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PANCREATIC TUBERCULOSIS: A RARE DIAGNOSIS BY ENDOSCOPIC ULTRASOUND GUIDED FNAC

Respiratory Medicine

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ABSTRACT

Introducation: Tuberculosis remains a threat to global public health and is the top infectious cause of death globally. The burden of extrapulmonary tuberculosis (EPTB) is high, ranging from 15-20% of all TB cases in HIV negative patients while in HIV positive people, it account for 40-50% of new TB cases. Abdominal TB cases makes up about 3 % of all EPTB cases in India. In abdominal tuberculosis, Ileocaecal region is most commonly affected; solid organs like kidney, spleen and liver get involved with Tuberculosis much more commonly than the pancreas. Pancreatic tuberculosis is very rare even in regions with high prevalence of tuberculosis. Pancreatic tuberculosis most commonly afflicts the region of the head and the uncinate process of the pancreas. It is often misdiagnosed due to low index of suspicion and masquerading of its symptoms as pancreatic malignancy.

Case Presentation: A 67 years old male presented to the physician with a history of pain abdomen in umbilical region. Ultrasound whole abdomen demonstrated mildly bulky pancreas with ill defined hypoechoic lesion in the body region. Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) of the lesion was performed and cytology revealed numerous acid fast bacilli with necrotic material in background of red blood cells. Abdominal computed tomography (CT) scan was done which was suggestive of well- defined non enhancing multiloculated lesions of body of pancreas with evidence of necrotic lymph node in pre and left para-aortic region. Antitubercular treatment was started accordingly.

Conclusion: Pancreatic tuberculosis may present as pancreatic abscess, pancreatitis,or acystic or solid pancreatic mass. The use of EUS-FNA has become essential tool in the evaluation of pancreatic lesion.

KEYWORDS

Anti tuberculosis therapy, Endoscopic ultrasound, Pancreas

INTRODUCTION:

Tuberculosis (TB) remains a threat to global public health and is the top infectious cause of death globally[7]. In 2018, an estimated 10 million (range, 9.0-11.1 million) people developed TB. There were an estimated 1.2 million (range,1.1-1.3 million) TB death in HIV negative people in 2018 and additional 251000 (range,223000-281000) death among HIV positive people[1]. Among all TB cases, 8.6% were people living with HIV (PLHIV)[7]. Although TB usually involves lungs, extrapulmonary TB (EPTB) accounts for nearly 10-30% of all cases of TB in immunocompetent hosts. Tuberculosis (TB) remains a threat to global public health and is the top infectious cause of death globally. Abdominal TB cases makes up about 3% of all extrapulmonary tuberculosis (EPTB) cases in India. In abdominal tuberculosis, Ileo-caecal region is most commonly affected. Pancreatic tuberculosis is very rare even in regions with high prevalence of tuberculosis. Patients of pancreatic tuberculosis may remains asymptomatic initially and manifest as an abscess or a mass involving local lymphnodes and usually presents with nonspecific features. Pancreatic tuberculosis most commonly affects the region of the head and the uncinate process of the pancreas. Till date only 330 cases have been described in medical literature. In most of the cases, it mimics pancreatic carcinoma.

CASE REPORT:

A 67-year-old male presented to the physician with a history of pain in umbilical region. The patient denied weight loss, but did complain of low-grade fever and chills. His past medical history was unremarkable. On physical examination, he was noted to be afebrile and his other vital signs were normal findings. There were no significant findings on examination of his lungs, heart, or abdomen. His laboratory studies values were as follows: white blood cell count 6.7/mm^3, hemoglobin 10.6 g/dL. His serum amylase and lipase level were normal. His other studies including serum chemistries, liver function tests, and blood cultures were non-revealing. Gastrointestinal tumor markers Carbohydrate Antigen 19-9 (CA19-9) and carcino- embryonic antigen (CEA) were both within normal limits. His chest radiograph was normal. On abdominal computed tomography (CT) scan demonstrated a 3.3 cm × 1.7 cm multi-loculated lesion in the body of the pancreas for a primary malignancy along with several enlarged lymphnodes in the peripancreatic region (Fig-1).Basal parts of lung fields shows multiple ground glass density nodules arranged in tree in bud pattern s/o active endobronchial infection , likely to be milliary tuberculosis. An ultrasound abdomen was performed which revealed a 1.7 cm × 1.1cm ill□defined hypoechoic lesion in body of pancreas. An Endoscopic ultrasonography (EUS)□guided fine needle aspiration (EUS□FNA) of the lesion was performed with 25-G needle. Cytology from the mass revealed necrotizing granulomatous inflammation with numerous acid fast bacilli with necrotic material in background of Red blood cells (Fig-2). He was given Ethambutol, Isoniazid, Pyrizinamide and Rifampicin.

Fig-1: CT whole abdomen showing 3.3cm ×1.7cm multi-loculated lesion in the body of the pancreas for a primary malignancy along with several enlarged lymphnodes in the peripancreatic region.

