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Izolated Pancreas Tuberculosis: Evaluation of Two Cases

İzole Pankreas Tüberkülozu: 2 Olgunun Değerlendirilmesi

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Özet

Mikobakterium tüberkülozis insan vücudundaki her organı enfekte edebilir. Tüberküloz ile enfekte olan hastaların %12'sinde karın içi organlar tutulabilir. Bu yazımızda, karın ağrısı ve düşük dereceli ateş ile seyreden 33 yaşında bir erkek ve 45 yaşında bir kadın hasta sunulmuştur. İlk olguda pankreas başındaki hipoekoik kitleden endosonografi eşliğinde alınan biyopside herhangi bir patoloji saptanamamıştır. Pankreas başında karsinom şüphesi ile Whipple pankratikoduodenektomi operasyonu uygulanmıştır. İkinci olguya, ultrasonografi (USG) eşliğinde ince iğne aspirasyon biyopsisi uygulanmış ve asit fast basilli ile pozitif boyanan nekroze granülomatöz lezyon izlenmiştir. Hastaya anti-tüberküloz tedavi verilmiştir. Sonuç olarak, pankreas kitlelerinin ayrıcı tanısında özellikle radyolojik olarak santrali nekrotik pankreas kitlelerinde ve peripankreatik nekroze lenfadenopatilerde tüberküloz da akılda tutulmalıdır. Şüpheli nekroze pankreas kitlelerinde gereksiz laparotomiden kaçınmak için bilgisayarlı tomografi (BT)/USG eşliğinde biyopsi ve mikobakteri için doku kültürü alınmalıdır.

Anahtar kelimeler: *Pankreas tüberkülozu*, *Pankreasta nekrotik kitle*, *Peripankreatic nekrotik lenf nodu*

Abstract

Mycobacterium tuberculosis can infect almost any organ in the human body. Up to 12% of patients infected with tuberculosis may have involvement of the abdominal organs. A 33-year-old man and a 45-year-old woman presented with, abdominal pain and low-grade fever. First case an endosonographic biopsy from the hipoechoic mass in the head of pancreas did not reveal any pathological signs. On clinical suspicion of a carcinoma in the head of the pancreas, a Whipple's pancreaticoduodenectomy was performed. Second case ultrasound guided Fine Needle Aspiration for Cytology(FNAC) was done which revealed necrotizing granulomatous lesion which was positive for acid fast bacilli. Based on this finding, a diagnosis of pancreatic tuberculosis was made and the patient was put on anti-tubercular therapy. In conclusion, we would like to emphasize that tuberculosis should be considered in the differential diagnosis of pancreatic masses, especially when peripancreatic necrotic lymphadenopaties or pancreatic mass with necrosis in central was seen radiologically. To avoid unnecessary laparotomy, CT/US guided percutaneous aspiration cytology/biopsy and culture of tissue for mycobacteria should be done in a patient with pancreatic mass.

Keywords: *Pancreatic tuberculosis*, *Necrotic mass in the pancreas*, *Peripancreatic necrotic lymph node*

Introduction

Mycobacterium tuberculosis can infect almost any organ in the human body. Up to 12% of patients infected with tuberculosis may have involvement of the abdominal organs [1]. Tuberculosis of the pancreas (PTB) is extremely rare [2]. In the abdomen, tuberculosis mostly affects the liver, spleen and the peritoneum of the ileocecal region and small intestines. The bile ducts or pancreas are extremely rarely affected (approximately 1% of all abdominal cases) due to the antimicrobial effect of pancreatic enzymes [3]. Because of its rarity, the diagnosis of pancreatic tuberculosis can easily be missed or significantly delayed. Clinico-radiologically PTB closely resembles a pancreatic malignancy. Therefore, most cases of pancreatic TB have been diagnosed after exploratory laparotomy surgery for suspected malignancy. However, with the use of improved imaging techniques computed tomography

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(CT) or more recently endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) and image-guided interventions preoperative diagnosis of pancreatic masses is now possible without going for surgery [4]. When ınconclusive imaging and biopsies in patients, laparotomy can be required because it can be confused with malignant masses in the pancreas.

We present two cases of pancreatic tuberculosis to highlight the importance of including tuberculosis in the differential diagnosis of a pancreatic mass.

