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Case Report

Isolated pancreatic tuberculosis mimicking pancreatic cancer in an immunocompetent host: An elusive diagnosis ☆

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ABSTRACT

Isolated pancreatic tuberculosis is a very rare condition, even in areas of the world where the disease is highly prevalent. We report the case of isolated pancreatic tuberculosis in 54-year-old immunocompetent women, presenting as a solid mass of the pancreatic head with multiple lymphadenopathy mimicking a pancreatic carcinoma. The diagnosis was made with endoscopic ultra sound with fine needle aspiration and the treatment with anti-tuberculosis agents allowed the disappearance of the pancreatic mass and the regional lymphadenopathy. This case emphasizes the diagnostic challenge of this disease based on imaging findings because of a wide range of anomalies as carcinoma like masses, cystic lesions, or abscesses, which makes the Endoscopic ultrasound with fine needle aspiration the diagnostic modality of choice for pancreatic tuberculosis providing tissue samples for staining, cytology, culture, and polymerase chain reaction assay. Through this case we show that it is imperative to suspect pancreatic tuberculosis, as an appropriate treatment with antituberculosis drugs allows full recovery and avoids unnecessary surgery.

Introduction

Isolated pancreatic tuberculosis is a rare condition, even in high endemic countries [1] with an incidence reported to be less than 4.7% [2]. The diagnosis is often a challenge as symptoms and radiological appearance often mimics pancreatic cancer. Endoscopic ultra-sound with fine-needle aspiration (EUS FNA) could be a very powerful diagnostic tool [3]. The diagnosis of tuberculosis must be kept in mind when dealing with pancreatic masses that do not fit in to a particular pattern or do not have a clear histopathology. Tuberculosis, being a curable disease, every effort should be made to determine an early diagnosis so as to avoid unnecessary interventions.

☆ Conflicts of Interest: No conflicts of interest.

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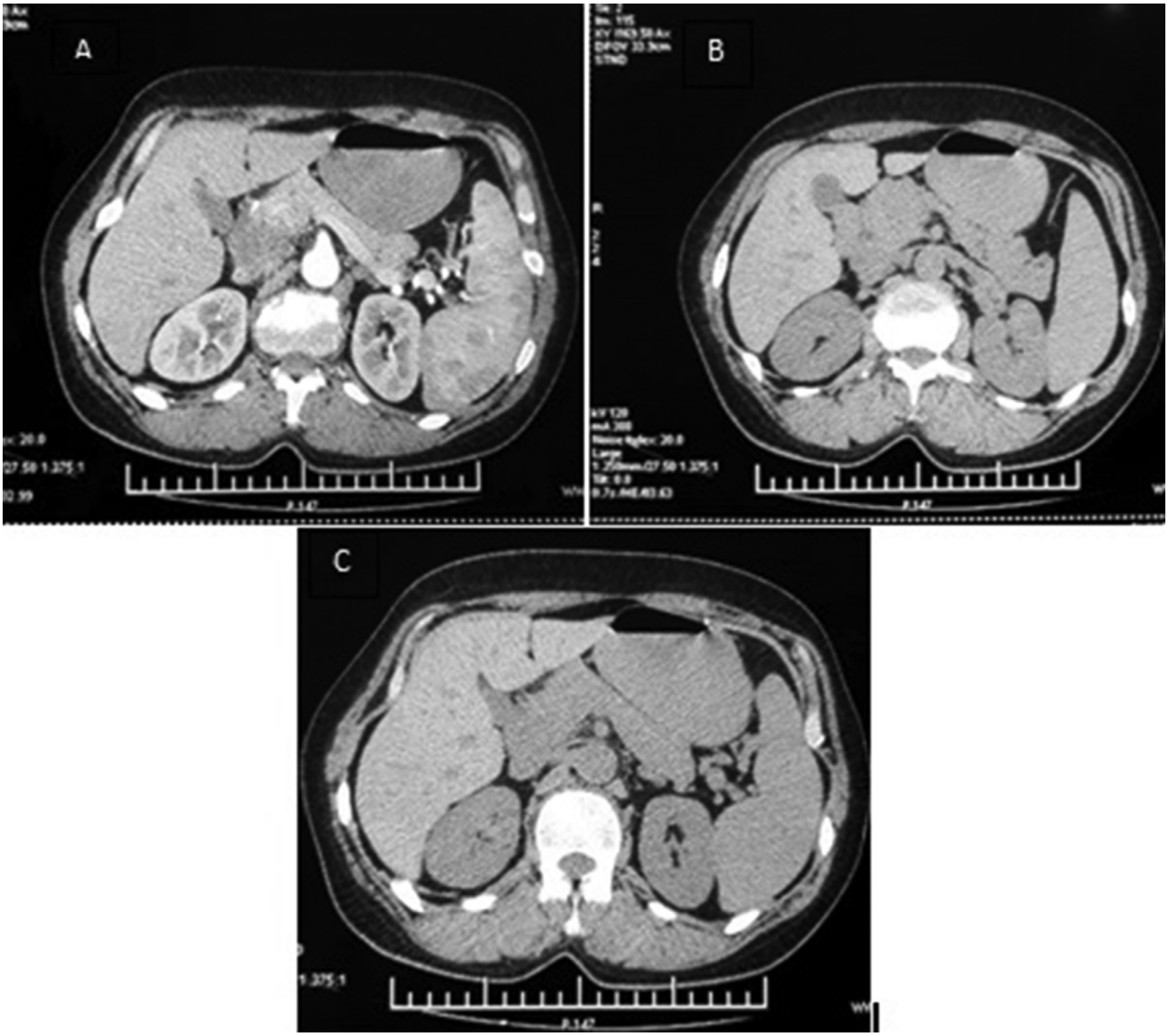

