



CASE REPORT

Mistaking primary hepatic tuberculosis for malignancy: Could surgery have been avoided?



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Summary A 56-year-old woman presented with epigastric pain and loss of appetite and weight for the preceding 3 weeks. Clinically, she was jaundiced with upper quadrant abdominal tenderness. Initial blood tests and imaging scans suggested cholangiocarcinoma. Intraoperatively, no malignancy was observed. A frozen section biopsy suggested tuberculosis (TB). However, subsequent serological examination showed that the patient was nonreactive for human immunodeficiency virus, hepatitis B, hepatitis C, and acid-fast bacilli. A chest radiograph also showed no evidence of pulmonary TB. The patient was then placed on antitubercular therapy and her condition improved. Primary hepatic TB was not initially considered during diagnosis because of its low prevalence, but this led to performing an unnecessary surgery on this patient. We review the literature on this rare condition and discuss potential strategies for diagnosing and managing patients with primary hepatic TB.

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1. Introduction

Tuberculosis (TB), a re-emerging disease, is a cause of growing worldwide concern because of its increased unusual presentations. Primary hepatic tuberculoma is rare in healthy immunocompetent patients. Most hepatic involvement in TB is considered secondary because of its association

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with miliary TB. The macronodular form of hepatic TB was first reported in 1858 by Bristowe. Primary hepatic TB results from tubercular bacilli gaining access to the portal vein from a microscopic tubercular focus in the bowel with subsequent healing occurring at the site of entry and leaving no trace.¹

2. Case Report

A 56-year-old woman presented with epigastric pain and loss of weight and appetite for the preceding 3 weeks. Clinically, she was jaundiced with right upper quadrant tenderness. Initial blood investigations revealed anemia, a deranged liver profile consistent with obstructive jaundice, and elevated CA 19-9 level (562 U/mL). Carcinoembryonic antigen (CEA) level was 2.7 ng/mL. Abdominal computed tomography (CT) demonstrated an ill-defined heterogeneously enhancing mass of 3.5 cm × 4.0 cm with periportal lymphadenopathy at the hepatic hilum. Cholangiocarcinoma was diagnosed on the basis of the aforementioned history and clinical findings. Endoscopic retrograde cholangiopancreatography showed a hilar stricture (Fig. 1). Following this, the patient underwent a biliary decompression procedure. Later, she underwent a central hepatectomy. Intraoperatively, yellowish nodules on both liver lobes were observed with mesenteric and omental lymphadenopathies, which were not visualized on CT (Fig. 2). A frozen section biopsy showed predominantly lymphoplasmacytic inflammatory infiltrates, multiple granuloma with central necrosis, and multinucleated Langhans-type giant cells suggestive of TB. In addition, a complete histopathological examination confirmed the aforementioned findings (Fig. 3). In subsequent testing, the patient was nonreactive for human immunodeficiency virus, hepatitis B, hepatitis C, and acid-fast bacilli. In addition, thoracic CT scan showed no evidence of pulmonary TB. The patient was placed on antitubercular therapy, and her condition improved. A CT scan 6 months later demonstrated that the size of the lesions was reduced when compared with the size of lesions observed at presentation (Figs. 4 and 5).

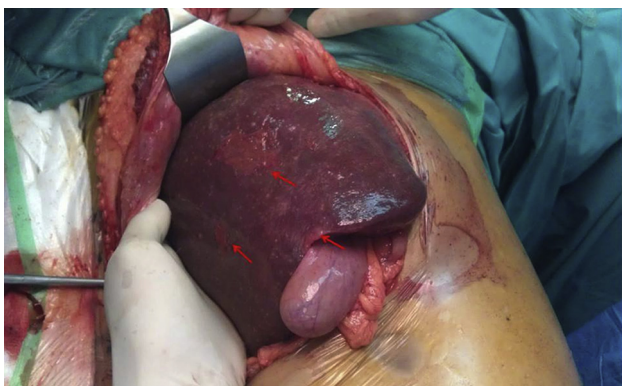


Figure 1 Multiple superficial lesions on both the liver lobes (annotated with arrows). These lesions were not visualized on the preoperative computed tomography scan.

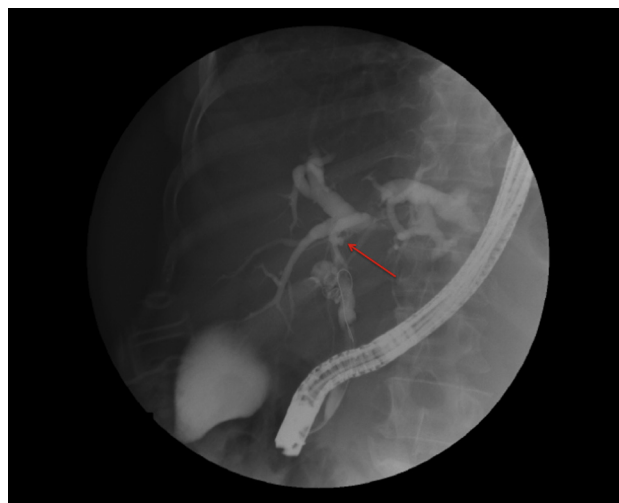


Figure 2 Fluoroscopic image of the biliary tree at endoscopic retrograde cholangiopancreatography. Note the narrowing of the common hepatic duct at the confluence of the intrahepatic ducts (annotated with the arrow) and the dilated left and right intrahepatic ducts.

