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Isolated Pancreatic Tuberculosis: Report of Two Cases

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Isolated pancreatic tuberculosis (PT) remains a rare entity even in countries where the disease is highly prevalent. It frequently presents as a mass mimicking a pancreatic malignancy. Therefore, it represents a diagnostic challenge. We report a case of a 27 years old woman who was admitted to surgery department after 3 weeks of epigastric abdominal pain and jaundice. The radiological findings revealed the presence of a pancreatic mass and multiple abdominal lymphadenopathy, suggestive of malignancy. Exploratory laparotomy with biopsy of peripancreatic lymph node confirmed the diagnosis of pancreatic tuberculosis.
The second patient presented with heterogeneous necrotic mass in the pancreatic body. Computed tomography (CT)-guided biopsy made the diagnosis of pancreatic tuberculosis.
The two patients were given antituberculous therapy and are now doing well.
The diagnosis of PT should be considered when a pancreatic mass is observed to avoid misdiagnosis and establish early treatment.

Keywords: Pancreas; tuberculosis; antituberculous therapy.

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1. INTRODUCTION

"Tuberculosis (TB) is a serious health problem worldwide. Abdominal tuberculosis account for 11 to 16% of patients with extra-pulmonary tuberculosis" [1]. "Primary Pancreatic tuberculosis is the isolated involvement of the pancreas by the mycobacterium tuberculosis in the absence of involvement of any other organ or previously identified TB" [2]. It is rare even in endemic areas and frequently mimics pancreatic malignancy [3]. Clinical and Imaging features are variable and nonspecific. The diagnosis is often confirmed by histological and microbiological examination of the biopsy specimens.

We report two cases of isolated PT presenting as pancreatic masses in immunocompetents hosts.

2. CASE PRESENTATION

Observation 1

A 27 years old woman was admitted to the surgery department with epigastric pain and features of obstructive jaundice evolving for 3 weeks. She denied any signs of nausea, vomiting, fever, chills or night sweats and had regular bowel movements. She and her family had no history of tuberculosis, and her past medical history was not significant. Physical examination found an icteric patient with tenderness of the epigastrium region without any palpable mass. Otherwise, it was unremarkable.

The blood routine tests revealed anemia (hemoglobin level = 7.9 gr/dL), increased alkaline phosphatase [ALP]: 128 IU/L, γ-glutamyl transferase (γ-GT): and mild elevation of liver enzymes (aspartate aminotransferase [AST]: 39 IU/L, alanine aminotransferase [ALT]: 49 IU/L. Interferon-γ release assay (QuantiFERON-TB Gold™;) was positive and HIV test was negative.

Computed tomography (CT) showed an irregular lowdensity lesion in the pancreatic head measuring 37 × 44x 70 mm that enhanced after iodinated contrast material with extension into the superior mesenteric artery, accompanied by dilatation of the biliary tract and multiple peripancreatic, mesenteric and hilar lymphadenopathy [4,5]. We performed exploratory laparotomy under general anesthesia. A retroperitoneal cystic lesion was observed in the head of the pancreas Quickly frozen pathological examination of the lymph node showed chronic inflammation, and biopsy specimens of the pancreatic mass revealed granulomatous inflammation with caseous necrosis without malignancy.

Based on these pathological findings, the diagnosis of PT was made. We initiated a standardized anti-tuberculous therapy including 6mg/Kg isoniazid, 9mg/Kg rifampicin, 75 mg/Kg pyrazinamide, and 15mg/Kg ethambutol for 6 months. On follow-up visit at 3 months, the patient's clinical symptoms had improved.

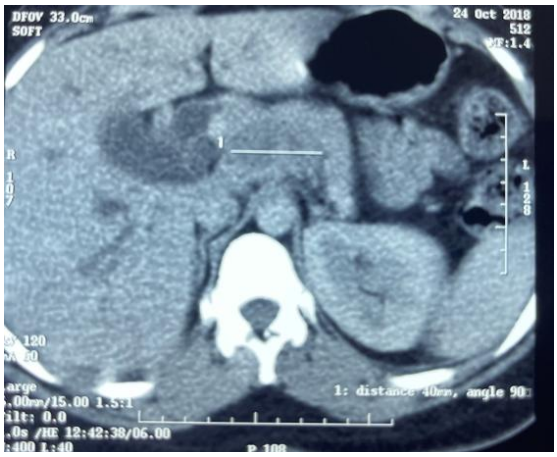

Fig. 1. Abdominal contrast-enhanced tomography showed a lowdensity lesion in the pancreatic head measuring 37 × 44x 70 mm

Observation 2

A 45 years old woman with a personal history of lymph nodal tuberculosis (cervical, mediastinal and axillary) well treated 10 years ago, was admitted to our hospital with epigastric abdominal pain, fever, night sweats anorexia and significant weight loss for 5 months duration. Physical examination and biological investigations were normal. Body weight was 52 Kg. The serological tests including HIV were all negative.