Case Report

CASE-1

A 33-year-old man presented with, abdominal pain, intermittent episodes of bluming and low-grade fever of four months duration. The pain was located in the upper abdomen with radiation to the back. He also admitted having a 3 kg weight loss over six month period, anorexia and generalised weakness. There was no history of cough, hemoptysis, fever or shortness of breath. He had received two BCG vaccine at childhood, but there was no prior history of tuberculosis, or family history. There was no history of smoke and alcohol ingestion. Physical examination was unremarkable except epigastric tenderness without guarding. His laboratory studies showed hemoglobin of 13.6 g/dL, total leukocyte count of 9800/μL with a normal differential count, an elevated erythrocyte sedimentation rate (41 mm/h). Liver function tests were normal. His random blood sugar, serum urea and creatinine will within normal limits. Serum amylase was 157 IU/L (reference range: 40-140 U/L) and lipase was normal. Cancer antigen 19-9 (CA19-9) and carcinoembryonic antigen (CEA) were normal. The patient did not present with signs of any immunosuppressive diseases and a serological test for HIV was negative. A chest X-ray film was normal. An ultrasound scan showed a hipoechoic 29x 33 mm mass in the head of the pancreas, which on computed tomography (CT) scanning was a 30 mm × 35 mm × 55 mm hipoechoic mass arising from the head of the pancreas. (Figure 1)

Figure 1
Computed tomography (CT) scan showing a 30 mm × 35 mm × 55 mm hipoechoic mass arising from the head of the pancreas (first case)

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Also no intra- or extrahepatic dilatation of the bile ducts, and no obstruction or thrombosis of blood vessels was seen on CT scan. Endosonography showed an echo-poor 54x 49 mm mass with central necrosis in the head of the pancreas. An endosonographic biopsy from the hipoechoic mass in the head of pancreas did not reveal any pathological signs. On clinical suspicion of a carcinoma in the head of the pancreas, a Whipple's pancreaticoduodenectomy was performed. Intraoperatively, there was approximately a 5x 5 cm solid mass in the pancreatic head and uncinate process. The operative specimen was eveluated and at the head of pancreas, there was an ulceroinfiltrative area measuring 5x4 cm in diameter. Microscopic examination showed numerous coalescing epithelioid cell granulomas in the pancreas . The histopathology from the pancreatic mass revealed necrotizing granulomatous lesion which was positive for acid fast bacilli.The patient had uneventful postoperative period. After the diagnosis of tuberculosis, antitubercular drugs were started and patient is doing well at the follow up after 6 month.

CASE-2

A 45-year-old woman presented with, abdominal pain and low-grade fever of three months duration. The pain was located in the upper abdomen without radiation to the back. She also admitted having a 4 kg weight loss over three month period and she has an anorexia and generalised weakness. There was no history of cough, hemoptysis, fever or shortness of breath. She had received three BCG vaccine at childhood, but there was no prior history of tuberculosis, or family history. There was no history of smoke and alcohol ingestion. Physical examination was unremarkable except epigastric tenderness without guarding. Her laboratory studies showed hemoglobin of 12.7 g/dL, total leukocyte count was normal with a normal differential count, an elevated erythrocyte sedimentation rate (72 mm/h). Liver function tests were normal. Her random blood sugar, serum urea and creatinine will within normal limits. Serum amylase and lipase was normal. CA19-9 and CEA were normal. The patient did not present with signs of any immunosuppressive diseases and a serological test for HIV(human immunodeficiency virus) was negative. A chest X-ray film was normal. An ultrasound scan showed a hipoechoic 33x 15 mm mass at the junction of the head and neck of pancreas, which on Abdomen CT scanning was a 30 mm × 15 mm × 14 mm hipoechoic mass with peripancreatic the largest dimension several hipoechoic mass and necrosis in central (seems like lymphadenopathy?), arising from the junction of the head and neck of the pancreas (Figure 2).

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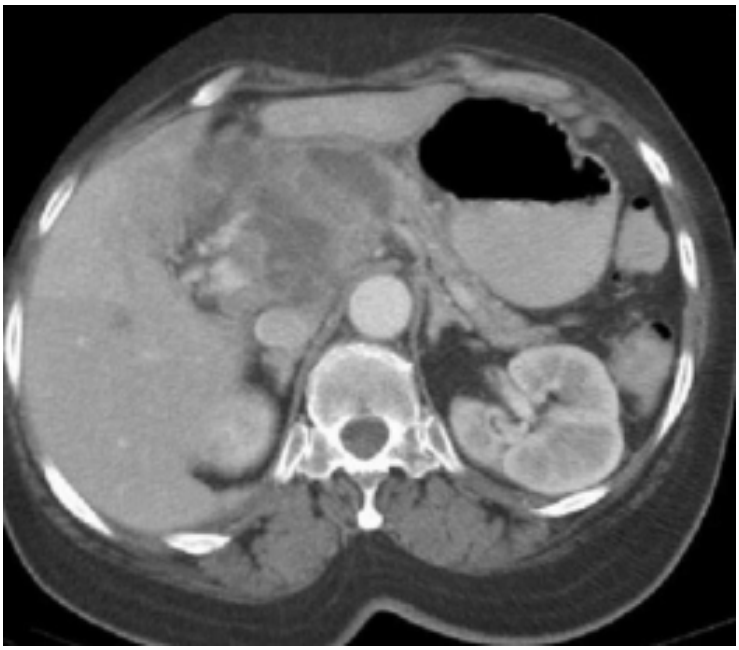

Figure 2
Computed tomography (CT) scan showing 30 mm × 15 mm × 14 mm hipoechoic mass with peripancreatic the largest dimension several hipoechoic mass and necrosis in central (second case)

Also no intra- or extrahepatic dilatation of the bile ducts, and no obstruction or thrombosis of blood vessels was seen on CT scan. Endosonography showed an echo-poor 30x 14 mm mass with central necrosis arising from the junction of the head and neck of the pancreas. Ultrasound guided Fine Needle Aspiration for Cytology(FNAC) was done which revealed necrotizing granulomatous lesion which was positive for acid fast bacilli. Based on this finding, a diagnosis of pancreatic tuberculosis was made and the patient was put on anti-tubercular therapy. Patient is doing well at the follow up after 6 month and a repeat CT scan of the abdomen was done which revealed the resolution of the pancreatic lesion.

