP) done on 26 th May 2020	Smooth narrowing in distal CBD with moderate upstream biliary dilatation likely due to extrinsic compression on distal CBD caused by enlarged loco-regional nodes. Focal ill-defined T2 hyperintensities in body and tail of pancreas shows mild restricted diffusion. Enlarged pre-caval and posterosuperior pancreaticoduodenal nodes are seen larger measuring 24mm x 16mm.

3.	Contrast Enhanced CT Abdomen done on 27 th May 2020	Hepatomegaly with fatty changes. GB sludge and dilated CBD stricture related without any lymphadenopathy.
4.	Endoscopic Retrograde Cholangio-Pancreatography (ERCP) done on 6 th June 2020	Dilated CBD and Hepatic duct with no filling defect and stricture of lower end. Brush biopsy taken from stricture area. Biliary sphincterotomy was done by placing a 10Fr x 10cm plastic stent.
5.	Endoscopic Ultrasound (EUS) done on 6 th June 2020	CBD appears dilated and measuring 12.5mm with smooth distal tapering without any obvious mass lesion, retained stone, sludge. Pancreas showed multiple hypochoic lymph nodes seen in peri-pancreatic area along with suspicious ill-defined mass in head region. EUS guided FNAC taken from peri-pancreatic LN/mass. EUS guided biopsy also taken from aorto-pulmonary region of mediastinal area.

Ultrasonography showed intrahepatic biliary radicle dilatation. MRCP showed distal CBD stenosis due to extrinsic pressure by pre-caval plus pancreatico-duodenal nodes. Gall bladder was normal in size. CECT scan abdomen showed distal CBD stricture without any lymphadenopathy.

Endoscopic Ultrasound was planned as malignancy could not be ruled out. EUS was done which showed multiple large lymph nodes seen in mediastinal and peri-pancreatic area, lymph node in peri-pancreatic area causing lower CBD stricture. EUS FNAC was taken from mediastinal nodes and peri-pancreatic area. Biliary Brush cytology was sent. Endobiliary stenting was done in the same sitting to relieve jaundice. There were no post procedure complications. She tolerated liquid followed by normal diet. FNAC gave a clear cut diagnosis of Tuberculosis. Malignancy was ruled out.

Figure 2: Endoscopic Retrograde Cholangio-Pancreatography (ERCP): Duodenal ampulla normal in appearance with dilated CBD and hepatic duct with no filling defect and stricture of lower end. Biliary brush biopsy was taken from stricture area. Biliary sphincterotomy was done with a 10Fr x 10cm plastic stent.

Table 3: Histo-pathological Examination of Tissue Biopsy and their results

No.	Histopathology Specimen	Results
1.	EUS guided Biopsy from Mediastinal LN	Fibro-collagenous tissue with coalescing and caseating epithelioid cell granulomas, consistent with Tuberculosis. ZN Stain negative for AFB.
2.	EUS FNAC from Pancreatic area	Smear showed epithelioid granulomata, Langhan's giant cells, caseous necrosis and chronic inflammatory cells, consistent with Tuberculosis.
3.	Biliary Brush Biopsy Cytology	Smears are pauci-cellular and show occasional benign biliary epithelial cells. No malignant cells seen.

Figure 3: EUS showed Peri-pancreatic lymph node/ pancreatic mass with mediastinal lymphadenopathy.

A diagnosis of Pancreatic Tuberculosis (Disseminated Tuberculosis) was made and the patient was advised a repeat LFT after 15 and 30 days. Stent was to be removed after 2 months. ATT was started after 5 days when SGOT/SGPT came down to normal. The patient is presently on follow up.

DISCUSSION

TB caused by *Mycobacterium tuberculosis* is an endemic infectious disease in the developing world, with an estimated 9.7 million cases reported annually^[7]. Although the lung is most commonly affected, in immune-competent hosts extra-pulmonary TB accounts for one-fifth of cases^[8]. Patients with abdominal tuberculosis may have many symptoms which may mimic any disease. Therefore, if it is not clinically suspected, it may result in important morbidity and mortality and a high index of suspicion is required, especially in the high-risk population. In a study by Cho^[4], the most common anatomic locations for pancreatic tuberculosis were the head (72.7%) followed by the tail (18.2%), and body (9.1%). Pancreatic involvement is reported in less than 5% of cases and it often occurs in the setting of disseminated TB and immunodeficiency states^[9,10]. Isolated pancreatic TB is still rare, with only a handful of cases reported to date^[12]. Pancreatic tuberculosis is a rare form of extra-pulmonary tuberculosis. Patients with pancreatic tuberculosis may have nonspecific symptoms like abdominal pain, weight loss, weakness, or fever. On computed tomography imaging, pancreatic tuberculosis can mimic pancreatic carcinoma. The manifestation of pancreatic tuberculosis can present as an abscess or cystic mass. Abdominal imaging had revealed a lesion in the pancreatic head with cytology consistent with TB. AFB staining was negative; however according to Farar et al., nearly 40% of patients with abdominal TB can have negative AFB staining^[11]. Pancreatic TB can occur as a result of haematogenous or lymphatic dissemination or

direct spread from adjacent organs. The uncommon occurrence of Pancreatic TB is probably due to the presence of pancreatic enzymes, which interfere with the seeding of *Mycobacterium tuberculosis*. Pancreatic secretions have been reported to have anti tubercular effect in vitro, suggesting a potential protective mechanism for the rare pancreatic involvement with TB^[12]. The relatively low yield of EUS biopsy might have caused the negative staining. EUS is more sensitive in differentiating malignant and nonmalignant pancreatic lesions when compared with computed tomography. The treatment of Pancreatic Tuberculosis comprises multi-drug anti-tuberculous chemotherapy for 6-12 months. Response to therapy is predictable and complete. These patients still need to be followed up carefully for subjective and objective response to therapy to rule out the rare possibility of Tuberculosis co-existing with malignancy, especially in endemic areas.^[13,14]

CONCLUSION

Intra-abdominal tuberculosis may originate in the small gut, pancreas or kidney and may present with gut stricture, haematuria, loss of weight and occasionally obstructive jaundice. Tuberculosis should always be a part of the differential diagnosis in cases of intestinal obstruction, mesenteric adenopathy and obstructive jaundice. ATT produces rapid improvement and patients recover in most cases.

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