Unexpected isolated hepatic tuberculosis discovered during laparoscopic cholecystectomy: A case report

Tuberculose hépatique isolée de découverte per-opératoire fortuite: Cas clinique

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Abstract

Isolated hepatic tuberculosis is a rare form of extrapulmonary tuberculosis. We report an exceptional case of a 51-year-old female patient complaining from right upper abdominal quadrant pain, who underwent laparoscopic surgery for millimetric gallbladder polyps. Preoperative ultrasound hepatic morphology and biochemical hepatic tests revealed no abnormalities. There were no clinical patterns for an active tuberculosis. During surgery time, scattered sub-centimeter whitish nodular lesions were discovered on the upper surface of the liver. Although gallbladder pathological examination did not reveal any significant abnormalities, per surgery hepatic biopsy indicated the presence of a giant cell granuloma with caseous necrosis highly suggestive of hepatic tuberculosis. Treatment by anti-bacillary drugs according to local standard protocol was conducted with favorable outcomes. Therefore, diagnosis of hepatic tuberculosis may be considered in endemic countries in totally asymptomatic patients or complaining from unexplained and isolated abdominal pain, in absence of any morphologic or biochemical hepatic abnormalities.

Key words: Tuberculosis, Hepatic tuberculosis,Caseation necrosis, laparoscopic surgery

Résumé

La tuberculose hépatique isolée est une localisation rare de la tuberculose extra-pulmonaire.
Nous rapportons l'observation d'une patiente immunocompétente âgée de 51 ans, qui présentait des douleurs l'hypochondre droit non spécifique. Le bilan étiologique était négatif en dehors de polypes millimétriques de la vésicule biliaire. La morphologie du foie et le bilan hépatique étaient sans anomalies. Une cholécystectomie coelioscopique était réalisée avec découverte per-opératoire de lésions nodulaires blanchâtres infracentimétriques tapissant la surface hépatique. Il n'y avait pas d'ascite, de lésions péritonéales ni adénopathies associées.
L'examen histologique des biopsies hépatiques a révélé un granulome à cellules géantes avec nécrose caséeuse compatible avec une tuberculose hépatique. La pièce de cholécystectomie était sans anomalies. Il n'y avait pas d'autres localisations tuberculeuses associées. Un traitement anti-tuberculeux a été prescrit pendant 6 mois avec une évolution favorable.
Conclusion : La tuberculose hépatique, quoique rare, peut être évoquée dans un pays d'endémicité tuberculeuse, même en l'absence de toute anomalie clinico-biologique ou morphologique hépatique.

Mots clés: Tuberculose, tuberculose hépatique, nécrose caséeuse, chirurgie laparoscopique

INTRODUCTION

Isolated hepatic tuberculosis in immunocompetent individuals is an exceptional form of the disease. It represents less than 0.5 % of all forms of primary tuberculosis.
We reported an exceptional case of isolated hepatic tuberculosis discovered incidentally during laparoscopic surgery for millimetric gallbladder polyps, in an immunocompetent woman complaining from abdominal pain. There were no preoperative associated clinical symptoms, neither biochemical nor morphological abnormalities suggestive of hepatic tuberculosis.

CASE REPORT

We report the case of a 51-year-old female patient with past history of breast benign cyst surgery and no relevant medical history. She complained about abdominal right upper quadrant with no irradiation nor correlation with alimentary intake. Painful episodes were noted daily during30-60 minutes and evolved for several months. There was no reported fever, jaundice or nocturnal cold sweats. Appetite was conserved as well as body weight.
Physical examination was irrelevant. Hepatic biochemical tests were within normal range. Gallstones were suspected and abdominal ultrasound was performed.

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Gallbladder was found to be acalculous with a thin, non-distended wall and two millimeter-sized polyps, with thin intrahepatic bile ducts and no notable liver lesions. Due to symptoms burden, laparoscopic cholecystectomy was indicated. During surgery time, scattered sub-centimeter whitish nodular lesions were discovered on the upper surface of the liver, with no associated peritoneal lesions, adenitis or ascites. Cholecystectomy and hepatic biopsies were then performed.

The postoperative course was uneventful. Pathological examination of the operative specimen showed no particularities. However, those of hepatic biopsies revealed a giant cell granuloma with caseous necrosis highly suggestive of tuberculosis (Figure 1).

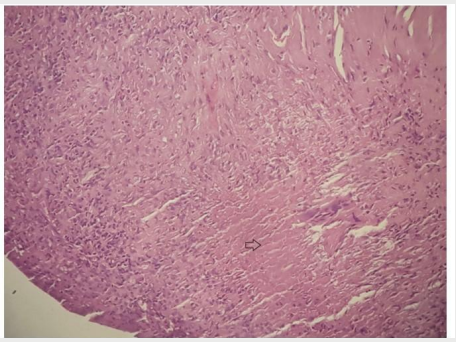

Figure 1. Epithelioid granuloma with central necrosis within hepatic parenchyma (x 200)

Thoracic and abdominal CT scan did not reveal any other pulmonary or extrapulmonary localization. The patient was started on anti-bacillary treatment with 2 months rifampicin / isoniazid / pyrazinamide / ethambutol combined quadruple therapy and 4 months rifampicin / isoniazid dual therapy. Treatment was well tolerated with no reported side effects. The patient reported no more abdominal pain.

