

Tuberculous Lymphadenitis as a Cause of Obstructive Jaundice

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Rezumat

Limfadenita de cauză tuberculoasă ca etiologie a icterului obstructiv

Icterul obstructiv secundar tuberculozei abdominale este extrem de rar. Vă prezentăm o pacientă cu icter secundar compresiei coledociene prin limfadenita TB. O femeie de 49 de ani a fost admisă în departamentul nostru pentru greață, dureri epigastrice și icter. Ecografia abdominală și tomografia computerizată au fost sugestive pentru stenoza coledocului distal cauzată de o masă retropancreatică. La laparotomie s-au decelat adenopatii de dimensiuni mari situate retro-cefalic pancreatic, cauzând compresia și stenoza porțiunii distale a coledocului. Examenul extemporaneu la gheață a adenopatiei a descris granulom epitelioid cu necroză cazeoasă, înalt sugestiv pentru originea tuberculoasă. S-a efectuat anastomoza coledocoduodenală. Examenul histopatologic final a confirmat limfadenita TB. Tuberculoza abdominală trebuie luată în considerare ca o potențială cauză de icter, în special la pacienții imunodeprimați și în zonele endemice. Diagnosticarea tuberculozei abdominale poate fi dificilă. Nu există la ora actuală nici un standard de diagnostic satisfăcător, astfel încât, în cele mai multe cazuri, diagnosticul nu poate fi stabilit înainte de laparotomia exploratorie. Depistarea precoce permite tratamentul conservator și elimină necesitatea intervenției chirurgicale.

Cuvinte cheie: icter obstructiv, tuberculoză abdominală

Abstract

Obstructive jaundice secondary to abdominal tuberculosis is extremely rare. We present a patient with jaundice secondary to compression of the common bile duct by TB lymphadenitis. A 49-year-old woman was admitted to our department for nausea, epigastric pain and jaundice. Abdominal ultrasonography and computer tomography scan were suggestive of stenosis of the distal common bile duct caused by a retropancreatic mass. At laparotomy, an enlarged lymph node behind the head of the pancreas was found, causing compression and stenosis of the distal parts of the choledochus. The lymph node frozen section analysis showed epithelioid granuloma with caseous necrosis, strongly suggesting tuberculous origin. Choledochoduodenal anastomosis was performed. Definitive pathohistological examination confirmed TB lymphadenitis. ATB should be considered as a potential cause of jaundice especially in immunocompromised patients and endemic areas. Diagnosing abdominal tuberculosis can be a challenging task. No satisfactory diagnostic gold standard is available so that in most cases the diagnosis cannot be reached before exploratory laparotomy. Early detection enables successful conservative treatment and eliminates the necessity of surgery.

Key words: obstructive jaundice, abdominal tuberculosis

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Introduction

Tuberculosis is a potential systemic disease which can affect any organ or system of the body. Abdominal tuberculosis (ATB) is rare and accounts for 12-25% (1,2) of all extra-pulmonary TB cases. ATB incidence has been increasing

over the last 20 years, especially in TB endemic areas, developing countries, immunocompromised patients and due to increasing antibiotic resistance of *Mycobacterium tuberculosis*. It is characteristic of patients with human immunodeficiency virus infection, where it is present in 50-70% of cases. However, the atypical localization of TB can also be found in HIV-negative immunocompetent persons (3,4) which makes the diagnosis more difficult.

In the abdomen, tuberculosis mostly affects the liver, spleen and the peritoneum of the ileocecal region and small intestines. In ATB, most commonly lymph nodes are diffusely affected (48%), or the disease may be localized to mesenteric (26%) or peripancreatic (13%) lymph nodes (Sinan&al). The bile ducts or pancreas are extremely rarely affected (approximately 1% of all abdominal cases) due to the antimicrobial effect of pancreatic enzymes (5). The caseous material expanding from the liver and inflammation spreading due to TB adenitis affect the bile ducts. Pancreatic tuberculosis usually occurs as a complication of miliary tuberculosis (2-4.7% in patients who died of disseminated disease). Individual cases of pancreatic TB have been reported in HIV-positive persons, people suffering from lupus and after kidney transplantation (6). Obstructive jaundice secondary to tuberculosis can be caused by inflammatory stricture of the common bile duct, TB lymphadenitis, TB enlargement of the head of the pancreas and compression due to a retroperitoneal TB abscess. The diagnosis is usually not suspected before laparotomy.

This paper presents a case of obstructive jaundice secondary to compression of the distal parts of the choledochus by enlarged tuberculous lymph nodes.

