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### RESEARCH ARTICLE

#### PRIMARY BILIARY TUBERCULOSIS MIMICKING A KLATSKIN TUMOR: RARE CAUSE OF OBSTRUCTIVE JAUNDICE

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#### Abstract

Biliary tuberculosis is a very rare disease especially in its isolated form that can present with an obstructive jaundice mimicking other non-infectious causes such as cholangiocarcinoma. It poses difficulty in diagnosis and often requires surgical intervention to exclude underlying malignancy. Here we report a case of obstructive jaundice which was initially thought to be due to a cholangiocarcinoma but postoperatively it was found to be tuberculosis.

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#### Introduction:-

Mycobacterium tuberculosis (TB) is a contagious and potentially fatal disease that usually affects the lungs. In developing countries gastrointestinal tuberculosis is not uncommon but TB of the bile duct is extremely uncommon. However, it can be extra-pulmonary in 15-20% of the cases of which abdominal tuberculosis accounts for 11-15% and hepatic TB for less than 1%.

The clinical and radiological manifestations of hepatobiliary TB can be mistaken for malignant lesions leading to erroneous clinical diagnosis and unnecessary surgical intervention [1]. Hence, it is important to be aware of the clinical profile of biliary TB, which will help to rule it out in any case of biliary tract malignancy, especially in countries where tuberculosis is endemic [2].

The pre-operative tissue diagnosis of cholangiocarcinoma is difficult because of its location [3]. The diagnosis is mostly based on postsurgical histopathological examination showing caseating granuloma and Langhans giant cells [2].

We present a case of biliary tuberculosis that was misinterpreted as unresectable cholangiocarcinoma.

#### Case Report:

A 19-year-old male not known to have any significant medical history presented with intermittent fever of 2 months duration and progressively increasing cholestatic jaundice and weight loss for 1 month.

On examination, he was febrile, deeply icteric with scratch marks all over the body without hepatomegaly or ascites. No lymph nodes were palpable.

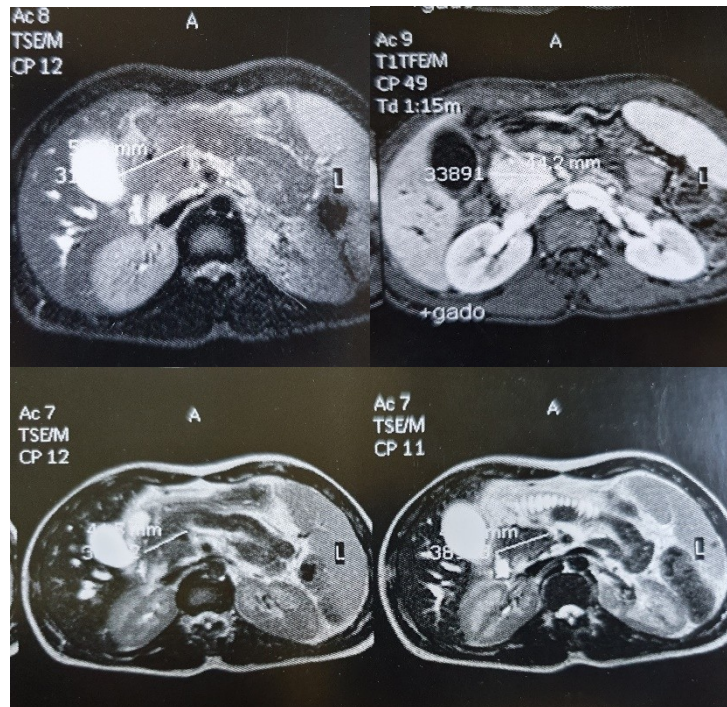
Blood parameters were as follows: Hemoglobin 11.8 g%, white blood count 6850/L, total bilirubin 248 mg/dl (conjugated 202), alkaline phosphatase 525, aspartate aminotransferase 110 and alanine aminotransferase 109. Viral

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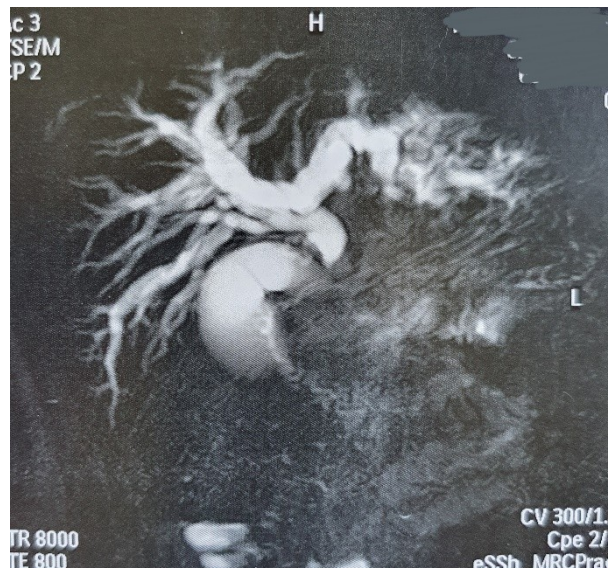
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markers for hepatitis were nonreactive. Coagulation profile and renal functions were normal. Chest X-ray was normal.

