Primary pancreatic tuberculosis mimicking pancreatic body cancer. A case report and review of the literature

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ABSTRACT

Isolated pancreatic tuberculosis (PT) is an extremely rare disease, with non-specific clinical characteristics, making the diagnosis often challenging with pancreatic cancers.

Here we report a case of a 36-year-old female, who was admitted to our hospital after suffering from a 3-month history of epigastric abdominal pain, night sweats and weight loss. The physical examination was normal. The radiological findings revealed the presence of a pancreatic mass and multiple abdominal lymphadenopathy, suggestive of malignancy. The initial differential diagnosis suspected was pancreatic tuberculosis. Tuberculosis skin test was performed and was highly positive (>22 mm). Computed tomography (CT)-guided biopsy of peripancreatic lymph node was carried out and the histopathological exam confirmed the diagnosis of PT. Therefore, anti-tuberculous therapy was initiated, leading to clinical and radiological improvement.

The diagnosis of PT is rare and can sometimes be misleading. It should be considered when a pancreatic mass is observed, especially in endemic countries, to avoid unnecessary interventions.

1. Introduction

Pancreatic tuberculosis (PT) is an extremely rare condition, even in countries where the disease is highly prevalent. The diagnosis is often challenging as clinical and radiological features can mimic pancreatic cancer [1,2]. The excellent evolution after anti-tuberculous therapy makes it imperative to diagnose pancreatic tuberculosis early to avoid unnecessary surgical procedures. We report one such case of primary PT to emphasize one of more rare causes of pancreatic masses.

2. Case report

We hereby report a case of a 36-year-old female, who was admitted to our hospital after suffering from a 3-month history of epigastric abdominal pain, night sweats and weight loss. She received initially a symptomatic treatment, but with no improvement. Physical examination and biological investigations were normal. An abdominal ultrasound was performed and showed a 40-mm mass in the pancreatic body with multiple peripancreatic and ccelo-mesenteric lymphadenopathy (Fig. 1). Abdominal Computed tomography (CT) was carried out then and revealed a 45 × 28 mm low-density lesion, arising from the pancreatic body. This lesion had a heterogeneous appearance after the administration of contrast agent. Multiple peripancreatic, mesenteric and hilar lymphadenopathy with a low-density and necrotic appearance were noted (Fig. 2). Chest CT did not show any lesion.

Based on the above findings the diagnosis of a pancreatic neoplasm with multiple lymph node metastases was suspected. Therefore, the patient was referred to the department of digestive surgery for resection of the pancreatic mass. On examination, the patient was not icteric with no palpable lymphadenopathy. Abdominal examination did not reveal any particular sensitivity or mass. Her laboratory investigations: Complete Blood Count (CBC), renal and liver function were normal. Tumor markers such as CA 19-9 and CEA showed normal levels. Face to this discordance between clinical and radiological findings, other differentiated diagnoses were suspected and included autoimmune pancreatitis and PT. Tuberculosis skin test was highly positive (>22 mm). Computed tomography (CT)-guided biopsy of peripancreatic lymph node was performed. Histopathological findings showed caseous granulomatous inflammation corresponding in peripheral rim of epithelioid histiocytes with some multinucleated giant cells surrounding a central granular

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Fig. 1. Abdominal ultrasound showing a 40-mm mass in the pancreatic body (A) with multiple peripancreatic lymphadenopathy (B).

Fig. 2. Abdominal Computed tomography (CT) revealed a 45 × 28 mm low-density lesion, arising from the pancreatic body.

Fig. 3. Histological findings, hematoxylin and eosin, showing caseous granulomatous inflammation (A, x100). It corresponds in peripheral rim of epithelioid histiocytes with some multinucleated giant cells surrounding a central granular necrotic region (B, x200).
peripancreatic nodules, some with focal calcification.

Weight loss; iii) ultrasound and CT scan show pancreatic mass and negative 

Techniques are negative 

Reaction (PCR) based assay is a highly specific testing and may give a 

Largest review, are summarized in Table 1. There is no surprise that 

This disease are non-specific. Feng Xia et al. have suggested cha 

Case series or case reports. PT usually affects young adults and is seen 

Equally in both male and female patients. It is most often associated 

With immunosuppression or miliary tuberculosis (TB). Path 

Genesis of isolated PT remains poorly understood. PT may produce a 

Variety of clinical presentations and most of reported clinical features of 

This disease are non-specific. Feng Xia et al. have suggested character 

istics of PT as follows: i) mostly occurs in young people, especially 

Female; ii) have a past history of TB, or come from endemic zone of 

Active tuberculosis; iii) often present with epigastric pain, fever and 

Weight loss; iii) ultrasound and CT scan show pancreatic mass and 

Peripancreatic nodules, some with focal calcification. 