An abdominal ultrasound showed a hypoechoic mass, measuring 3cm, of pancreatic head with no intrahepatic and extrahepatic bile duct dilation.

Abdominal computed tomography (CT) revealed a large (6 cm × 5.6 cm × 4.6 cm) heterogeneous necrotic mass in the pancreatic body with loss of fat planes, a possible infiltration of the greater curvature of the stomach and left lobe of liver, and encasement of celiac vessels and portal

vein. Multiple peri-pancreatic and retroperitoneal lymph nodes with necrotic centers and peripheral enhancements were also seen.

Computed tomography (CT)-guided biopsy pancreatic mass was performed.

Histological examination of the specimen showed caseous granulomatous inflammation. There was no evidence of malignancy or atypical cells.

Patient started anti-tuberculous therapy (isoniazid 300 mg/day, rifampin 600 mg/day, pyrazinamide 1600 mg/day and ethambutol 1100 mg for 6 months and showed response to treatment and no complications were reported

3. DISCUSSION

Tuberculosis incidence in Morocco is 94 for 100000 inhabitants [6] in 2021 and abdominal tuberculosis represents 0.6% frequently involving the ileocecal region [3]. PT remains uncommon and occurs for less than 5% of abdominal tuberculosis. This is explained by the retroperitoneal location of the pancreas and the antibacterial effect of pancreatic enzymes including lipase and deoxyribonucleases [7]. The pancreas can be affected by haematogenous spread or dissemination by retroperitoneal lymph node via the lymphatic system as seen in our patients [8].

PT usually occurred in young adults and is seen equally in both male and female patients [9]. It is most often associated with immunosuppression and past history of tuberculosis [9]. Our patients were young immunocompetent, and the second had a personal history of TB.

Clinical manifestations are various and may include abdominal pain, obstructive jaundice which may be associated with cholestasis because of biliary obstruction by either pancreatic mass or peripancreatic lymphadenopathy, and general signs such weight loss, anorexia, fever and night sweats [8]. In our cases patients reported epigastric pain and general signs. However, the first case only showed signs of obstructive jaundice with cholestasis syndrome.

Ultrasonography or computed tomography (CT) are usually first-line diagnostic modalities and may reveal a cystic or solid pancreatic mass [7] witch has been reported as the most common form [10] or a pancreatic abscess, [2] sometimes showing central liquefactive necrosis [9]. Imaging findings remains non specific and doesn't distinguish between pancreatic TB and malignancy. As in our cases histopathological confirmation is necessary for the diagnosis [7].

Endoscopic ultrasound provides better images can readily differentiate pancreatic and peripancreatic masses and offer the possibility to sample the lesion [3].

In our reports, biopsy specimens were obtained from CT-guided percutaneous biopsy in the second case and surgical biopsy after exploratory laparoscopy in the first case.

The diagnosis of pancreatic tuberculosis is confirmed by either the presence of Typical epithelioid and gigantocellular granuloma [10] with caseation or the presence of mycobacterium tuberculosis DNA by polymerase chain reaction (PCR), Ziehl-Neelsen staining, or positive culture [7].

As illustrated in this report, standard anti-tubercular therapy appears to be successful in management of this infection. A minimum of 6 months of multi-drug anti-tuberculous chemotherapy including streptomycin, rifampin, isoniazid, pyrazinamide and ethambutol is indicated according to the health ministry guidelines.

4. CONCLUSION

Isolated pancreatic TB is extremely rare. Hence, TB should always be considered in the differential diagnosis of any pancreatic masses especially in endemic countries. In the light of our experience, all physicians should be aware of the clinical, radiological end histological features of pancreatic tuberculosis to make the right diagnosis and avoid unnecessary surgical procedures.

CONSENT

I have clearly stated that written informed consent was obtained from the patient for publication of this case report and any accompanying images.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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