

Case Report

Isolated Pancreatic Tuberculosis in an Immunocompetent Host: A New Case Report and Literature Review

Sofia. Oubaha¹, Yomna Dannouni^{2*}, Sara Boulajaad², Imane Elhidaoui², Adil Ait Errami², Zouhour Samlani², Khadija Krati²¹Laboratory of physiology, Cadi Ayyad University Faculty of Medicine and Pharmacy of Marrakech, Morocco²Gastroenterology Departments, Mohamed VI University Hospital, Marrakech, Morocco

*Corresponding Author

Yomna Dannouni

Abstract: Pancreatic tuberculosis is a challenging diagnosis to its rarity. Its presenting features are usually non-specific. It can appear as a focal lesion mimicking pancreatic carcinoma in many cases and pancreatitis in others. Endoscopic ultrasound-guided fine needle aspiration or biopsy may provide a tool for diagnosing a pancreatic lesion. However, microbiological confirmation may not always be possible and laparotomy may be required. We report a case of a young Moroccan male presented with weight loss and chronic abdominal pain. Computed tomogram scan revealed a duodeno-pancreatic lesion and peripancreatic lymph nodes. The diagnosis was confirmed by laparotomy. He responded to antituberculous chemotherapy.

Keywords: Pancreas, Tuberculosis, Pancreatic carcinoma, antituberculous chemotherapy, Immunocompetent.

INTRODUCTION:

Tuberculosis is a serious health problem worldwide. It is a multi-systemic bacterial infection caused by different strains of mycobacteria, usually *Mycobacterium tuberculosis* (Cherian, J. V. *et al.*, 2007). Highest incidence being in most Sub-Saharan African countries, South America, Eastern Europe and Asia. It occurs in nearly 9.7 million people each year worldwide (Floyd, K., & Pantoja, A. 2008). Tuberculosis is a potentially systemic disease that can affect any organ. In abdominal tuberculosis, ileocaecal region is most commonly affected, solid organs get involved with tuberculosis (Yokoyama, T. *et al.*, 1999). Isolated primary pancreatic and peripancreatic tuberculosis is rare even in endemic areas. It presents with a wide spectrum of symptoms and mimics a number of other diseases. The diagnosis of tuberculosis must be kept in mind especially when dealing with pancreatic masses. Being a curable disease, every effort should be made to arrive at an early diagnosis.

CASE PRESENTATION:

Our patient is a 17-year-old Moroccan male presented with generalized weakness, decreased appetite, weight loss and upper abdominal pain of 6 months' duration radiating to the back. He had no past history of pulmonary tuberculosis and family history was significant for diabetes. Clinical examination was unremarkable: there were no lymph nodes in the neck and there was no palpable abdominal lump or ascites. Haematological investigations, renal and liver function tests were normal. He was HIV negative. Abdominal CT revealed a narrowing of the 2nd duodenum. The common bile duct was dilated at 11 mm. A 2.2 x 1.6-cm ill-defined soft tissue mass in the pancreaticoduodenal groove between the descending duodenum and the pancreatic head was described, associated with local enlarged calcified lymph nodes peripancreatic region while the rest of the abdomen showed no obvious pathology: there were no tubercles in the peritoneum and the small and large bowel appeared normal (Figure 1).

Quick Response Code



Journal homepage:

<http://www.easpublisher.com/easims/>

Article History

Received: 14.07.2019

Accepted: 25.08.2019

Published: 04.09.2019

Copyright © 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.



Figure 1: Abdominal CT shows an ill-defined soft tissue mass in the pancreaticoduodenal groove.

The esophagogastroduodenoscopy showed reflux esophagitis with retained food and delayed gastric emptying with obstruction at the postbulbar duodenum. Barium meal and follow through showed a narrowing in the postbulbar duodenum region (figure 2). There was a high suspicion of pancreatic carcinoma. Tumor markers CA 19-9, CEA and AFP were normal. Quantiferon gold came back positive and the lymph nodule biopsy showed necrotizing granular inflammation of tuberculous etiology. Postoperatively the patient was started on anti-tuberculous therapy which he tolerated well.



Figure 2: Barium tests show a narrowing in the postbulbar duodenum region.

