



# OBSTRUCTIVE JAUNDICE SECONDARY TO HEPATIC HILAR TUBERCULOSIS WITHOUT PULMONARY INVOLVEMENT

Mohammad N. Kloub<sup>1</sup>, Khalid Elfert<sup>2</sup>, Ahmed Elnajjar<sup>3</sup>, Ahmad Alnasarat<sup>4</sup>, Ghaith Alhadidi<sup>5</sup>, Atheer Anwar<sup>5</sup>, Raed Atiyat<sup>6</sup>

<sup>1</sup> Department of Internal Medicine, Saint Michael's Medical Center, Newark, USA

<sup>2</sup> Department of Internal Medicine, SBH Health System, New York, USA

<sup>3</sup> Department of Internal Medicine, Gastroenterology and Hepatology, Hamad Medical Corporation, Doha, Qatar

<sup>4</sup> Department of Internal Medicine, Wayne State University/Detroit Medical Center Sinai Grace, Detroit, USA

<sup>5</sup> General physician

<sup>6</sup> Department of Internal Medicine, Division of Gastroenterology and Hepatology, Saint Michael's Medical Center, Newark, USA

**Corresponding author:** Mohammad N. Kloub    **e-mail:** Mohammad\_kloub98@yahoo.com

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## ABSTRACT

Tuberculosis (TB) is primarily a respiratory infection with huge mortality and morbidity worldwide. Extrapulmonary TB infection is common, affecting lymph nodes, pleura, and abdomen, but the primary biliary presentation without lung involvement is exceedingly rare. We report on a 38-year-old male patient presented with isolated obstructive jaundice secondary to TB infection. This case highlights the importance of considering TB infection in the differential diagnosis of obstructive jaundice, especially in the endemic area. We also provide a literature review on TB infection, mainly in the biliary tract.

## KEYWORDS

Tuberculosis, biliary TB, obstructive jaundice

## LEARNING POINTS

- Tuberculosis (TB) can affect the biliary system, mimicking cholangiocarcinoma without pulmonary involvement.
- Early recognition of biliary TB and treatment can prevent permanent complications and invasive intervention requirements.
- Using standard anti-tuberculous medications has shown high efficiency in treating and eradicating mycobacterial infection in such locations.

## INTRODUCTION

Tuberculosis (TB) is a mycobacterium infection caused by *Mycobacterium tuberculosis* and is considered a main infectious cause of serious morbidity and mortality, which

is reported to have claimed around 1.7 million lives in 2016<sup>[1]</sup>. However, with the efforts and policies implemented to control the transmission of TB, transmission has been reduced and is expected to decrease annually by



10%<sup>[2]</sup>. Although TB is primarily a respiratory infection, extrapulmonary manifestation is quite common (30%)<sup>[3]</sup>. Gastrointestinal manifestations were observed among 11% of patients, with the ileum being the most commonly GI-involved organ<sup>[4]</sup>. Moreover, it has been reported in the literature that TB could affect the hepatobiliary system, but the primary biliary presentation is a rare entity, and in this case re-port, we shed light on this important aspect.

## CASE DESCRIPTION

A 38-year-old man born and raised in India presented experiencing right upper quadrant pain for ten days, associated with itching and dark urine. He had no history of fever, weight loss or respiratory symptoms. On examination he was icteric, but his abdomen was soft with no tenderness. The results of the basic workup (Table 1) showed elevated direct bilirubin, alanine transaminase (ALT), aspartate transaminase (AST) and alkaline phosphatase (ALP). HIV antibodies, hepatitis anti-bodies, carcinoembryonic antigen (CEA), CA 19-9, sputum acid-fast bacilli, sputum TB PCR and QuantiFERON TB tests were all negative. A chest X-ray was unremarkable; a Mantoux tuberculin skin test was not done as the patient had received BCG vaccine earlier.

Ultrasound of the abdomen revealed echogenic sludge within the gallbladder lumen, mild prominent central intrahepatic biliary duct, and prominent upper common bile duct (CBD) measuring 9 mm. Magnetic resonance cholangiopancreatography (MRCP) showed a partially obstructing subacute narrowing in the mid-CBD with wall enhancement. Also, it showed a cluster of necrotic conglomerate peripancreatic lymph nodes. Endoscopic ultrasound (EUS) (Fig. 1 and 2) was performed afterwards and showed a mass lesion adjacent to the pancreatic head and neck at the liver hilum compressing the proximal CBD, measuring 24 × 19 mm.

