Case study

A Case report of primary hepatosplenic tuberculosis in an immuno competent adult

Abstract

Primary hepatosplenic tuberculosis is a rare disease, even in endemic areas the diagnosis can be challenging, as it can mimic other infections or neoplastic causes. We describe a rare case of a 50-year-old man with no medical history presented to our unit for exploration of weight loss and chronic abdominal pain . A contrast-enhanced CT scan of the abdomen showed multiple hypodense hepatics and splenic nodules, not enhanced after injection of the contrast; the liver is infiltrated with irregular edges and perfusion disturbances, giving an encephalic appearance. The histological examination of an ultrasound-guided percutaneous liver biopsy showed an epithelio-gigantocellular granuloma without caseating necrosis. However, the PCR test and the Quantiferon-TB Gold test returned positive. The patient was treated with quadruple therapy (ethambutol, rifampicin, isoniazid and pyrazynamide) for two months, then rifampicin and isoniazid for seven months. At the six-month follow-up after stopping treatment, the patient was asymptomatic, and the hepatosplenic lesions had disappeared on a follow-up CT scan.

Conclusion: hepatosplenic tuberculosis is possible in a suggestive clinical and epidemiological context, even in an immunocompetent adult.

Keywords: tuberculosis, hepatosplenic, immunocompetent,treatment , follow-up CT scan.

INTRODUCTION:

"Primary hepatosplenic tuberculosis (TB) is a rare form of extra-pulmonary TB, even in countries with high endemic tuberculosis. It is usually a disseminated disease associated with miliary tuberculosis, one of the most characteristic manifestations of the infection" [1].

"However, due to the increasing incidence of pulmonary TB, clinicians should be aware of the possibility of tuberculosis infection in all patients with unresolved hepatic nodules [2], especially in areas of high prevalence, such as Morocco".

We describe a rare case of hepatosplenic TB in an immunocompetent adult without evidence of pulmonary involvement.

CASE REPORT:

A 50-year-old man presented to the gastroenterology unit for exploration of weight loss and weakness. The symptoms had started three months previously with asthenia associated with non-specific, intermittent and chronic abdominal pain, evolving in a context of weight loss of 15 kg and apyrexia without night sweats, anorexia or cough. The patient did not have a history of a specific pathology, has no known contacts with active TB or personal history of tuberculosis, and has no other digestive complaints.

Clinical examination revealed a conscious man with a temperature of 37.5 C, and a body mass index of 17.97 kg / m2. The abdominal examination revealed no tenderness or ascites and no hepatosplenomegaly. The lymph node areas were normal.

Laboratory analyses revealed inflammatory syndrome and lymphopenia. A contrast-enhanced CT (camputed tomographic) scan of the abdomen showed multiple hypodense hepatics and splenic nodules, not enhanced after injection of the contrast; the liver is infiltrated and irregularities and perfusion disturbances giving an encephalic appearance (figure 1). An infectious or neoplastic cause was suspected.

Liver enzymes, prothrombin levels, albuminemia, protein electrophoresis, and alpha-fetal protein were normal. The viral serologies (HVB, HVC) and the HIV serology returned negative.

In order to establish a final diagnosis, an ultrasound-guided percutaneous liver biopsy was performed. The histological examination showed an epithelio-gigantocellular granuloma without caseous necrosis (figure 2). Direct examination by Ziehl Neelsen stain and culture of liver tissue were negative; however, the PCR test and the Quantiferon-TB Gold test came back positive.

In order to search for other localizations of the infection, the test for Koch bacillus (BK) in sputum, gastric tube fluid and urine were negative, and the chest X-ray film was normal.

The patient was treated by quadruple therapy (ethambutol, rifampicin, isoniazid and pyrazynamide) for two months, then rifampicin and isoniazid for seven months, the protocol used in our country for a hepatosplenic tuberculosis infection. The evolution was marked by the rapid improvement of the general condition, regaining weight, and the disappearance of the inflammatory syndrome and abdominal pain. Six months after stopping treatment, the splenic and hepatic lesions had disappeared on a follow-up CT scan.