Fig. 1 – CT scan of the abdomen shows (A, B): a solid ill-defined hypodense mass of the uncinated process (arrow), it is associated with multiple lymphadenopathies, (C) arterial phase shows no enhancement of the mass.

Case report

A healthy 54-year-old woman presented with 2 months history of epigastricpain, with prolonged fever and night sweats. She did not complain of weight loss or anorexia. Clinical exam was normal. Liver function tests and blood counts were normal.

Abdominal CT scan revealed an ill-defined 30*20 mm solid mass in the uncinate process with multiple enlarged agglomerations of coelio-mesenteric lymph nodes and in the splenic and liver hilum area ranging from 16 to 32 mm in size (Fig. 1). A pancreatic MRI revealed asolidhypo vascular mass of the uncinate process (36*24 mm). This lesion exhibits low signal intensity in the T1 weighted images, high signal intensity in the T2 weighted sequences and enhances poorly comparing to the rest of the pancreas. It comes to contact with the inferior vena cava, the portal vein and the common hepatic artery without vascular invasion. A second 20*22 mm mass with the same characteristics was located in the body of the pancreas. Biliary tree and the wirsung duct were not dilated (Fig. 2).

Based on these imaging features, major diagnosis were primary adenocarcinoma of the pancreas, auto immune pancreatitis and pancreatic lymphoma.Ca19-9, lipase, LDH, and β2 microglobulin levels were normal. EUS FNA revealed an ill-defined hypoechoic 20*30 mm mass of the uncinate process with no vascular invasion and enlarged lymph nodes of the hilum measuring 10 to 25 mm. FNA of both uncinate process mass and lymph nodes revealed a viscous white liquid, and histopathology revealed lymphocytes, epithelioid cells agglomeration suggestive of granulomatous inflammation and eosinophilic caseous necrosis compatible with active

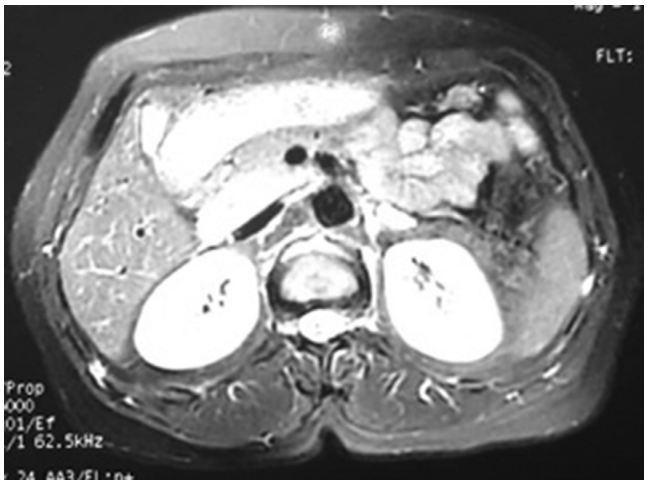

Fig. 2 – MRI showing an ill-defined posteriorsolid mass of the head of the pancreas with high signal intensity in the T2 weighted images.

tuberculosis. Direct bacteriological exam did not show any acid fast bacilli and we did not perform other microorganism cultures. Polymerase chain reaction (PCR) was not performed. CT scan of the thorax did not show any signs of pulmonary tuberculosis.

Tunisia, being a region of high endemicity where tuberculosis is considered the main cause of granulomatous inflammation, combined with typical histology findings, the diagnosis of isolated pancreatic tuberculosis was made.