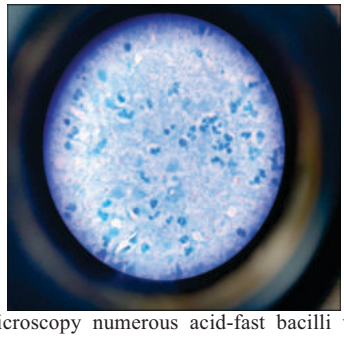

Fig-2: On microscopy numerous acid-fast bacilli with necrotic material in background of Red blood cells.

DISCUSSION:

Tuberculosis is very prevalent in the developing areas of Asia and Africa, especially in India [1]. Abdominal tuberculosis is the most common extra pulmonary manifestation of the disease [1]. Pancreatic tuberculosis was first described by Auerbach in 1944 [2]. A study conducted by Nagar et al showed that among patients with abdominal tuberculosis in India, 8.3% had pancreatic involvement [3]. Pancreatic tuberculosis is a rare entity. As such, there are no studies to show its incidence, but it is uncommon even in the developing world where Tuberculosis is rampant [4].

Pancreatic tuberculosis most commonly involves the head and uncinate process of the pancreas [5]. It presents as vague and non-specific symptoms, with apparently normal examination findings [4]. Most common presenting symptoms include abdominal pain, jaundice, vomiting, anorexia and weight loss [6]. There may be palpable liver, gallbladder or abdominal mass [6]. Pancreatic tuberculosis may also present with peri-pancreatic lymphadenitis [1]. The disease is an enigma for doctors as it mimics other dis-orders of the pancreas, most importantly Pancreatic malignancy. Abdominal lymphadenitis can also present similarly and mimic it [1].

Endoscopic Ultrasound (EUS), Fine Needle Aspiration Cytology (FNAC), Contrast Enhanced CT (CECT) and Laporotomy are the modalities used in the diagnosis. It has conspicuous radiological findings which resembles malignancy of the pancreas, due to which many cases have only been diagnosed on histopathological analysis of the pancreatic specimen after resection [5]

Fig-3: Indexed Cases Of Pancreatic Tuberculosis And Their Important Features

Case	Age/Sex	Presentation	Investigation and findings	Diagnosis/Treatment/Outcome
Yamada et al., [8]	57/M	Weight loss	CT- Pancreatic head mass with CBD stenosis EUS-FNAC- Granulomas with caseous necrosis Quantiferon gold assay positive	Pancreatic tuberculosis/ATT/Treated successfully
Choudhary et al., [9]	20/F	Weight loss	CT- Mass probably from head of pancreas EUS- Mass near duodenal bulb compressing CBD. Pancreas and pancreatic duct normal FNAC- Granulomas with caseous necrosis. Acid fast bacilli visualised.	Tubercular lymphadenopathy/ATT/Treated successfully
Waintraub et al., [10]	31/M	Fever, epigastric pain	MRI- Periportal lymphadenopathy indenting pancreatic head and uncinate process and compressing CBD CA 19 19, CA 125 negative EUS- irregular, hypoechoic mass with poorly defined borders in the pancreatic head. Anechoic lesion in the pancreatic tail, suggestive of a cyst or pseudocyst. FNAC- Granulomas with caseous necrosis and Acid fast bacilli in head mass but not in cyst	Pancreatic tuberculosis/ATT/Treated successfully
Rana SS [11]	42/F	Abdominal pain, weight loss	CECT- Pancreatic head mass with enhancing nodule EUS- Mass in head of pancreas, Subcarinal lympadenopathy FNAC- noncaseating necrosis and epithelioid granulomas in both pancreas and lymph node	Pancreatic tuberculosis/ATT/Treated successfully
YaminiCitra et al., [12]	22/M	Abdominal pain, weight loss	CECT- Pancreatic head mass, peripancreatic and periportal lymphadenopathy EUS- Mass in head of pancreas with multiple peripancreatic nodes FNAC- noncaseating necrosis with langhans giant cell in pancreas, mesocolic tissue and lymph node.	Pancreatic tuberculosis/ATT/Treated successfully
Yadav AK [13]	24/F	Abdominal pain, Jaundice, weight loss	Volume Perfusion Computed Tomography (VPCT) - Hypodense mass lesion in pancreatic head and uncinate process abutting the superior mesenteric vein. Perfusion parameters reduced compared to normal parts of pancreas. On-table frozen section- multiple necrotizing epitheloid cell granulomas with lymphocytic infiltration and destruction of pancreatic acini.	Pancreatic tuberculosis/Roun-en-Y hepaticojejunostomy and ATT/Treated successfully
Yadav AK [13]	35/M	Abdominal pain, anorexia, weight loss	CECT - Multiple hypodense lesions encasing the celiac axis and its branches in the pancreatic body region. VPCT- Perfusion parameters of the pancreatic lesions significantly reduced compared to the normal pancreas. FNAC- necrotizing epitheloid cell granulomas with lymphocytic infiltration.	Pancreatic tuberculosis/ATT/Treated successfully
Chavadi et al., [14]	39/M	Epigastric pain, fever	CT- Cystic lesion in the pancreas. Splenic artery was noted within the lesion. Multiple peripancreatic and retroperitoneal lymph nodes. CT guided aspiration- microscopy of pus showed AFB	Pancreatic tuberculosis/ATT/Treated successfully
George SZ et al., [15]	60/M	Epigastric pain, weight loss	CECT- Pancreatic head mass encasing portal vein EUS- Necrotic pancreatic head mass FNAC- multiple granulomas, epitheloid cells and occasional multinucleated giant cells with acid fast bacilli. Mantoux Positive	Pancreatic tuberculosis/ATT/Treated successfully
Ebrahimian R et al., [16]	52/M	Epigastric pain, weight loss	CT- Pancreatic head mass Intra op frozen section- Granuloma seen	Pancreatic tuberculosis/ATT/Treated successfully