Case report

A 49-year-old woman who works as a nurse at the Dispensary for Pulmonary Diseases was admitted to our department for epigastric pain, nausea, malaise, appetite and weight loss, jaundice. Physical examination revealed moderate epigastric tenderness. Total bilirubin was 65.8 mmol/L, direct bilirubin 38.3 mmol/L, AST 178.1 U/L, ALT 485 U/L, ALP 778.5 U/L, GGT 680 U/L, CRP 28.8 mg/L and SE 58 mm/h. Other laboratory tests including tumour markers CEA and CA 19-9 were all within normal limits. HBsAg and HCV were negative. The chest radiography and general urine analysis were within normal limits. Abdominal ultrasonography (US) revealed an enlarged acalculous gallbladder, with a lymph node in the infundibular region (up to 16 mm) and dilated bile ducts (up to 12 mm) above the retropancreatic mass (50x35 mm). Abdominal computer tomography (CT) scan showed a liver of normal densimetric values and configuration, without any focal lesions. The gallbladder was enlarged, filled with bile, without abnormal contents. The intrahepatic and extrahepatic bile ducts were dilated along their entire length up to the distal parts of the choledochus where, at the back of the pancreas, a tumorous lesion with an inhomogeneous, post-contrastive appearance was seen (KK-70 mm, LL-34 mm, AP-30 mm). The lesion was localized behind the head of the pancreas and the

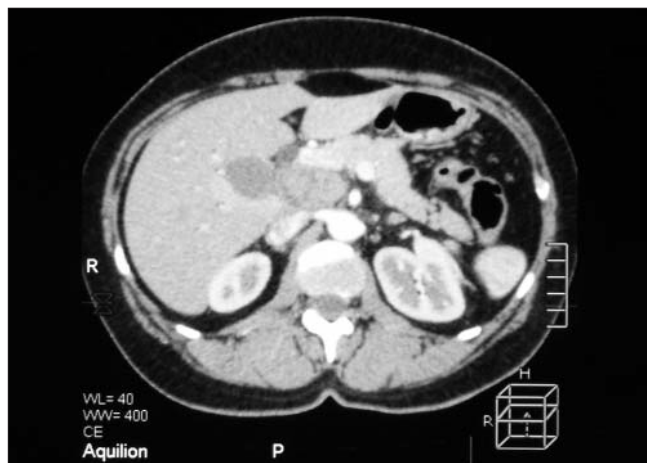


Figure 1. CT scan showing retropancreatic lesion compressing the common bile duct

second part of the duodenum and adjacent to inferior vena cava, which it did not infiltrate (Fig. 1).

At laparotomy, the gallbladder was found to be dilated, with no abnormal contents. The bile ducts were moderately dilated and the liver was normal. After mobilizing the duodenum and the head of the pancreas, an enlarged lymph node aggregate was found, adherent to the posterior part of the head of the pancreas and distal choledochus. The lymph node had a solid surface with a soft centre and caused compression and stenosis of the common bile duct. It was completely extirpated and frozen section analysis revealed chronic granulomatous inflammation and caseous necrosis. Cholecystectomy was performed. Intra-operative cholangiography and choledochotomy confirmed a stenosis of the distal part of the hepaticocholedochus and choledochoduodenal anastomosis was performed. Post-operative course was uneventful. Laboratory results normalized after 2 weeks. During her hospital stay the patient was treated with Rifamor (600 mg per day). The patient was discharged from hospital on the 6th postoperative day.

Pathohistological examination of the gallbladder was suggestive of non-specific, while the extirpated lymph node showed chronic granulomatous inflammation. Necrotic fields on the slide and epithelioid granulomas containing single multinucleated giant cells were suggestive of tuberculosis (Fig. 2).

Further treatment included triple anti-tuberculous therapy over a period of 6 months: Isoniazid (5 mg/kg per day), Rifampicin (600 mg per day) and Ethambutol (25 mg/kg per day). She gradually regained her appetite and weight, with resolution of pain and malaise and a complete regression of all the symptoms after 5 months. She remained well 2 years after the procedure, without any symptoms suggestive of TB.

Discussion

Obstructive jaundice secondary to ATB is extremely rare, even in TB endemic areas. It can be caused by TB lymphadenitis, TB enlargement of the head of the pancreas, TB stricture of the biliary tree and a TB mass of the retroperitoneum (15,19) all of which may mimic a pseudo-

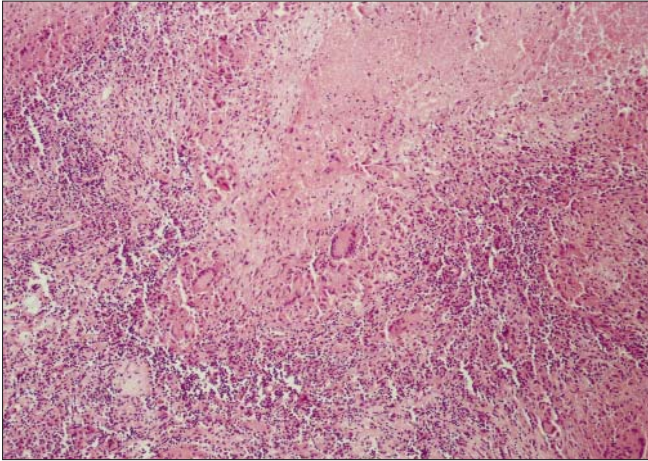


Figure 2. Focal tuberculoid granuloma formation with multinucleate giant cells, suggestive of mycobacterial infection (HEX10)