3. Discussion

Approximately one-third of the world's population is latently infected with *Mycobacterium* TB, with 2 million deaths reported annually, predominantly in developing countries.² In addition, TB remains the leading cause of death among AIDS patients.³ Levin classified hepatic TB as miliary TB, pulmonary TB with hepatic involvement, primary hepatic TB, focal tuberculoma or abscess or tuberculous cholangitis.⁴ Approximately 80% of hepatic TB are of the miliary form. Isolated primary hepatic TB is rare because of the low oxygen tension within the liver, making it unfavorable for mycobacterial growth.⁵

The difficulty in managing patients with primary hepatic TB lies in arriving at correct diagnosis. Low prevalence of primary hepatic TB means that it is not a leading cause in the list of differential diagnosis. Its clinical presentation and results of laboratory and radiological investigation are also nonspecific. The classical presentation of fever, malaise, weight loss, and jaundice may or may not be evident in all cases. Therefore, a high degree of clinical suspicion is required for diagnosis.

The presence of a deranged hepatic function, hypoalbuminemia, anemia, and hyponatremia are not specific to TB. The sensitivity of serology for acid-fast staining bacilli and blood cultures is as low as 0–45% and 10–60%, respectively. Tuberculin skin test is typically positive and when used in combination with polymerase chain reaction, which has a sensitivity and specificity of 58% and 96%, respectively, improves detection rates.⁶ However, these specific tests can be requested only if there is clinical suspicion.

Radiological investigations are nonspecific and may mimic various other benign or malignant conditions.⁷ Numerous other diseases show lesions of a variable density with a peripheral enhancement on abdominal CT scans. Areas of focal calcification and liquefactive necrosis,

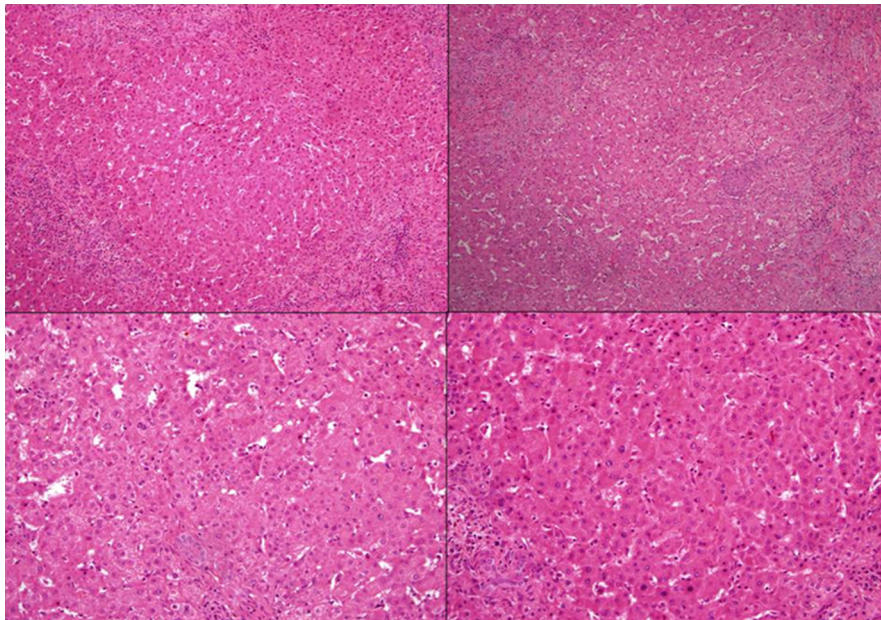


Figure 3 Histological slides of the hepatic tissue under low (10 \times) and high (20 \times) magnification (hematoxylin and eosin stained). These slides demonstrate mixed inflammatory infiltrates of predominantly lymphoplasmacytic cells accompanied by periductal fibrosis. Multiple granulomas with central necrosis and multinucleated Langhans-type giant cells were observed. Lymphocytes and a rim of fibroblasts also surrounded these granulomas. No features of malignancy were observed.



Figure 4 Axial slice, portovenous phase of the patient's computed tomography scan at presentation. Note the ill-defined hypodense lesion (arrow) in the region of the confluence of the hepatic duct. The features were suggestive of a hilar cholangiocarcinoma as they exhibited a slight enhancement with contrast. Note the dilated left and right intrahepatic ducts.

indicating simultaneously existing different pathological stages, are observed on CT scans in hepatic TB.⁸ However, they are also observed in liver abscesses.

Therefore, tissue histology is the most reliable method for correct diagnosis. The samples for tissue histology are most effectively obtained with laparoscopic-assisted liver biopsy for reducing the risk of parietal tumor seeding when



Figure 5 Axial slice, portovenous phase of the patient's computed tomography scan 6 months after antitubercular therapy. Note that the hilar lesion (arrow) is now smaller in size. The intrahepatic ducts are also less dilated.

a lesion is in fact a malignancy. Other features suggesting malignancy may also be explored during the procedure. A frozen section of a hepatic lesion can help health care providers decide the appropriate next step in the management of the disease. Although percutaneous biopsy is a viable option, seeding along the needle track is a small but serious concern. A poor yield of representative tissue is another disadvantage. Diaz et al⁶ reported that, using guided percutaneous needle biopsy, only 2 of 21 cases of local hepatic TB were correctly diagnosed.

Our patient neither had previous exposure to TB nor presented with the classical signs of the disease. The investigation results were not specific to a diagnosis of TB. This was confounded by the elevated CA 19-9 level. This misdirection probably sidetracked us from considering TB as a possible differential.

Diagnosing a tubercular lesion of the liver preoperatively remains challenging. Although rare, it should be given greater consideration in the differential diagnosis of hepatic lesions. Thus far, a diagnostic laparoscopy is still considered an effective diagnostic tool in uncertain cases. This procedure, although invasive, allows for a more thorough assessment of suspicious hepatic lesions. Confirmation with frozen section biopsy, intraoperative ultrasound, and subsequent liver resection can also be performed in the same clinical setting, if deemed necessary. This can effectively reduce unnecessary work-up and delay in treatment.

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