DISCUSSION:

Tuberculosis is one of the most important infectious diseases in the world; it's a systemic disease with protean manifestations. The gastrointestinal tract is the 6th most common site of extrapulmonary involvement for tuberculosis (Sharma, M. P., & Bhatia, V. 2004). Isolated primary pancreatic TB is very rare even in endemic areas. Because of its rarity, the pathogenesis of pancreatic/peripancreatic involvement of TB is not yet clear how the infection can only affect the pancreas. This low frequency may be due to retroperitoneal location of pancreas and pancreatic enzyme that appear to confer resistance to invasion of

Mycobacterium tuberculosis (Knowles, K. F. *et al.*, 1990; Franco-Paredes, C. *et al.*, 2002; & Porter, A.E. 1917). literature review was undertaken in PUBMED using the terms “pancreas” in combination with “tuberculosis” including literature from English and other languages; a total of 67 cases have been identified in various case reports.

The common presenting features are non-specific; abdominal pain localized to epigastric region is the most common symptom, other includes weight loss, anorexia and night sweats (Fan, S. T. *et al.*, 1986). Less common symptoms include: cases of obstructive jaundice (Chen, C. H. *et al.*, 1999; Pandya, G. *et al.*, 2007), acute/ chronic pancreatitis (Rana, S. S. *et al.*, 2010) and upper gastrointestinal haemorrhage due to secondary splenic vein thrombosis (Fan, S. T. *et al.*, 1986). Patient may had or no other forms of tuberculosis in the past. Most common location of mass in pancreatic tuberculosis is in the head, as in our case, followed by body however, occasionally isolated involvement of the pancreatic tail has also been described (Rao, R. N. *et al.*, 2013).

The vague symptomatology and lack of clinical findings therefore make clinical diagnosis of pancreatic tuberculosis virtually impossible. Many imaging methods like transcutaneous ultra-sound, CT scan, MRI and endoscopic ultrasound are used to assess pancreatic pathology. Ultra-sound scan is a simple, non-invasive and available that is usually used as an initial diagnostic tool. It may reveal a diffusely enlarged pancreas with focal hypoechoic lesions or cystic lesions of the pancreas. CT scan is used to rule out associated pathologies and to plan for disease management. It is the investigation of choice for pathologies of pancreas because of its high sensitivity. CT scan findings include hypodense lesions and irregular borders usually in the head of the pancreas, diffuse enlargement of the pancreas or enlarged peripancreatic lymph nodes (Takhtani, D. *et al.*, 1996). On MRI, T1 weighted fat suppressed images; pancreatic tuberculosis lesion appears hypointense, whereas on T2 weighted images it shows heterogeneous signal intensities (De Backer, A. I. *et al.*, 2005).

Diagnosing pancreatic tuberculosis is challenging due to its nonspecific clinical or radiological features. Cytological or histopathological as well as bacteriological confirmation is necessary for the diagnosis. Ultra-sound, endoscopic ultrasound or CT-guided fine needle aspiration cytology (FNAC) may provide the diagnosis, especially with the help of an expert cytologist experienced in the diagnosis of tuberculosis. FNAC is the easiest and non-invasive method of diagnosing pancreatic tuberculosis (Chatterji, S. *et al.*, 2012). American joint commission on cancer recommends EUS-FNAC as the diagnostic modality of choice for identifying the etiology of pancreatic masses (Kaushik, N. *et al.*, 2006). This investigation can avoid

an unnecessary laparotomy. However, the best way of diagnosing tuberculosis is direct histopathological proof by taking excisional biopsy. Direct histopathological examination by laparotomy should only be done in cases imaging and FNAC fail to confirm diagnosis (Saluja, S. S. *et al.*, 2007).

Pancreatic tuberculosis is usually difficult to diagnose, but once diagnosed, it is potentially curable with antituberculous drugs. Directly observed therapy multidrugs anti-tuberculous chemotherapy, is usually effective (Jaber, B., & Gleckman, R. 1995). Reported literature recommends the use of antituberculous drugs for 6 -12 months (Nagar, A. M. *et al.*, 2009; Xia, F. *et al.*, 2003). The treatment consists of fourfold combination: isoniazid (5mg/kg/day), rifampicin (10mg/kg/day), pyrazinamide (30mg/kg/day), ethambutol (20mg/kg/day) generally for 2 months, subsequently isoniazid and rifampicin for 6-12 months. Invasive treatments such as surgery and drainage of fluid are not necessary most of the times (Meesiri, S. 2012).

CONCLUSION:

Tuberculosis should be considered in the differential diagnosis of an obscure pancreatic mass, and the condition is readily curable.