Therefore, the patient was treated with anti tuberculosis drugs (ATD): HRZE (2 months) + HR (7 months). A CT scan at the end of the treatment showed total regression of the anomalies. This favorable outcome after ATD is a major further confirmation of the established diagnosis.

Discussion

Primary Isolated pancreatic tuberculosis as an isolated involvement of the pancreas by mycobacterium tuberculosis is extremely uncommon with less than 100 cases [4]. Pancreatic involvement usually occurs in the setting of miliary or widely disseminated tuberculosis; often in immuno-compromised hosts [2,4].

It is believed that this low frequency is due to retroperitoneal location of pancreas as well as pancreatic enzymes that interfere with the colonization, seeding, and proliferation of the bacteria [4–6]. The most common route of spread of tuberculosis to the solid organs of the abdomen is the haematogenous, and less commonly the lymphatic route. Direct spread from adjacent affected organs or lymph nodes has also been reported [2].Our patient had pancreatic tuberculosis with multiple abdominal lymphadenopathies and no signs of digestive tract or lung involvement.

Pancreatic tuberculosis affects most commonly men under 30 years [4]. The particularity of our patient is that she was a female immunocompetent host. The clinical presentation of pancreatic tuberculosis is often insidious, with nonspecific constitutional symptoms occurring frequently [7]: abdominal pain, weight or appetite loss, fever, chills, nausea, fatigue, and sweating [4,8].

On clinical exam, the most common finding is an epigastric lump that could be tender and secondary an epigastric tenderness without the lump [2].

The diagnosis of pancreatic tuberculosis is a challenge as there are no pathognomonic radiologic features. It most commonly involves the region of the head and the uncinate process [3] and can be classified into 3 groups: mass-forming, diffuse form, and small, nodular form [8].

Our patient presented a typical localization with a mass-forming radiological aspect which is compatible with the most frequent description in the literature.

CT scan features of pancreatic tuberculosis are nonspecific; they are usually cystic and multilocular secondary to the presence of extensive areas of necrosis [6]. Other Imaging features may include hypodense, hypovascular well-defined mass with irregular margins and peripheral enhancement. Areas of central enhancement may result in a multilocular appearance with adjacent peripancreatic and periportal lymphadenopathy with peripheral ring enhancement [2].These features may resemble those of inflammatory or neoplastic cystic lesions of the pancreas [2]. Contrarily to adenocarcinoma, in pancreatic tuberculosis the common bile duct and the pancreatic duct appear usually normal [4].

Pancreatic tuberculosis may lead to local vascular invasion [4], therefore the presence of vascular invasion cannot exclude the possibility of pancreatic tuberculosis neither does the dilatation of the pancreatic main or branch duct [4]. Pancreatic enlargement with narrowing of the main pancreatic duct and heterogeneous enhancement is the characteristic of the diffuse form of pancreatic tuberculosis [4].

The morphology of calcifications, observed in 7.1%-56.3% of pancreatic tuberculosis cases, is inconsistent and may cause confusion with pancreatic neoplasia [2,5]. MRI findings of focal pancreatic tuberculosis include a sharply delineated mass showing heterogeneous enhancement; they are typically hypo intense on fat-suppressed T1-weighted images and show a mixture of hypo/hyper intensity on T2-weighted images [2].

Due to the lack of pathognomonic radiological features, cytological or histopathological as well as bacteriological confirmation is necessary for the diagnosis of pancreatic tuberculosis [4,7]. EUS has emerged as an important tool for imaging and sampling pancreatic lesions [4]. EUS FNA rarely reveals acid fast bacilli, it shows granulomatous inflammation with aggregates of plasma cells, epithelioid cells, and lymphocytes [9]. PCR assay is now being increasingly used to detect Mycobacterium tuberculosis [10]. In our patient the final diagnosis was established based on typical histo-pathological findings of tuberculosis. Even though no acid fast bacilli were found on the specimen, the diagnosis was supported by the high endemicity context of the region where tuberculosis is the main cause of granulomatous inflammation.

The current practice should be to submit samples for cytology, histology along with dedicated aspirate in a sterile container for microbiology and PCR assay when pancreatic

tuberculosis is suspected [9]. Standard ATD regimen including for 6-12 months, is usually effective [4].

Conclusion

Isolated pancreatic tuberculosis is extremely rare especially in immunocompetent host. Clinical and radiological findings may be suggestive of a malignant pancreatic tumor. EUS-FNA is an excellent investigation to detect pancreatic tuberculosis promptly and prevents unnecessary surgical procedures.

Authors contribution

Imen Jemni: Writing; Imen Akkari: Writing and review; Soumaya Mrabet and Elhem Ben Jazia: Conceptualization and review.

Ethical approval

Study is exempt from ethnical approval in our institution.

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