

# **Primary hepatosplenic tuberculosis in an immunocompetent Adult**

## **Abstract**

### **Background and aim**

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.

### **Case report**

A 50-year-old man with no medical history presented to our unit, for exploration of weight loss and chronic abdominal pain. The Clinical examination was normal. A contrast-enhanced CT scan of the abdomen showed multiple hypodense hepatic and splenic nodules, not enhanced after injection of the contrast, the liver is totally 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 came back positive. The patient was treated by the quadruple therapy (ethambutol, rifampicin, isoniazid and pyrazinamide) for two months then rifampicin and isoniazid for 7 months. At the six months 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 a possibility in a suggestive clinical and epidemiological context even in an immunocompetent adult.

**Keywords:** tuberculosis, hepatosplenic, immunocompetent

## **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, which is 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 the 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 I Unit of the Military Teaching Hospital Mohammed V Rabat, for exploration of weight loss and weakness. The symptoms had started 3 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 specific pathology, he has no known contacts with active TB or personal history of tuberculosis, and he had no others digestive complains.

Clinical examination revealed a conscious man with a temperature of 37.5 C, a body mass index of 17.97 kg / m<sup>2</sup>. The abdominal examination revealed no tenderness or ascites and no hepatosplenomegaly. The lymph node areas were normal.

Laboratory analyses revealed inflammatory syndrome with Elevated C-reactive protein at 40 mg / L and lymphopenia at 900 / mm<sup>3</sup>. A contrast-enhanced CT (computed tomographic) scan of the abdomen showed multiple hypodense hepatic and splenic nodules, not enhanced after injection of the contrast , the liver is totally infiltrated and irregulareddges and perfusion disturbances giving an encephalic appearance ( figure 1 ). An infectious or neoplastic cause were 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 the quadruple therapy (ethambutol, rifampicin, isoniazid and pyrazinamide) for two months then rifampicin and isoniazid for 7 months, the protocol used in our country for a hepatosplenic tuberculosis infection. The evolution was marked by rapid improvement of the general condition, regaining of 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.

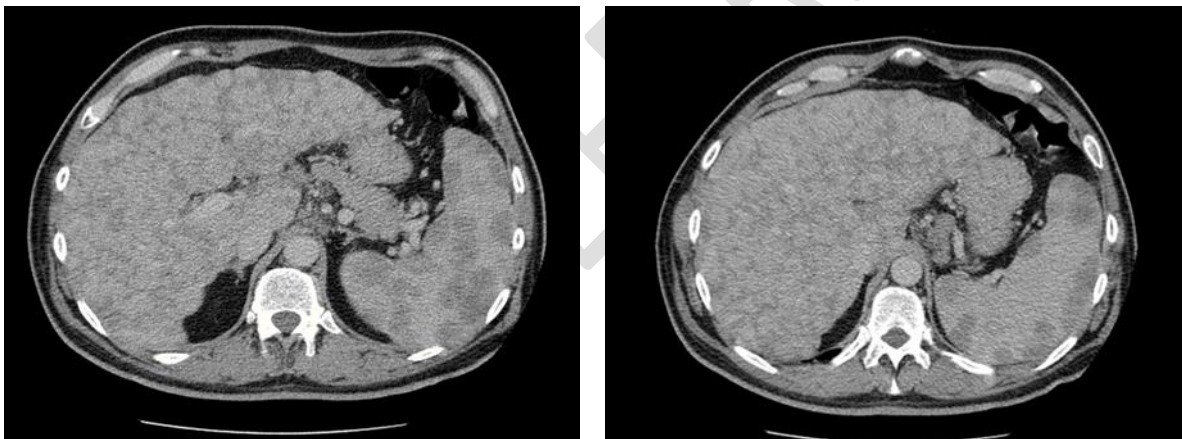


Figure 1: Computed Tomography scan abdomen showing multiple small low-density lesions in liver and spleen.

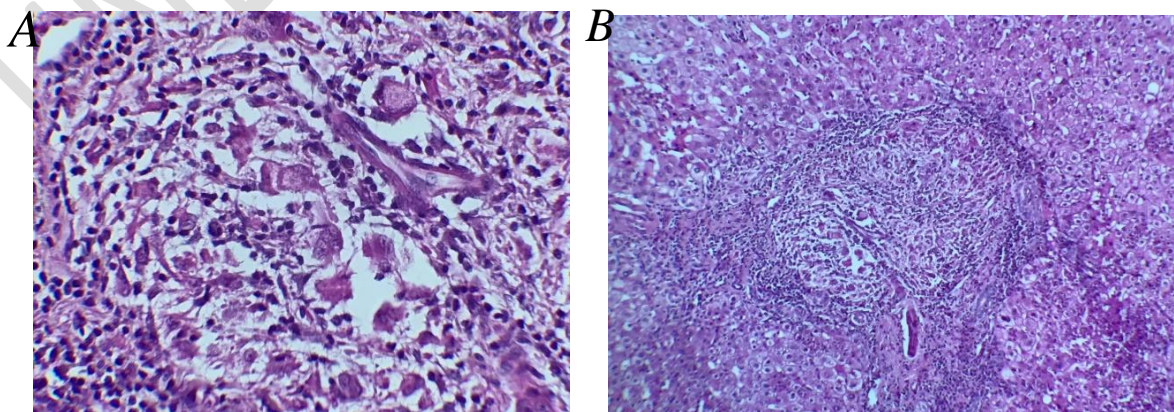


Figure 2: Liver tissue showing granulomatous reaction: A: hematoxylin eosin (HE) , Original magnification x400 epithelioid granuloma with Langerhan's giant cells without caseating necrosis , B :

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 hematogenous spread, though the spread may also occur from the gastrointestinal tract through the portal vein [3]. In 1990, REED and Al has described 3 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 al had added to this classification 2 others : pulmonary tuberculosis with liver involvement and tuberculous cholangitis[5]. Case reports of primary hepatosplenic TB in which pathologic examination 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 literatures, symptoms associated with hepatic or splenic tuberculosis are non specific and can include fever, anorxia and weight loss. However, it may be found incidentally in patients with aother various clinical settings such as a palpable mass, abdominal pain [6-7].

Radiological findings of hepatic tuberculosis are not specific although multiple hypodense lesions have been described on CT scan 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 other granulomatous disease like sarcoidosis and fungal infection. Diagnosis is based on histology through 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 , PCR test helped to establish the final diagnosis and it came positive on the tissue specimen. Hepatosplenic tuberculosis treatment includes the standard four drug regimen with rifampicin, isoniazid ,ethambutol and pyrazinamide similar to any other extrapulmonary locations ,according to different protocols [10]. Our patient was successfully treated with the quadruple therapy for 2 month then followed by combination therapy (isoniazid, rifampicin) for 7 months.

**Conclusion:** the diagnosis of abdominal TB represents a major challenge for clinicians, because it simulates many disease, 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 test are always necessary.

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### **Ethics approval and consent to participate**

The authors declare no conflicts of interest. This work was performed following the code of ethics under the supervision of our institution's medical and ethics committee.

### **Consent for publication**

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