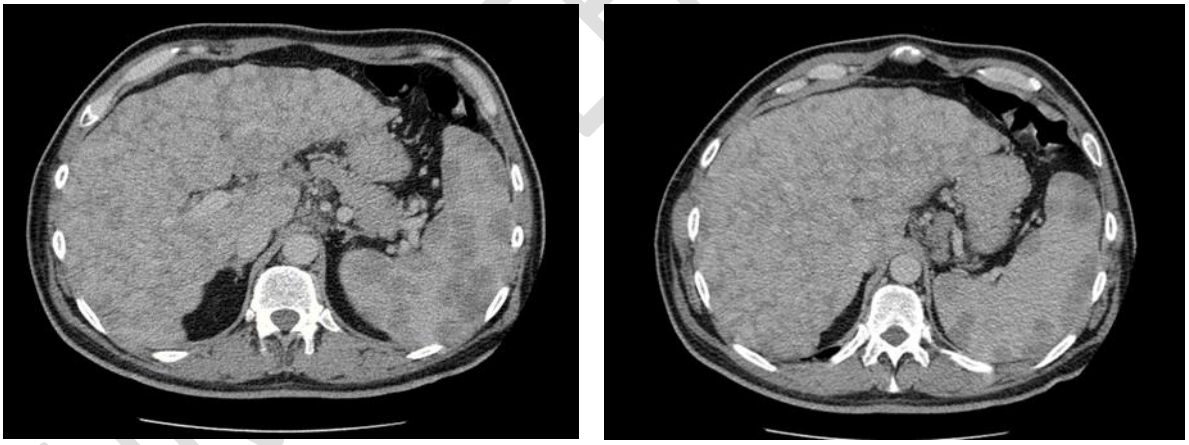

Figure 1: Computed Tomography scan of the abdomen showing multiple small low-density lesions in the liver and spleen.

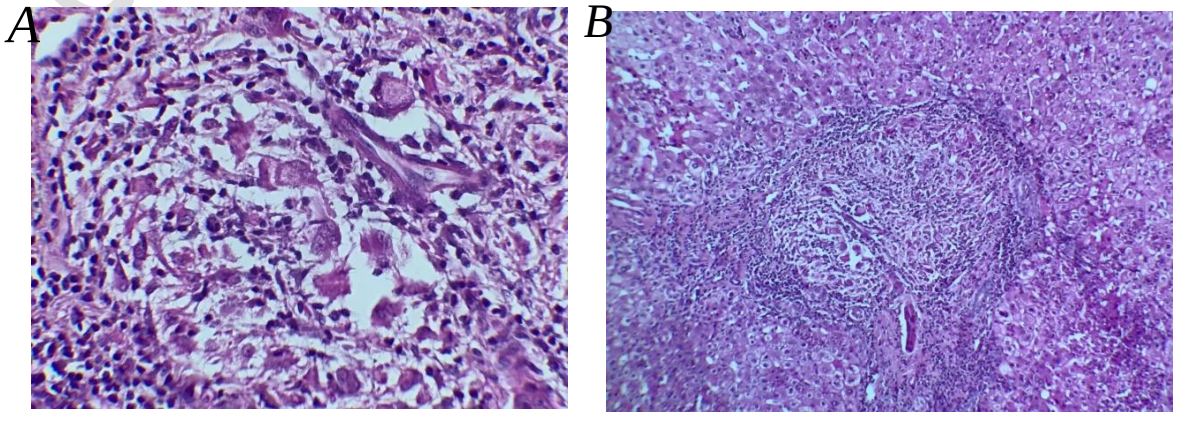

Figure 2: Liver tissue showing granulomatos reaction: A: hematoxylin-eosin (HE) , Original magnification x400 epithelioid granuloma with Langerhan's giant cells without caseating necrosis, B : HE, original magnification x100) epithelioid granuloma with surrounding rim of lymphocytes and fibroblasts.

Discussion:

"Tuberculosis involves the liver and spleen mainly in association with miliary lung tuberculosis through the hematogenous spread, though the spread may also occur from the gastrointestinal tract through the portal vein" [3]. "In 1990, REED and Al described three morphological types of hepatic tuberculosis: miliary tuberculosis of the liver associated with generalized miliary tuberculosis, primary miliary tuberculosis of the liver, and primary tuberculoma or abscess of the liver"[4].Levine and alhad added to this classification two other : pulmonary tuberculosis with liver involvement and tuberculous cholangitis[5]. Case reports of primary hepatosplenic TB in which pathologic examinations have been carried out are rare. In our case, a final diagnosis of primary hepatosplenic TB was done, as there were no other identified TB locations.

