# A Study of 200 Cases of Space Occupying Lesion in Liver; Incidental Detection of Two Cases of Hepatic Tuberculosis with Uncommon Presentation

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Tuberculosis is one of the commonest infectious diseases in the Asian countries including Bangladesh. It can involve many systems, organs or tissues excepting a few organs, like CNS, pancreas, blood vessel and heart. Although granulomatous inflammation of liver is less common but multinodular hepatic tuberculosis is quite uncommon entity which comprises only 2.8% of all granulomatous hepatic infection reported from India. It frequently presents as a non- specific syndrome, with systemic manifestations which can sometime result in a diagnostic dilemma. A high index of suspicion is required and a definitive diagnosis can be very difficult. In the present study of 200 cases of space occupying liver lesions. We get two cases of hepatic tuberculosis. One was a 40Yrs old female and other was 38 yrs old male patient presented with non significant weight loss, weakness and mild jaundice. Both the cases were clinically suspected as a case of chronic liver disease (CLD). USG of hepatobilliary system reveal multiple nodular masses on both lobe of liver, suspecting a case of Hepatocellular Carcinoma (HCC), metastatic carcinoma or cirrhosis of liver. USG guided Fine needle aspiration biopsy (FNAB) from hepatic mass reveal primary hepatic tuberculosis.

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**Key words:** Liver, tuberculosis, space occupying lesion

## Introduction

Tuberculosis is a chronic disease, commonly affected the pulmonary and extra pulmonary tissue like gut, lymphnodes and peritoneum.[1,2] The local form of hepatic tuberculosis is much less common.[3-4] The classical clinical features of tuberculosis, especially in case of extra pulmonary localization may be absent. In that case it may remain a main cause of pyrexia of unknown origin (PUO).[4] Hepatic tuberculosis should be considered in the differential diagnosis of this condition, especially if there is hepatomegaly or diffuse nodular lesion in liver.[5] Definitive diagnosis of this condition can be very difficult. But histological or bacteriological examination of liver tissue obtained by USG guided aspiration is helpful.[3,4] Some time therapeutic trial with anti tubercular drugs in case of strong clinical suspicion may be considered.

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## Methods

The present study is a retrospective cross sectional study among the patient having multiple space occupying lesions (SOL) in liver with sign and symptom of suspected CLD, primary or secondary tumors of liver. The cases were taken from a private laboratory at Rajshahi city from January 2014 to January 2016. A total of 250 cases were primarily selected on the basis of clinical history, sign and symptoms of patients, ultrasonography (USG) and CT scan analysis report.

The slides of the patients were primarily examined and 50 cases were discarded due to inadequacy of material and ill preparation. Well prepared slides were routinely stained with Hematoxylene and Eosin (H&E) stain methodically by expert technologist.

Then the slides were examined under light microscope. The slides from the granulomatous inflammation of suspected tuberculosis were also stained with Zeihl-Neelsen stain to identity Mycobacterium Tuberculosis.

## Results

On careful examination of 200 cases suspected primary or secondary malignant tumor 110 (55%) were diagnosed hepatocellular carcinoma, 58(29%) were metastatic carcinoma, 25 (12.5%) were non specific inflammatory lesion, 05 (2.5%) were cirrhosis of liver and 2 (1.00%) were granulomatous hepatitis.

Table I: Diagnosis of space occupying lesion of liver

| Diagnosis | No | % |
|---|---|---|
| Primary malignant tumor (Hepatocellular Ca) | 110 | 55% |
| Metastatic Carcinoma | 58 | 29% |
| Non specific inflammation (Abscess, Hydatid cyst, Hepatic amoebiasis) | 25 | 12.5% |
| Cirrhosis/Cirrhotic change | 5 | 2.5% |
| Hepatic tuberculosis | 2 | 1% |

The smears from granulomatous hepatitis were then stained with ZN stain and confirmed by identification of Mycobacterium tuberculosis.

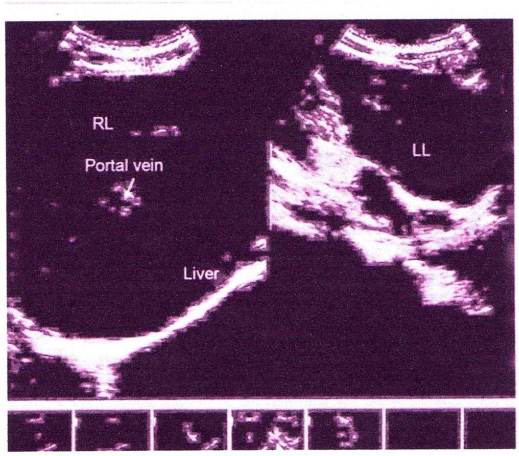


**Fig. 1:** USG of hepatobiliary system of patient showing coarse hepatic echotexture

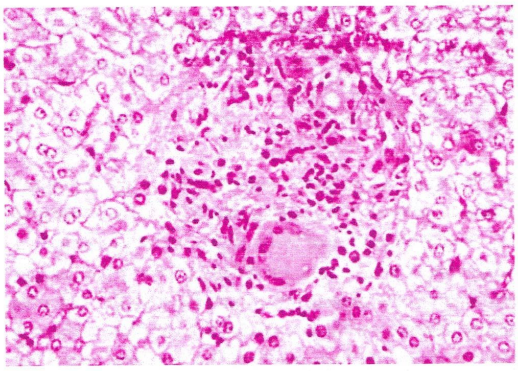

**Fig. 2:** Hepatic histopathology of patient showing granuloma (H&E)

## Discussion

Pyrexia of unknown origin (PUO) constitutes one of the greatest challenge in clinical practices. Multiple etiologies should be considered when PUO is present and can be grouped into the following categories: infection, malignancy, collagen vascular diseases, miscellaneous and undiagnosed causes. However infection is the most common cause and accounts for approximately 20% to 40% of all cases. Tuberculosis mainly of extra pulmonary localization remains an important cause of