The CT scan revealed a hypodense hepatic hilar mass with regular contours in contact with the pancreatic head measured at 54 \* 45 \* 44 mm associated with a significant dilation of the intra and extrahepatic bile ducts. Likewise, there was encasement of the portal vein and a close contact with the common hepatic artery. Further work-up with a liver magnetic resonance imaging demonstrated a tumoral obstacle in the hilary region reaching the head of the pancreas responsible for dilation of the biliary tree. (Fig 1 -2)



**Figure 1:-** Magnetic resonance imaging of the liver demonstrates hepatic hilar mass in contact with the pancreatic head.



**Figure 2:-** Magnetic resonance cholangiopancreatography shows a dilation of the bile ducts upstream of a stop below the biliary confluence.

A diagnosis of unresectable cholangiocarcinoma was suggested. The patient underwent a biopsy of the suspicious mass. The operative findings were a firm mass in and around the entire extrahepatic bile ducts encasing the portal vein and a mass in the head of the pancreas. Histopathology revealed multiple epithelioid cell granulomas, some showing a central area of caseation necrosis with Langhans giant cells and areas of fibrosis, no evidence of tumor was seen. A final diagnosis of biliary tuberculosis was thus made.

The patient was started on anti-tuberculosis treatment in form of Isoniazid, Rifampicin, Pyrazinamide and Ethambutol for 6 months (2RHZE/4RH), the patient showed significant response to treatment with dramatic improvement of liver function test.

The clinical and radiological evolution under anti-bacillary treatment was favorable. A follow-up liver function test 3 months after starting the treatment showed normalization of alkaline phosphatase along with improvement of total bilirubin. Magnetic resonance cholangiopancreatography showed a circumferential and regular thickening of the main bile duct with no image of caliber disparity and a normal sized pancreas (Fig 3). After completion of 6 months of anti-tuberculosis treatment, patient was afebrile, jaundice free, regained his appetite and liver span normalized.



**Figure 3:-** Magnetic resonance imaging shows normal sized pancreas and absence of dilation of the bile ducts.

### Discussion:-

Hepatobiliary or pancreatic TB is rare and the preoperative diagnosis is difficult. There are few citations of intrahepatic tuberculosis, but isolated bile duct tuberculosis is extremely rare [4].

Hepatobiliary TB may be caused by three ways: (1) Spread of caseous material from the portal tracts into the bile ducts (most often), (2) Secondary inflammation-related tuberculous periportal lymphadenitis, (3) Spread of caseous material through the ampulla of Vater and ascending along the common bile duct. [5]

Four different mechanisms have been described in the literature as causes of obstructive jaundice secondary to hepatobiliary tuberculosis: porta hepatis TB lymphadenitis causing extrinsic compression of the common bile duct, head of pancreas involvement mimicking a pseudoneoplasm and obstructive the distal common bile duct, a retroperitoneal mass caused by TB obstructing the distal bile duct, and a direct involvement of biliary epithelium or pericholangitis resulting in a single or multiple strictures mimicking cholangiocarcinoma [1].

The clinical presentation of biliary TB is slow and insidious, and it is usually indistinguishable from malignancy. The most common symptoms are abdominal pain, jaundice, malaise, anorexia, weight loss, and fever [2].

Biological clues to the presence of biliary TB are not specific. Patients with biliary TB can have an impaired liver function test with a cholestasis picture secondary to obstruction, mimicking other non-infectious causes such obstructive biliary stone, primary sclerosing cholangitis, and a malignant cholangiocarcinoma [1].

The clinical and cholangiographic features of tuberculous biliary stricture are usually not helpful in differentiating tuberculosis from other common causes of endo-luminal biliary stricture such as primary sclerosing cholangitis or cholangiocarcinoma [6].

Preoperative diagnosis of TB as the cause of obstructive jaundice is extremely difficult often compelling major resectional surgery. In most of the cases, final diagnosis is reached in the postoperative period by the histological finding of caseation necrosis and epithelioid granuloma formation and Langhans giant cells [5]. In our patient diagnosis was made after surgery and histopathologic findings.

Treatment of hepatic tuberculosis includes the standard four-drug regimen with Rifampicin, Isoniazid, Ethambutol, and Pyrazinamide as for any other form of extra pulmonary tuberculosis [7]. The challenge in the management is the high risk of anti-TB hepatotoxicity, especially in the setting of liver cirrhosis. In most of the reported cases, the biliary stricture does not resolve with medical therapy alone and requires surgical intervention and biliary metallic stent placement. However, to our knowledge, biliary stricture is completely resolved only in one case after medical therapy without surgery or permanent biliary drainage procedure [6]. In our patient, after completion of 6 months of anti-tuberculosis treatment only, the jaundice was completely resolved and the patient felt well and liver function became normal.

### **Conclusion:-**

Biliary tuberculosis closely mimics malignancy. Hence even though it is a rare entity, it should be considered in the differential diagnosis of biliary tract carcinomas, especially in areas where tuberculosis is highly prevalent.

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