tumour clinically, radiologically, and even intraoperatively. This may lead to unnecessary surgical procedures: from exploratory laparotomy to resectional procedures, including Whipple's operation (5,7-10,22). Early diagnosis is crucial because, in most cases, the disease can be successfully treated conservatively. The diagnosis of TB is established by isolating *Mycobacterium tuberculosis* from clinical samples, which is not always possible when it comes to atypical diseases such as abdominal TB. Microscopy after Ziehl-Neelsen staining is negative in 33-41% of cases. Culture on Lovenstein medium is a reliable method (a sensitivity of over 77%), but it requires 4-8 weeks. BACTEC 460 media can accelerate the process so that results are obtained after 10-12 days. Polymerase chain reaction (PCR) testing detects the presence of *Mycobacterium tuberculosis* DNA in 5-6 hours, but its sensitivity does not exceed 70% (2,11). The most reliable method for diagnosing the disease is pathohistological analysis, which shows granuloma with caseous necrosis, whose presence is confirmed by subsequent staining and/or culture of samples or PCR (1,2,6). The above-mentioned methods can be used to diagnose obstructive jaundice, when all other causes, primarily malignant, are eliminated. There is no satisfactory gold standard for diagnosing abdominal tuberculosis. However, an appropriate diagnostic algorithm can help establish the right diagnosis.

Obstructive jaundice secondary to TB mostly affects middle-aged women from TB endemic areas, who check into the hospital due to epigastric pain, temperature and weight loss. Positive personal or family history of TB is useful for the diagnosis, but it is present in less than 30% of patients (1). Laboratory findings are non-specific; anemia, lymphocytopenia or pancytopenia and mildly elevated transaminase levels and the sedimentation rate are most commonly encountered (2). The level of CA-125, a tumour marker typical of ovarian cancer, is elevated in almost all women patients (1) to the extent that Thakur et al. proposed that it should be considered an indicator of TB infection. However, as such, this parameter is not applicable to patients of both sexes.

In the case of compression of the CBD by TB lymphadenitis, ERCP demonstrates a normal pancreatogram, (15) with a smooth narrowing of the distal parts of the choledochus. Bacteriology, cytology or PCR of the aspirate obtained during ERCP may be confirmatory of *Mycobacterium tuberculosis*, which occurs if the fistula between the TB lymph node and the CBD exists (10,15,21). Morphological examinations, such as US and CT, show deviations from normal in more than 80% of cases (1). Apart from indirect signs, such as ascites and/or hepatomegaly, these procedures can detect a hypodense pancreatic or peripancreatic mass. Changes are non-specific: focal calcification or multicystic changes can often be seen due to caseous necrosis (3,7,8,9,10).

CT cannot differentiate lymph nodes altered by tuberculosis from metastatic disease, lymphoma or pyogenic infection. US or CT-guided FNA biopsy of the enlarged lymph nodes may be useful. FNA biopsy is a safe procedure, has an overall sensitivity of 64-98%, a specificity of 98.4-100%, and can be done during EUS-guided biopsy, for lesions less than 3 cm, while biopsy of larger lesions can be safely performed with imaging guidance such as CT or percutaneous US (12,13,14). Such diagnostic methods may cause dissemination of tumour cells if malignant; moreover, some authors consider that it is not reliable due to a high rate of false-negative results (6).

If US or CT detect ascites FNA, laparoscopy or paracentesis can be used for bacteriological or PCR examination of the samples. However, TB ascites (exudate, lymphocyte-predominant) is mostly negative for the presence of *M.tuberculosis* (12.13-14).

Since pathohistological analysis of a sample is crucial for establishing the diagnosis of ATB, many authors suggest laparoscopy followed by a biopsy. Also, jaundice may be successfully treated with endoscopic or percutaneous biliary stenting followed with percutaneous lymph node biopsy (23). Differential diagnosis may include a variety of entities affecting lymph nodes of hepatoduodenal ligament, primary periampullar tumors and numerous rare soft-tissue tumors (schwannoma, neurofibromas etc.)(24). Apart from typical changes such as caseous granulomas with giant Langerhans cells, samples obtained this way can undergo bacteriological or PCR examination (1,2,6-14).

Conclusion

Obstructive jaundice caused by TB lymphadenitis is extremely rare and difficult to diagnose. ATB has to be considered as possible etiology of jaundice especially in endemic areas. There is a wide range of diagnostic procedures for ATB. Most authors suggest FNA or laparoscopic biopsy as optimal minimally invasive diagnostic tools. Early detection enables successful conservative treatment and eliminates the necessity of surgery.

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