PUO.[6-7] Localized hepatic tuberculosis is a distinct clinical form of tuberculosis with signs and symptoms related to the hepatic injury, with minimal or no extra hepatic involvement. Hepatic tuberculosis constitutes less than 1% of all cases of this infection[8]. Liver involvement may occur in the primary and secondary forms and is particularly frequent in patients with disseminated milliary tuberculosis. Pathogenesis of these two forms of hepatic tuberculosis is different. Hematogenous dissemination of the bacteria seems to be the route by which the bacilli reach the liver in milliary hepatic tuberculosis. On the other hand; in local hepatic tuberculosis the bacilli probably enter the liver from intestine via portal vein.

Most of the hepatic tuberculosis occurred in association with milliary tuberculosis through haematogenous dissemination from respiratory tract or GI tract. Levine classified hepatic tuberculosis into various form of presentation, such as i) milliary tuberculosis, ii) primary pulmonary tuberculosis with liver involvement, iii) primary liver tuberculosis, iv) tuberculoma and v) tuberculous cholangitis.[13]

Patient with hepatic tuberculosis have variable clinical presentation and no consistent clinical and biochemical findings; which makes the diagnosis difficult. The presenting symptoms are usually non specific and are mainly constitutional in nature, they include fever, night sweat, malaise, anorexia, weight loss and abdominal pain.[8-9] Abdominal tenderness in epigastrium or right upper quadrant is a common manifestation[9]. Hepatomegaly is observed in most cases and has been frequently associated with jaundice. Jaundice occurs due to direct destruction of the liver parenchyma by tuberculosis, but obstructive process may be present.[9-10]

The most frequent clinico-laboratory findings in hepatic tuberculosis are hepatomegaly, elevated serum alkaline phosphatase level, fever, weight loss and abdominal pain; all the features were present in our cases. A moderate or marked increase in the serum bilirubin, is suggestive of hepatic tuberculosis; however, these findings are not specific and may occur in other conditions, such as metastatic carcinoma, liver abscess, ecehinococcosis, amyloidosis, granulomatous diseases of varying etiologies and active cirrhosis.[4]

The radiological findings of hepatic tuberculosis have a low specificity. USG and CT scan findings usually reflect different stages of disease varying from granulomatous tubercle with or without caseous necrosis to fibrosis and calcification in the healing stage. USG findings of hepatic tuberculosis usually show hypo-echoic lesion,[14] but may demonstrated hyper-echoic lesion as well. Therefore, the ultimate diagnosis of hepatic tuberculosis depends upon the demonstration of AFB in the material obtained from the lesion.

AFB is most easily found on caseous material but failure to detect AFB should not detect diagnosis, specially in high TB prevalence country like Bangladesh. Recently polymerase chain reaction (PCR) has been found to be a useful diagnostic tool for hepatic tubercular lesion,[15] as it enables rapid identification of *Mycobacterium tuberculosis s* and expedites a treatment decision. More over detection of AFB from ZN stained smear, culture using a BACTEC TB 460 instrument and polymerase chain reaction (PCR) assay for *Mycobacterium tuberculosis s* finally help to confirm the diagnosis.

According to a review of several series of granulomatous hepatitis, tuberculosis is the second most common single cause of hepatic

granuloma and it is by far the main cause of granulomatous hepatitis among infections disease.[11]

Histopathological examination of liver tissue obtained by Fine needle aspiration cytology (FNAC) is the most reliable diagnostic method. USG, CT and MRI are very sensitive for the detection of hepato-splenic nodules,, but differential diagnosis from other conditions, such as metastases, fungal abscesses and lymphoma, is difficult.[8] The tuberculin skin test is of little value as a diagnostic method. Other conditions can be associated with positive reaction and this test can be negative in patients with tuberculosis.[12]

In this study majority cases were primary and secondary tumor. Among the metastatic carcinoma, most common primary site is GIT, specially gall bladder. Among the primary cases a large number of hepatocellular carcinoma cytological features were strongly co-related with previous viral infection. Besides the neoplastic disease; the next large groups of patients were inflammatory hepatic lesion which includes amoebic abscess, hydatid cyst and bacterial abscess.

*Conclusion*

In conclusion, tuberculosis of the liver should be considered in any case of unexplained weight loss, jaundice, hepatomegaly, hepatosplenomegaly or PUO; and in suspicious cases, liver biopsy should be performed without delay, because this clinical entity can be successfully treated with anti tubercular drugs.

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