DISCUSSION

Tuberculosis is a significant global health concern affecting people worldwide with variable prevalence and clinical presentations Tuberculosis predominantly affects respiratory tract. Extra-pulmonary localizations are counting for about 15-20% of cases[2]. Abdominal tuberculosis is the sixth most common type of extra-pulmonary tuberculosis and has been increasingly reported.

Hepatic involvement during tuberculosis infection accounts for approximately 1% of all active tuberculosis cases[3]. It typically occurs as part of disseminated tuberculosis with an associated miliary tuberculosis observed in up to 80% of cases. Immunocompromised individuals have a higher susceptibility to extrapulmonary and hepatic tuberculosis[2]. Surprisingly, in our case, there was no underlying congenital or acquired immunosuppression. Besides, hepatic tuberculosis was the only localisation of tuberculosis infection which highlights the originally of this report. Furthermore, isolated hepatic tuberculosis occurrence is more uncommon, representing 21% of all hepatic tuberculosis cases. Unfavorable growth conditions for mycobacteria caused by the low oxygen tension in the liver is the main explication for this prevalence. Isolated hepatic tuberculosis mechanism is secondary to Mycobacterium tuberculosis spread through portal vein from the gastrointestinal tract[3].This raises the question of the necessity or not to search for a synchronic intestinal tuberculosis when diagnosis of isolated hepatic tuberculosis is made.

Clinical presentation is extremely varied resulting in frequent diagnosis delay. Diagnosis is particularly challenging to clinicians as the diverse features of the disease can mimic many conditions, including primary or metastatic hepatic tumor, systemic infections, and viral hepatitis [4]. Most reported symptoms were as follow: Hepatomegaly (80%), fever (67%), abdominal pain (59,5%) and weight loss (57,5%). Portal vein compression by tuberculous lymph nodes can be responsible of portal hypertension with splenomegaly and ascites observed in 30% and 23% of cases respectively. Finally, jaundice noted in 20% of cases is due to hepatic infiltration or extrahepatic cholestasis by bile ducts stenosis or compression[5].

In rare cases, symptoms may be absent or minor which can be neglected by the patient, as in our case.

Hepatic tuberculosis can present with abnormal liver function tests especially in cases involving obstructed biliary systems. Extensive miliary liver involvement can be responsible of acute liver failure with septic shock and multiorgan failure[6].However, biochemical liver tests can also be within normal range as observed in our patient's case.

Diagnosis is based on CT scan and histologic examination of liver biopsies with respectively high sensitivity and specificity[5]. Hepatic tuberculosis present with various imaging patterns

such as miliary, nodular, and tubercular cholangitis. Computed tomography scans and ultrasound are commonly used, but lack diagnostic specificity. Miliary lesions appear as micro abscesses with little peripheral enhancement after intravenous contrast administration, while local hepatic tuberculosis presents as a solitary big lesion or multiple variable-sized hepatic nodules. Otherwise, hepatic tuberculosis can cause hepatomegaly and abdominal lymphadenopathy. Imaging appearance varies depending on the stage of hepatic illness, making it challenging to distinguish from other diseases.[3] To note, to the best of our knowledge, there was no previous description of hepatic tuberculosis with both normal biochemical hepatic tests and radiologic liver morphology, as reported in our case.

Histopathological examination of liver specimen remains the main and classic diagnostic tool. Diagnosis is made with caseous necrosis or Koch's bacillus identification. Epithelioid giant cell granuloma is associated in 25% of caseous necrosis cases. Koch's bacillus identification is made through direct examination or culture, which are inconsistently positive[7].In our case, caseous necrosis allowed undoubtful diagnosis of tuberculosis.

Nuclear acid amplification using polymerase chain reaction (PCR), is a recent technique that allows detection of Mycobacterium tuberculosis DNA on biopsy samples with a high sensitivity (95%).More recently; identification of new specific genes of Mycobacterium tuberculosis (known as signature sequences) allowed an enhanced sensitivity of PCR techniques to 97% [8].

Conventional tuberculosis treatment regimen typically lasts for 6 months, except for tuberculosis meningitis which requires a longer treatment duration. Due to its scarcity, hepatic tuberculosis response to treatment was not specifically studied before and 6 months conventional regimen is generally well admitted for hepatic tuberculosis treatment.

Surgery may be needed in combination with anti-tubercular drug therapy in specific cases such as isolated tuberculoma, liver abscess not responding to tuberculosis medication, obstructive jaundice, portal hypertension, biliary tract bleeding or doubt about hepatic malignancy.

Surgery varies in complexity ranging from simple procedures (enucleation, local excision, abscesses or bile ducts drainage) to more major surgeries such as liver segmentectomy and hemi hepatectomy.[9]

Prognosis is generally favorable. Prognosis is worsened particularly with biliary or portal involvement: biliary stenosis, tuberculous pseudocirrhosis or portal hypertension; and with extensive miliary liver involvement and acute liver failure[6].

In this report, isolated hepatic tuberculosis was diagnosed in absence of morphologic, biochemical hepatic abnormalities or suggestive clinical symptoms of tuberculosis infection. This emphasizes the polymorphism of tuberculosis infection manifestations particularly for hepatic localization, and also suggests a probably underestimated prevalence of hepatic tuberculosis.

CONCLUSION

By information given in this case report, isolated hepatic tuberculosis may be silent with no clinical, morphologic or biochemical liver abnormalities. Therefore, diagnosis of hepatic tuberculosis may be considered in asymptomatic patients from endemic countries or in those complaining from unexplained abdominal pain, without morphological nor biochemical liver tests.

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