Table 1: Frequency of pancreatic tuberculosis symptoms.

| Pancreatic Tuberculosis Symptoms | Frequency |
|---------------------------------|-----------|
| Abdominal pain                  | 66%       |
| Fever/night sweats              | 52%       |
| Anorexia/significant weight loss| 46%       |
| Malaise/weakness                | 28%       |
| Back pain                       | 20%       |
| Jaundice                        | 15%       |

The most common symptoms of PT and their frequency, according to 

A large review, are summarized in Table 1. There is no surprise that 

The clinical feature in PT mimics pancreatic neoplasms. In fact, symp 

Toms such as abdominal pain, anorexia, weight loss, jaundice and a 

Pancreatic mass are suggestive of malignancy resulting 

Suspicion of a pancreatic cancer. Thus, patients presented with such com 

plaints should be meticulously investigated in order to avoid unne 

cesary pancreatic resection and the attributed risks. Imaging of the pancreas by ultrasound or CT, which are often used 

For initial investigations, has demonstrated that PT can mimic a 

Pancreatic cancers. 

Ultrasoundography (US) shows usually focal hypoechoic lesions or 

cystic lesions of the pancreas. For CT scan findings, they include irregular borders or diffuse enlargement of the pancreas, hypodense 

Lesions and enlarged peripancreatic lymph nodes. The pancreatic 

mass is presented as a single tissue process in 62.5% of cases and show usually a heterogeneous appearance. It is located often in the head 

(56%) and is associated with a peripancreatic lymphadenopathy in 75% 

Of cases. Invasive diagnostic techniques such as CT/US-guided 

Percutaneous biopsy and surgical biopsy are more reliable and definitive 

In contrast to noninvasive techniques. In fact, tissue obtained from bi 

opsy can be evaluated for pathologic and microbiological examination. 

Histologically, the presence of caseous granulomatous inflammation 

And positive stain for acid-fast bacilli are suggestive of tuberculosis. 

Typical epithelioid and gigantocellular granuloma is found in 60% of 

Cases and rarely caseous necrosis is seen. Microbiological ex 

amination is used equally to confirm the diagnosis and is based essen 

ially on cultures for mycobacteria, which take up to 6 weeks to grow 

Besides, it is interesting to emphasize that polymerase chain reaction (PCR) based assay is a highly specific testing and may give a 

Positive result even though cultures of these tissues and special staining 

Techniques are negative.

Once the diagnosis is given, the management of PT rest on

Antitubercular therapy. This treatment comprises multi-drug anti 

Tuberculous chemotherapy (streptomycin, rifampin, isoniazid, pyr 

Azinamide and ethambutol) and it is usually recommended for between 

6 and 12 months. The guidelines of Directly Observed Therapy 

Short course (DOTS) recommend only six months of therapy even for 

Severe forms of tuberculosis. The response to treatment is usu 

Predictable and complete with clinical and radiological improve 

ment. Therefore, longer duration of treatment is unnecessary because it results in higher costs and can exposes patients to more side effects. 

PT recurrence is rarely described and surgery is performed in case of serious complications like compressions, fistulas and hemorrhages. 

Isolated pancreatic tuberculosis is a rare disease that require high index of suspicion for diagnosis. Clinical presentation and radiological 

Findings of a pancreatic mass may be suggestive of malignancy resulting 

A vastly different therapeutic approach and prognostic implication. 

This disease should be considered in patients presenting with pancreatic 

Mass, especially in immunocompromised condition. Thus, vigorous ef 

forts should be made to obtain preoperative microbiological or/and 

Histological diagnosis to avoid the patient unnecessary surgical 

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Itissem Korbi and Hassen Zenati: specimen contribution and data collection.

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References

[1] V. Bhatia, P.K. Garg, V.K. Arora, R. Sharma, Isolated pancreatic tuberculosis mimicking intraductal pancreatic mucinous tumor, Gastrointest. Endosc. 68 (3) (2008) 610.

[2] S. Chatterjee, M.L. Schmid, K. Anderson, K.W. Oppong, Tuberculosis and the pancreas: a diagnostic challenge solved by endoscopic ultrasound. A case series, J Gastrointestin Liver Dis 21 (1) (2012) 105–107.

[3] S.K. Bhansali, Abdominal tuberculosis. Experiences with 300 cases, Am. J. Gastroenterol. 67 (1977) 324–337.

[4] S. Shahrrokh, M. Mohammad Bagher, S. Mohammad Taghi, A. Amir Houshang Mohammad, Pancreatic tuberculosis: an overview, JOP 16 (3) (2015) 222–238.