In both patients are doing well on follow-up and first patient gained 6 kilograms and second patient gained 5 kilograms since then.

Case Discussion

Tuberculosis occurs in extrapulmonary locations in about 15% of the cases [5]. Pancreas is an organ rarely affected by the Mycobacteria. It is thought that pancreas is biologically protected from being infected by Mycobacterium tuberculosis, probably because of the presence of pancreatic enzymes which interfere with the seeding of Mycobacterium tuberculosis [6]. The incidence of PTB is reported to be less than 4.7% worldwide [7].PTB was first reported by Auerbach in 1944 [7]. Isolated pancreatic tuberculosis is highly rare in immunocompetent individuals. Even though, the disease most commonly occurs in patients residing in endemic zones, or in those with immunosuppressant status.

It's non-specific symptomatology along with non-specific laboratory and radiological findings makes the diagnosis very difficult. The main symptoms at presentation of pancreatic tuberculosis are pain (81%), weight loss (55%), fever (36%), vomiting (19%) and jaundice (17%) [8]. Usually patients have a normal liver function tests and tumor marker levels but most patients have a high ESR and have a positive tuberculin test in over 70% of cases [8,9]. It has been speculated that the pancreas can be involved in tuberculosis either by a hematogenous route or by

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direct spread from contiguous lymph nodes [10].

In the past, extensive surgeries have been performed for high suspicion of periampullary carcinomas which then proved to be tuberculosis of the pancreas [11]. With the use of improved imaging techniques computed tomography (CT) or more recently endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) and image-guided interventions preoperative diagnosis of pancreatic masses is now possible without going for surgery [4]. The noninvasive diagnostic techniques for pancreatic TB rely mainly on ultrasonography and CT abdomen. Ultrasonography reveals focal hypoechoic lesions or cystic lesions of the pancreas [12,15]. Findings on CT scan include hypodense lesions and irregular borders mostly in the head of the pancreas, diffuse enlargement of the pancreas or enlarged peripancreatic lymph nodes [13,15]. The invasive diagnostic techniques for pancreatic TB rely mainly on biopsy include endoscopic US-guided biopsy, CT/US- guided percutaneous biopsy, and surgical biopsy (open or laparoscopic) [14,15].

The microscopic features suggestive of tuberculosis are presence of caseating granulomatous inflammation and positive stain for acid fast bacilli. Cultures for mycobacteria take up to 6 weeks to grow and are used to confirm the diagnosis.

Xia et al have summarized characteristics of PTB as follows: 1.) mostly occurs in young people, especially female; 2.) have past history of tuberculosis or come from endemic zone of tuberculosis; 3.) often present with epigastric pain, fever, and weight loss; and 4.) ultrasound or CT scan show pancreatic mass and peripancreatic nodules, some with focal calcification [16].

When a diagnosis of isolated pancreatic tuberculosis is suspected on clinical and/or radiological grounds every effort should be made to confirm the diagnosis. A tuberculin test and chest X-ray should be performed. Every attempt should be made to isolate the bacillus from other sites such as sputum, bronchus and urine. If ascites is present then paracentesis with ZN staining, PCR and culture should be performed. PCR now offers the possibility of both a more sensitive and more rapidly available definitive diagnosis compared to microscopy and culture, and should be performed on all sterile specimens [17,18]. HIV testing is important as this is a risk factor for tuberculosis and the response to antituberculous therapy can be blunted in individuals who are infected. Once diagnosis is established, anti tubercular therapy is administered, which is curative in majority of the cases [2,19].

In a patient suspected to have a resectable pancreatic cancer, histological confirmation before surgery, by FNAC or core biopsy, is not our standard practice. The reason for this is the ongoing concern about complications [18,20,21] including tumour seedling [18,22] with resection usually being necessary regardless of the histology. However, if tuberculosis is suspected and confirmed then surgery is not necessary, making FNAC a very useful test.

In conclusion, we would like to emphasize that tuberculosis should be considered in the differential diagnosis of pancreatic masses, especially when peripancreatic necrotic lymphadenopaties or pancreatic mass with necrosis in central was seen radiologically. To avoid unnecessary laparotomy, CT/US guided percutaneous aspiration cytology/biopsy and culture of tissue for mycobacteria should be done in a patient with suspect necrotic pancreatic mass.

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