REFERENCES

- Cherian, J. V., Somasundaram, A., Ponnusamy, R. P., & Venkataraman, J. (2007). Peripancreatic tuberculous lymphadenopathy. An impostor posing diagnostic difficulty. *JOP*, 8(3), 326-9.
- Floyd, K., & Pantoja, A. (2008). Financial resources required for tuberculosis control to achieve global targets set for 2015. *Bull World Health Organ*. 86, 568-76.
- Yokoyama, T., Miyagawa, S., Noike, T., Shimada, R., & Kawasaki, S. (1999). Isolated pancreatic tuberculosis. *Hepato-gastroenterology*, 46(27), 2011-2014.
- Sharma, M. P., & Bhatia, V. (2004). "Abdominal tuberculosis," *Indian Journal of Medical Research*, 120 (4), pp. 305-315.
- Knowles, K. F., Saltman, D., Robson, H. G., & Lalonde, R. (1990). Tuberculous pancreatitis. *Tubercle*, 71(1), 65-68.
- Franco-Paredes, C., Leonard, M., Jurado, R., Blumberg, H. M., & Smith, R. M. (2002). Tuberculosis of the pancreas: report of two cases and review of the literature. *The American journal of the medical sciences*, 323(1), 54-58.
- Porter AE The Bacteriolytic Action of Gland Extracts on Tubercle Bacilli. *J Hyg (Lond)* 1917 ; 16 :55-65.
- Fan, S. T., Yan, K. W., Lau, W. Y., & Wong, K. K. (1986). Tuberculosis of the pancreas: a rare cause of massive gastrointestinal bleeding. *British journal of surgery*, 73(5), 373-373.
- Chen, C. H., Yang, C. C., Yeh, Y. H., Yang, J. C., & Chou, D. A. (1999). Pancreatic tuberculosis with obstructive jaundice—a case report. *The American journal of gastroenterology*, 94(9), 2534.
- Pandya, G., Dixit, R., Shelat, V., Dixit, K., Shah, N., & Shah, K. (2007). Obstructive jaundice: a manifestation of pancreatic tuberculosis. *Journal of the Indian Medical Association*, 105(3), 133-4.
- Rana, S. S., Bhasin, D. K., Rao, C., & Singh, K. (2010). Isolated pancreatic tuberculosis mimicking focal pancreatitis and causing segmental portal hypertension. *JOP. Journal of the Pancreas*, 11(4), 393-395.
- Rao, R. N., Pandey, R., Rana, M. K., Rai, P., & Gupta, A. (2013). Pancreatic and peripancreatic tuberculosis presenting as hypoechoic mass and malignancy diagnosed by ultrasound-guided fine-needle aspiration cytology. *Journal of Cytology/Indian Academy of Cytologists*, 30(2), 130.
- Takhtani, D., Gupta, S., Suman, K., Kakkar, N., Challa, S., Wig, J. D., & Suri, S. (1996). Radiology of pancreatic tuberculosis: a report of three cases. *The American journal of gastroenterology*, 91(9), 1832-1834.
- De Backer, A. I., Mortelé, K. J., Bomans, P., De Keulenaer, B. L., Vanschoubroek, I. J., & Kockx, M. M. (2005). Tuberculosis of the pancreas: MRI features. *American Journal of Roentgenology*, 184(1), 50-54.
- Chatterji, S., Schmid, M. L., & Anderson, K. (2012). Tuberculosis and the pancreas: a diagnostic challenge solved by endoscopic ultrasound. *A case series. J Gastrointest Liver Dis*, 21, 105-107.
- Kaushik, N., Schoedel, K., & McGrath, K. (2006). Isolated pancreatic tuberculosis diagnosed by endoscopic ultrasound-guided fine needle aspiration: a case report. *JOP*, 7(2), 205-210.
- Saluja, S. S., Ray, S., Pal, S., Kukeraja, M., Srivastava, D. N., Sahni, P., & Chattopadhyay, T. K. (2007). Hepatobiliary and pancreatic tuberculosis: a two decade experience. *BMC surgery*, 7(1), 10.
- Jaber, B., & Gleckman, R. (1995). Tuberculous pancreatic abscess as an initial AIDS-defining disorder in a patient infected with the human immunodeficiency virus : case report and review. *Clin Infect Dis*. 20, 890-894.
- Nagar, A. M., Raut, A. A., Morani, A. C., Sanghvi, D. A., Desai, C. S., & Thapar, V. B. (2009). Pancreatic tuberculosis: a clinical and imaging review of 32 cases. *Journal of computer assisted tomography*, 33(1), 136-141.
- Xia, F., Poon, R. T. P., Wang, S. G., Bie, P., Huang, X. Q., & Dong, J. H. (2003). Tuberculosis of pancreas and peripancreatic lymph nodes in immunocompetent patients: experience from China. *World Journal of Gastroenterology: WJG*, 9(6), 1361.
- Meesiri, S. (2012). Pancreatic tuberculosis with acquired immunodeficiency syndrome : a case report and systemic review. *World J Gastroenterol*, 18, 720-726.