

CASE REPORT

Primary Pancreatic Tuberculosis: A Diagnosis and Therapeutic Dilemma. A Case Report

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ABSTRACT

Context Primary pancreatic tuberculosis is an uncommon disease that can simulate a pancreatic cancer in symptoms as well as in imaging studies. Extrapulmonary tuberculosis can compromise different organs, including the ileocecal region, the peritoneum or different organs such as the spleen, liver and pancreas. **Case report** A Fifty-two-year-old female presented with a history of abdominal pain and jaundice. There was no history of pulmonary tuberculosis or other diseases. Ultrasonography and computed tomography scan showed dilation of the bile duct and an irregular and hypodense lesion in the pancreatic head. Preoperative imaging studies, laboratory findings and no evidence of pulmonary tuberculosis suggested a resectable pancreatic head neoplasm at surgery, two resectable yellowish lesions located in the pancreatic head were found and a conventional pylorus-preserving pancreatoduodenectomy was performed with standard lymphadenectomy. The pathologic analysis revealed pancreatic parenchyma with chronic inflammatory granulomatous reaction with Langhans' giant cells with areas of caseous necrosis. The Ziehl Neelsen stain confirmed the presence of Koch's bacillus in the necrosis areas. **Conclusions** Primary pancreatic tuberculosis is extremely rare and diagnosis is a real challenge. Imaging studies are non-specific and do not allow differentiation with an adenocarcinoma, being the fine needle aspiration the only way of preoperative diagnosis. However, since fine needle aspiration is not part of the diagnostic algorithm in a resectable pancreatic tumor, most cases of primary pancreatic tuberculosis are diagnosed postoperatively.

INTRODUCTION

Primary pancreatic tuberculosis is an uncommon disease that can simulate a pancreatic cancer in symptoms as well as in imaging studies. Despite its very low incidence, it must be suspected in geographical areas with high incidence of Koch's bacillus infections. The aim of this paper is to show a case of primary pancreatic tuberculosis treated with pilorous preserving pancreatoduodenectomy for suspected head pancreatic cancer.

CASE REPORT

A Fifty-two-year-old female presented with a history of abdominal pain and jaundice. There was no history of pulmonary tuberculosis or other diseases. Ultrasonography and computed tomography (CT) scan showed dilation of the bile duct (**Figure 1**) and an irregular and hypodense lesion in the pancreatic head (**Figures 2,3**) with peripancreatic lymphadenopathies interpreted as resectable pancreatic

cancer. Liver function tests showed: Total Bilirubin 7 mg/dL, direct bilirubin 4.8 mg/dL, alkaline phosphatase 837 IU/mL. No abnormality was detected in other laboratory investigations. HIV serology was negative. Chest X Ray was normal. A plastic stent was placed endoscopically confirming the distal obstruction.

Preoperative imaging studies, laboratory findings and no evidence of pulmonary tuberculosis suggested a resectable pancreatic head neoplasm, so surgical treatment was performed.

At surgery, two resectable yellowish lesions located in the pancreatic head (**Figures 4, 5**) were found and a conventional pylorus-preserving pancreatoduodenectomy was performed with standard lymphadenectomy (**Figure 4**). Patient developed a pancreatic fistula type A, self-limited and was discharged 10 days after surgery.

The pathologic analysis revealed pancreatic parenchyma with chronic inflammatory granulomatous reaction with Langhans' giant cells with areas of caseous necrosis. Lymphatic mass had similar tuberculoid type granulomatous reaction. The Ziehl Neelsen stain confirmed the presence of Koch's bacillus in the necrosis areas.

DISCUSSION

Tuberculosis is a disease that still has a high incidence in developing countries and reappears as an

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Keywords Jaundice; Tuberculosis

Abbreviations EGF epidermal growth factor; FGF fibroblast growth factor; NPC nasopharyngeal carcinoma; VEGFR vascular endothelial growth factor receptors

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Figure 1. CT scan with pancreatic head enlargement. White arrow shows dilated extrahepatic bile duct.



Figure 2. CT scan. White arrows points hypodense pancreatic head mass.

opportunistic infection in developed countries due to the increase in the incidence of HIV/AIDS. Extrapulmonary tuberculosis has an incidence between 10% and 30% of all tuberculosis cases [1, 2] and can affect lymph nodes, pleura, genitourinary tract or abdomen. The abdominal condition can compromise different organs, including the ileocecal region, the peritoneum or different organs such as the spleen, liver and pancreas [1]. Usually, pancreas involvement occurs in patients with miliary tuberculosis and with immunosuppression but can also occur in immunocompetent patients. The primary pancreatic form is extremely uncommon but has been described [3, 4]. Spread to the pancreas may be by hematogenous route, lymphatic route or by contiguity, but it is an uncommon location because the proteolytic action of pancreatic enzymes does not form a favorable space for the development of mycobacterium tuberculosis.