"According to the existing literature, symptoms associated with hepatic or splenic tuberculosis are non-specific and can include fever, anorexia and weight loss. However, it may be found incidentally in patients with various clinical settings, such as a palpable mass and abdominal pain" [6-7].

"Radiological findings of hepatic tuberculosis are not specific, although multiple hypodense lesions have been described on CT scans in cases of macronodular tuberculoma of the liver" [8]. "CT scan findings of splenic tuberculosis have also been described: regular hypdense lesions, irregular isodense lesions (abscess) and calcifications" [9].

The differential diagnosis will be made with lymphoproliferative disorder, metastasis and another granulomatous disease like sarcoidosis and fungal infection. "Diagnosis is based on histology throug biopsy with a fine needle of the most accessible lesions. Epithelioid granuloma and giant cells are found in 80- 100 % of cases, with caseous necrosis in 30-83 % of cases or acid-fast bacilli (AFB) in 59% of cases" [10]. PCR technique detecting Mycobacterium tuberculosis may help the diagnosis . In our case , the PCR test helped establish the final diagnosis and came positive on the tissue specimen.

Hepatosplenic tuberculosis treatment includes the standard four-drug regimens with rifampicin, isoniazid, ethambutol and pyrazinamide, similar to any other extra-pulmonary locations , according to different protocols [11]. Our patient was successfully treated with the quadrule therapy for 2 month then, followed by combination therapy (isoniazid, rifampicin) for seven months.

Conclusion: the diagnosis of abdominal TB represents a major challenge for clinicians because it simulates many diseases, making diagnosis difficult. However, we must be aware of the possibility of hepatosplenic tuberculosis in a suggestive clinical and epidemiological context, even in an immunocompetent adult. Radiological imaging is not specific, and liver biopsy and PCR tests are always necessary.

Ethics approval

This work was performed following the code of ethics under the supervision of our institution's medical and ethics committee.

Consent

Informed consent was obtained from the patient for publication of this case report and any accompanying images.

References:

[1] Leader SA. Tuberculosis of the liver and gall bladder with abscess formation: a review and case report. Ann Intern Med 1952;37:594–606

[2] Chen HC, Chao YC, Shyu RY, et al. Isolated tuberculous liver abscesses with multiple hypoechoic masses on ultrasound. Liver Int 2003;23:346–50

[3] Leder RA, Low VHS. Tuberculosis of the abdomen. Radiol Clin North Am 1995;33:691 –705

[4] Reed DH, Nash AF , Valabhji P. Radiological diagnosis and management of a solitary tuberculosous hepatic abscess .Br J Radiol 63 : 902-904 , 1990

[5] Levine C. Primary macronodular hepatic tuberculosis : US and CT appearances , Gastrointest Radiol 15: 307-309 , 1990

[6] Ham HJ, Park EB. Tuberculous cyst of the liver, a case report. Korean J Gastroenterol 1984;16:329-33. 9.

[7] Moon W, Choi MS, Lee JH, Ryu MK, Lee SS, Kang WT, et al. A case of primary solitary tuberculoma of the liver treated with antituberculosis chemotherapy and surgical excision. Korean J Med 2001;61:77-81. 10.

[8] Shin YM. Hepatic tuberculosis presenting as a large liver mass. Korean J Hepatol 2010;16:197-200.

[9] Kawamori Y, Matsui O, Kitagawa K, Kadoya M, Takashima T, Yamahana T. Macronodular tuberculoma of the liver: CT and MR findings. AJR Am J Roentgenol 1992;158:311- 313

[10] Essop AR, Posen JA, Hodkinson JH, Segal I. Tuberculosis hepatitis: a clinical review of 96 cases. Q J Med 1984;53: 465-477 Spiegel CT, Tuazon CU. Tuberculous liver abscess. Tubercle 1984;65:127-131 .

[11] Puri AS, Nayyar AK, Vij JC. Hepatic tuberculosis. Indian J Tuberc 1994; 41: 131-4