Tuberculosis of Pancreas, the First Case Reported from Qatar

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Abstract

Despite the high prevalence of tuberculosis (TB) in developing countries, primary pancreatic TB is a rare entity. We present a case of pancreatic TB in an immunocompetent patient who was found to have pancreatic mass resembling malignancy. A 40-year-old Indian male presented to the medical emergency room with complaints of abdominal pain and fever for 2 weeks' duration. He had a history of unintentional weight loss of about 20 pounds in the past 2 months. There was no significant history of exposure to TB patient. Family history was unremarkable for any malignancy. On examination, the significant finding was epigastric tenderness. He was thoroughly investigated, his purified protein derivative and QuantiFERON were negative. Chest X-ray was unremarkable. Computed tomography scan abdomen was performed that revealed large heterogeneous necrotic mass in the lesser sac likely arising from pancreatic body with possible infiltration of the stomach, left lobe of the liver and encasing celiac vessels and portal vein with multiple peripancreatic and retroperitoneal necrotic lymph nodes. Endoscopic ultrasound with fine-needle aspiration of pancreatic mass was done, biopsy specimen revealed the presence of inflammation with no evidence of malignancy. TB polymerase chain reaction and culture came positive for Mycobacterium tuberculosis. He was started on antituberculosis treatment with isoniazid, rifampicin, pyrazinamide, and ethambutol with a plan to continue for total 6 months. However, follow-up of the patient could not be done as he traveled back to his home country.

Keywords: Endoscopic ultrasound, pancreas, tuberculosis

INTRODUCTION

Despite the high prevalence of tuberculosis (TB) in developing countries, primary pancreatic TB is a rare entity. TB in pancreas may present as acute or chronic pancreatitis, pancreatic abscesses, and as discrete pancreatic mass mimicking malignancy, thus making it a diagnostic challenge.[1]

We present a case of pancreatic TB in an immunocompetent patient with a mass resemble malignancy and negative quantiferone test.

CASE REPORT

A 40-year-old Indian male presented a complaint of abdominal pain and fever for 2 weeks. He also had 20-pound unintentional weight loss over the past 2 months. He denied any other complaint. No history of TB and denied the use of any medications. Family history was noncontributory including the absence of malignancy or TB.

Ethical approval

The study was approved by the Institutional Review Board at Hamad Medical Corporation.

Physical examination was remarkable for mild midepigastric tenderness without guarding or rigidity. Liver transaminases and total bilirubin were within normal range; however, there was an increased alkaline phosphatase noted to be 173 U/L. His purified protein derivative and quantiferone were negative. His CA19-9 was negative. Chest X-ray performed was negative for any cardiopulmonary process, and lung fields were clear. His abdominal ultrasound shows heterogeneous large predominantly solid lesion encasing the celiac vessels likely originating from the pancreatic head/duodenum raising the possibility of malignant. Computed tomography (CT) of the abdomen performed revealed large heterogeneous necrotic mass in the lesser sac likely arising from the pancreatic body with loss of...
fat planes and possible infiltration of stomach, left lobe of the liver and encasing coeliac vessels, and portal vein. It also shows multiple peripancreatic and retroperitoneal lymph nodes [Figure 1].

Endoscopic ultrasound (EUS) with fine needle aspiration of the pancreatic head mass was performed [Figure 2]. Sonographically, there was a 3 cm × 3 cm necrotic mass within the pancreas body with multiple small and large peripancreatic lymph nodes. On-site cytologic and histopathologic evaluation of the biopsy specimen revealed the presence of inflammation with no evidence of malignancy. Polymerase chain reaction (PCR) and culture for acid-fast bacilli were positive for Mycobacterium tuberculosis (MTB).

Given the diagnosis of pancreatic TB, testing for human immunodeficiency virus was negative. The patient was started on antituberculosis therapy with isoniazid, rifampin, pyrazinamide, and ethambutol. The patient traveled back to his country planning to complete the treatment course for 6 month. Given the diagnosis of pancreatic TB, testing for human immunodeficiency virus was negative. The patient was started on antituberculosis therapy with isoniazid, rifampin, pyrazinamide, and ethambutol. The patient traveled back to his country planning to complete the treatment course for 6 month.

**DISCUSSION**

MTB is an intracellular pathogen that can live in the dormant state in the living tissues without causing clinical manifestations. It becomes active when body immunity decreases. TB is an important health problem, in Qatar, the trend of extrapulmonary TB is increasing with 53.6% of cases in 2008 while only 29% of cases in 2005 abdominal TB was representing 7.5%.

Abdominal TB is one of the common presentations of extrapulmonary tuberculosis. It can affect gastrointestinal tract, lymph nodes, other abdominal solid organs, peritoneum, and omentum. Presenting symptoms vary according to the site involved. Patients might present with symptoms of intestinal obstruction or acute abdomen as well.