Ultrasonography and CT scan are the basis of diagnostic imaging of a pancreatic mass. However, in the diagnosis of primary pancreatic tuberculosis, both have a lower utility. Ultrasound allows visualizing a hypoechoic image in the body or head of the pancreas and the CT scan provides data about the structure of the lesion and its relation with the vessels. Tuberculous lesions may be solid, cystic, mixed, may present calcifications, may dilate the biliary tract or the main pancreatic duct, and may be associated with multiple peripancreatic

lymphadenopathies. However none of the methods mentioned above are specific enough to confirm the diagnosis of primary tuberculosis. As it is a rare entity, it can be suggested that pancreatic tuberculosis should be considered in cases with a large space occupying lesions associated with necrotic peripancreatic lymph nodes and constitutional symptoms [5, 6, 7].

In our case the studies did not allow to differentiate the lesion of an adenocarcinoma, therefore the surgical behavior was conditioned by the obtained results.

Preoperative suspicion of primary pancreatic tuberculosis undoubtedly conditions the treatment as it would avoid unnecessary surgery. The only way to confirm this diagnosis is by puncture and aspiration of the lesion, preferably by echoendoscopy [8, 9]. In a retrospective analysis our case, echoendoscopy would have been useful since it would have avoided pancreatoduodenectomy in this patient. However, endoscopic ultrasound fine needle aspiration is not part of the diagnostic routine in the management of a patient with a resectable pancreatic mass [10]. In a patient with a pancreatic mass who does not show signs of unresectability, diagnostic fine needle aspiration is not indicated to decide the surgical procedure since although the echo-endoscopy is a very effective method, it has 15% false negatives in experienced hands [11]. Therefore, a negative biopsy does not invalidate surgery. In our case, the lack of epidemiology for tuberculosis, the absence of pulmonary tuberculosis and the presence of a resectable lesion in the pancreatic head with jaundice, took us not to think in primary pancreatic tuberculosis since its extremely low incidence and made us to take the decision to operate the patient.

In cases with previous diagnosis of tuberculosis, treatment consists in receiving the standard medication for 6 to 12 months. A combination of rifampicin, isoniazid pyrazinamide and ethambutol is used [7]. Medical treatment is always indicated when the diagnosis is performed. In cases of biliary obstruction, endoscopic or surgical intervention is needed to relieve the obstruction since the stenosis might persist despite antituberculous therapy. Surgical indication is also indicated when cannot rule out associated oncological pathology.



Figure 3. Pancreatic head mass.



Figure 4. Intraoperative picture after resection.
BD bile duct; HA hepatic artery; Portal portal vein

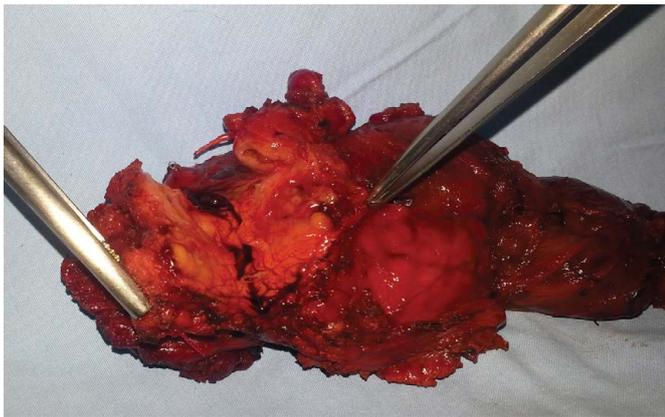


Figure 5. Specimen. Pylorus preserving pancreatoduodenectomy with 2 yellow zones with necrosis.

CONCLUSION

Primary pancreatic tuberculosis is extremely rare and diagnosis is a real challenge. Imaging studies are non-specific and do not allow differentiation with an adenocarcinoma, being the fine needle aspiration the only way of preoperative diagnosis. However, since fine needle aspiration is not part of the diagnostic algorithm in a resectable pancreatic tumor, most cases of primary pancreatic tuberculosis are diagnosed postoperatively [2].

Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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