[5] A.L. Falkowski, J. Graber, H.G. Haack, et al., Isolated pancreatic tuberculosis: a case report and radio-logical comparison with cystic pancreatic lesions, J. Radiol. Case Rep. 7 (1) (2013) 1–11.

[6] S. Shahrokh, M. Mohammad Bagher, S. Mohammad Taghi, A. Amir Houshang Mohammad, Pancreatic tuberculosis mimicking pancreatic head carcinoma: a case report and review of the literature, JOP 16 (4) (2015) 449–454.

[7] A.L. Falkowski, J. Graber, H.G. Haack, et al., Isolated pancreatic tuberculosis: a case report and radio-logical comparison with cystic pancreatic lesions, J. Radiol. Case Rep. 7 (1) (2013) 1–11.

[8] G. Pandya, R. Dixit, V. Shelat, et al., Obstructive jaundice: a manifestation of pancreatic tuberculosis, J. Indian Med. Assoc. 105 (2007) 133–136.

[9] X. Feng, T.P.P. Ronnie, G.W. Shu, Tuberculosis of the pancreas and peripancreatic lymph nodes in immunocompetent patients: experience from China, World J. Gastroenterol. 9 (2003) 1361–1364.

[10] C.Q. Yan, J.C. Guo, Y.P. Zhao, Diagnosis and management of isolated pancreatic tuberculosis: experience of 13 cases, Chin. Med. Sci. J. 22 (2007) 152–155.

[11] W.K. Lee, F. Van Tonder, C.J. Tartaglia, C. Dagia, R.L. Cazzato, V.A. Duddalwar, et al., CT appearances of abdominal tuberculosis, Clin. Radiol. 67 (2012) 596–604.

[12] C.S. Pramesh, A.A. Heroor, S.G. Gupta, S. Krishnamurthy, P.J. Shukla, P. Jagannath, L.J. Desouza, Pancreatic tuberculosis: an elusive diagnosis, HPB 5 (1) (2003) 43–45.

[13] M.A. Rezeig, B.M. Fashir, H. Al-Suhaibani, et al., Pancreatic tuberculosis mimicking pancreatic carcinoma: four case reports and review of literature, Dig. Dis. Sci. 43 (1998) 329–331.

[14] G. Kouraklis, A. Glinavou, A. Karayiannakis, et al., Primary tuberculosis of the pancreas mimicking a pancreatic tumor, Int. J. Pancreatol. 29 (2001) 151–153.

[15] E.S. Weiss, W.M. Kleins, C.J. Yoo, Peripancreatic tuberculosis mimicking pancreatic neoplasia, J. Gastrointest. Surg. 9 (2005) 254–262, https://doi.org/10.1016/j.gassur.2004.06.010.

[16] A. Yavuz, H. Bulus, A. Aydin, et al., Pancreatic tuberculosis mimicking inoperable pancreatic cancer, Turk. J. Gastroenterol. 23 (2012) 95–97.

[17] F. Ozkan, E. Bulbuloglu, M.F. Inci, et al., Isolated pancreatic tuberculosis mimicking malignancy and causing obstructive jaundice, J Gastrointest Cancer 44 (2013) 118–120.

[18] J.D. Evans, Y. Hannanaka, S.P. Olliff, et al., Tuberculosis of the pancreas presenting as metastatic pancreatic carcinoma, Dig. Surg. 17 (2000) 183–187.

[19] P. Veerabadran, P. Sanur, S. Subramanain, et al., Pancreatic tuberculosis-abdominal tuberculosis presenting as pancreatic abscess and colonic perforation, World J. Gastroenterol. 13 (2007) 478–479.

[20] A.I. De Backer, K.J. Mortele, P. Romans, et al., Tuberculosis of the pancreas: MRI features, AJR Am. J. Roentgenol. 184 (2005) 50–54.

[21] J.B. Kim, S.S. Lee, S.H. Kim, et al., Peripancreatic tuberculosis lymphadenopathy can masquerade as pancreatic malignancy: a single centre experience, J. Gastroenterol. Hepatol. 29 (2014) 409–416.

[22] C.S. Pramesh, A.A. Heroor, S.G. Gupta, S. Krishnamurthy, P.J. Shukla, P. Jagannath, L.J. Desouza, Pancreatic tuberculosis: an elusive diagnosis, HPB 5 (1) (2003) 43–45.

[23] Standardized treatment regimens: treatment of tuberculosis: guidelines for national programmes Geneva, World Health Organisation 3 (2003) 27–38.

[24] World Health Organization, Guidelines for Treatment of Drug-Susceptible Tuberculosis and Patient Care, 2017.