CONCLUSION:

Pancreatic TB should be suspected in patients with solid pancreatic lesions, especially if the patient is immunocompromised or from an endemic area. When the diagnosis is suspected, appropriate screening and EUS-FNA of the pancreatic lesion can lead to diagnostic confirmation of the disease and avoid unnecessary explorative laparotomy or pancreatic resection.

Pancreatic TB may pres ent as pancreatic abscess, pancreatitis or a cystic or solid pancreatic mass. Despite the rarity of this condition, one must consider it in the di-erential diagnosis of a solid pancreatic lesion since it can mimic pancreatic cancer. The use of EUS-FNA has become an essential tool in the evaluation of a pancreatic l e s i o n.

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REFERENCES:

1. Shabnam S, Mohammad BM, Mohammad TS, Amir HMA. Pancreatic Tuberculosis: An Overview. JOP. *J Pancreas (Online)* 2015;16(3):232–38.
2. Auerbach O. Acute Generalized Miliary Tuberculosis. *Am J Pathol.* 1944;20:121–36.
3. Nagar AM, Raut AA, Morani AC, Sanghvi DA, Desai CS, Thapar VB. Pancreatic tuberculosis: a clinical and imaging review of 32 cases. *J Comput Assist Tomogr.* 2009;33:136–41.
4. Pramesh CS, Heroor AA, Gupta SG, Krishnamurthy S, Shukla PJ, Jagannath P, et al. Pancreatic tuberculosis: an elusive diagnosis. *HPB (Oxford)* 2003;5(1):43–45.
5. Surinder SR, Vishal S, Sathosh S, Ravi S, Bhagwant RM, Deepak KB. Vascular invasion does not discriminate between pancreatic tuberculosis and pancreatic malignancy: a case series. *Ann Gastroenterol.* 2014;27(4):395–98.
6. Sundeep SS, Sukanta R, Sujoy P, Manu K, Deep NS, Peush S, et al. Hepatobiliary and pancreatic tuberculosis: A two decade experience. *BMC Surgery.* 2007;7:10.
7. World Health Organization. Global Tuberculosis Report 2019, Geneva. Accessible from: https://www.who.int/tb/publications/global_report/en/
8. Yamada R, Inoue H, Yoshizawa N, Kitade T, Tano S, Sakuno T, et al. Peripancreatic Tuberculous Lymphadenitis with Biliary Obstruction Diagnosed by Endoscopic Ultrasound-guided Fine-needle Aspiration Biopsy. *Intern Med.* 2016;55(8):919–23.
9. Choudhary NS, Guleria M, Puri R, Sud R. Tubercular lymph nodal mass mimicking pancreatic malignancy with extrahepatic biliary obstruction in a young woman. *Endoscopy.* 2015;47(Suppl 1): UCTN:E53–54.
10. Waintraub DJ, D'Souza LS, Madrigal E, Harshan M, Ascunce GI. A Rare Case of Isolated Pancreatic Tuberculosis. *ACG Case Rep J.* 2016;3(4):e91.
11. Rana SS, Gupta R, Ranjan R, Srinivasan R, Bhasin DK. Pancreatic tuberculosis mimicking cystic tumor of pancreas. *J Dig Endosc.* 2016;7:30–32.
12. Yamini Chitra V, Paramesh KN. An unusual cause of pancreatic head mass: Primary pancreatic tuberculosis. *Edorium J Gastroenterol.* 2015;2:7–12.
13. Yadav AK, Nadarajah J, Kandasamy D, Sharma R, Gamanagatti S, Garg PK. Volume perfusion computed tomography as an aid to diagnosis of pancreatic tuberculosis. *Tropical Gastroenterology.* 2014;35(4):264–66.
14. Chavadi CV, Kory S, Rao P, Mahale A. Pancreatic tuberculous abscess mimicking as cystic neoplasm: A rare initial manifestation of AIDS-defining illness. *J HIV Hum Reprod.* 2015;3:20–22.
15. George SZ, Rajany A, Sandesh K, Thazhath MR. Isolated pancreatic tuberculosis masquerading as pancreatic cancer. *Gastroenterol Rep.* 2014;2(2):154–57.
16. Ebrahimian R, Tasa D. A patient with isolated pancreatic tuberculosis: Case report. *Tehran University Medical Journal.* 2015;73(6):462–67.