Pancreatic TB is a rare entity because the pancreas is biologically protected from MTB infection due to pancreatic enzymes. Thus, most of the cases are secondary to contagious infection from peripancreatic lymph nodes or rarely from hematogenous spread. It poses a clinical dilemma. Clinically and radiologically, it may mimic a pancreatic malignancy. The common presenting features are nonspecific abdominal pain, fever, anorexia and weight loss. Since clinical and radiological features are nonspecific, histology is required for diagnosis. Which can be done through either percutaneous ultrasonography, CT guided biopsy, open/laparoscopic biopsy, or endoscopic ultrasound (EUS). Currently, EUS biopsy is considered the “gold standard” for diagnostic modality for pancreatic mass. Biopsy cytology in pancreatic TB shows granulomatus inflammation, epitheloid histiocytes, plasma cells, and lymphocytes, while acid-fast bacilli are rarely seen. A positive MTB culture or PCR is highly specific but is less sensitive. Once diagnosed, pancreatic TB is treated with standard anti-TB medication for at least 6 month’s duration. Symptomatic response and repeat abdominal imaging need it for assessment of response and duration of therapy.

Our patient was diagnosed by EUS-guided biopsy showing granulomatous granuloma and positive PCR from TB culture within 2 weeks rifampicin sensitive sand later final culture sensitivity came as fully sensitive MTB. The patient was started on first-line anti-TB medication, and he left back to his home country. Since we do not have a link with the health authorities in his country to follow-up, the patient we cannot determine the final treatment duration.

**CONCLUSION**

Pancreatic TB is rare disease; however, it should be kept in the differential diagnosis of patient with pancreatic mass, especially people from the endemic area. Clinical suspension of pancreatic TB may guide clinicians to appropriate diagnostic studies including US and management with antituberculosis therapy.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have
given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

REFERENCES
1. Raghavan P, Rajan D. Isolated pancreatic tuberculosis mimicking malignancy in an immunocompetent host. Case Rep Med 2012;2012:501246.
2. Stanford J, Stanford C. Mycobacteria and their world. Int J Mycobacteriol 2012;1:3-12.
3. Abu Khattab M, Khan FY, Al Maslamani M, Al-Khal AL, El Gendy A, Al Soub H. Pulmonary and extra pulmonary tuberculosis in Qatar: A first retrospective population-based study. Adv Infect Dis 2015;5:148-53.
4. Al Marri M, Al Hail L, Al Otaibi S, Al Marri ND. The time of reactivation of tuberculosis in expatriates in the state of Qatar. Qatar Med J 2006;15:21-3.
5. Sharma SK, Solanki R, Mohan A, Jain NK, Chauhan LS; Pleural Effusion Study Group, et al. Outcomes of category III DOTS treatment in immunocompetent patients with tuberculosis pleural effusion. Int J Tuberc Lung Dis 2012;16:1505-9.
6. Saboori K, Khosravi MH, Pirmohammad H, Afrasiabi S, Moghbel N, Shahverdi E, et al. Tuberculosis peritonitis with features of acute abdomen in HIV infection. Int J Mycobacteriol 2015;4:151-3.
7. Franco-Paredes C, Leonard M, Jurado R, Blumberg HM, Smith RM. Tuberculosis of the pancreas: Report of two cases and review of the literature. Am J Med Sci 2002;323:54-8.
8. Ladas SD, Vaidakis E, Lariou C, Anastasiou K, Chalevelakis G, Kintzonidis D, et al. Pancreatic tuberculosis in non-immunocompromised patients: Reports of two cases, and a literature review. Eur J Gastroenterol Hepatol 1998;10:973-6.
9. Lo SF, Atehong AK, Tang CN, Yip AW. Pancreatic tuberculosis: Case reports and review of the literature. J R Coll Surg Edinb 1998;43:65-8.
10. Brusko G, Melvin WS, Fromkes JJ, Ellison EC. Pancreatic tuberculosis. Am Surg 1995;61:513-5.
11. Jena GP, Manoharan GR, Mbete DL, Pillay SS. Tuberculous pancreatic abscess in HIV-positive patients. A report of 3 cases and a review of the literature. S Afr J Surg 1999;37:69-71.
12. Veerabadran P, Sasnur P, Subramanian S, Marappagounder S. Pancreatic tuberculosis-abdominal tuberculosis presenting as pancreatic abscesses and colonic perforation. World J Gastroenterol 2007;13:478-9.
13. Kaushik N, Schoedel K, McGrath K. Isolated pancreatic tuberculosis diagnosed by endoscopic ultrasound-guided fine needle aspiration: A case report. JOP 2006;7:205-10.
14. Rao RN, Pandey R, Rana MK, Rai P, Gupta A. Pancreatic and peripancreatic tuberculosis presenting as hypoechoic mass and malignancy diagnosed by ultrasound-guided fine-needle aspiration cytology. J Cytol 2013;30:130-5.