A fine needle biopsy was obtained from the mass lesion at the liver hilum, and the histopathological examination revealed necrotising granulomatous inflammation. Moreover, TB PCR and culture tests from the same lesion were positive. The patient was started on anti-TB medication (isoniazid, rifampicin, pyrazinamide, and ethambutol) for a total

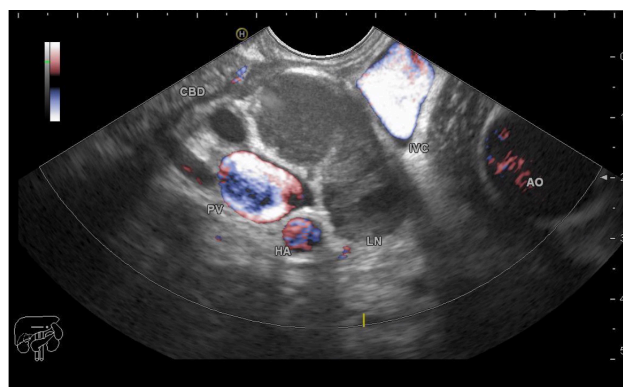


Figure 1. Endoscopic ultrasound images demonstrate the mass/enlarged lymph nodes at the liver hilum compressing the common bile duct. CBD: common bile duct, PV: portal vein, HA: hepatic artery, LN: lymph node, IVC: inferior vena cava, AO: aorta.

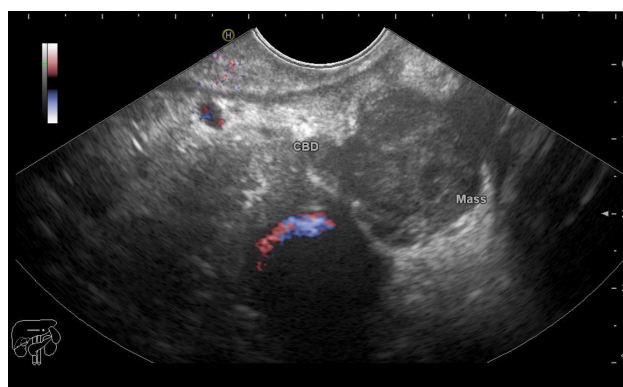


Figure 2. Endoscopic ultrasound images demonstrate the mass/enlarged lymph nodes at the liver hilum compressing the common bile duct. CBD: common bile duct.

duration of six months and followed in the Gastrointestinal clinic, where he reported total resolution of his symptoms, and repeated blood tests during his visits revealed improvement of bilirubin, liver enzymes and ALP until they reached normal levels after three months of treatment.

## DISCUSSION

Although TB infection is a common respiratory infection, it can affect any organ, and abdominal organ involvement is one of the most prevalent forms of extrapulmonary

	Results	Normal value
Bilirubin direct	46.30 mmol/l	0–5.1 mmol/l
ALT	478.20 U/l	0–40 U/l
AST	270 U/l	0–37 U/l
ALP	416 U/l	40–129 U/l
CRP	11.20 mg/l	0–5 mg/l
HIV antibody	Negative	
Hepatitis antibodies	Negative	
QuantiFERON TB	Negative	

Table 1. Blood test results

manifestations. This happens even in the absence of lung involvement, as only 20–25% of patients with gastrointestinal TB have concurrent pulmonary TB, which can be explained by direct swallowing of the infected sputum from primary pulmonary TB<sup>[4,5]</sup>. While the small bowel is the most commonly affected gastrointestinal organ, TB infection can occur in any part of the gastrointestinal system, including the hepatobiliary system. Biliary TB (BTB) is rare, and the first case of isolated BTB was only recognised and reported in 1989. BTB can occur due to primary biliary involvement or due to compression of the biliary tree by affected adjacent organs, such as affected lymph nodes or hepatic granuloma. BTB pathogenesis includes spreading from the portal tract to the bile duct (which is the most common way of infection), inflammation-related periportal adenitis and ascending through the ampulla of Vater and along the CBD<sup>[5,6]</sup>.

Patients with BTB usually present with weight loss, abdominal pain, jaundice, and anorexia mimicking choledocholithiasis, cholangiocarcinoma and other causes of obstructive jaundice. Moreover, biliary involvement tends to be associated with biliary strictures, making it difficult to differentiate from cholangiocarcinomas<sup>[5,6]</sup>.

Different imaging modalities can be used to assess the biliary tree including ultrasound, magnetic resonance cholangiopancreatography (MRCP), endoscopic retrograde cholangiopancreatography (ERCP) and EUS. Imaging usually reveals a mass lesion and ductal dilatation that resemble cholangiocarcinoma, which is a more likely diagnosis in such cases. Nevertheless, TB should be considered in the differential diagnosis, particularly in patients who immigrated from endemic areas. While ERCP has the advantage over other imaging modalities by allowing the placement of biliary stents to decompress the biliary systems, EUS is considered an important diagnostic tool. The definitive diagnosis of a primary hepatobiliary TB is made by acid-fast bacilli smear, culture of a specimen and histopathological evidence of caseating granuloma, which can be obtained by fine needle aspiration/biopsy guided by EUS<sup>[5-8]</sup>.

Using standard anti-tuberculous medications has shown high efficiency in treating and eradicating mycobacterial infection in situations such as in our case. Notably, the strictures left behind may require surgical or endoscopic interventions on an individual basis<sup>[9]</sup>.

## CONCLUSION

BTB is an exceptionally rare but potentially life-threatening infection with huge mortality and morbidity. This report highlights the importance of considering extrapulmonary tuberculosis as a cause of obstructive jaundice and recognising it as a part of the differential in patients with hepatic hilar mass lesions. This is relevant even with negative TB workup from the sputum, especially in places where TB infection is still common such as South-east Asia. Early recognition and treatment are crucial to prevent complications.

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