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# Isolated Tuberculosis of Gallbladder: Case Report of a Rare Disease with the Review of Literature

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**Abstract:** ***Tuberculosis of the gallbladder is an extremely rare entity with only few case reports in the literature. Gallbladder tuberculosis is often found in association with gallstones or cystic duct obstruction and it may be a part of miliary tuberculosis, abdominal tuberculosis, primary isolated gallbladder tuberculosis and as acalculous cholecystitis in immunocmpromised patients. Preoperative diagnosis of gallbladder tuberculosis is very difficult as non of the clinical signs, symptoms and radiological findings are pathognomonic. Histopathology confirms the diagnosis. Herein, we are presenting a case of 48 years female who presented with recurrent right upper abdominal pain associated with nausea and vomiting for eight months. Following ultrasonographic findings of calculous cholecystitis, exploratory laparotomy was done. Gall bladder was densely adherent to liver bed and the wall was thickened mimicking carcinoma. Histopathological examination confirmed the diagnosis of gall bladder tuberculosis. We are presenting this case because of its rarity and simulation with malignancy.***

**Keywords:** gallbladder tuberculosis, miliary tuberculosis, cystic duct obstruction, caseous necrosis, hepatobiliary tuberculosis

## 1. Introduction

Although intraabdominal tuberculosis is common, it rarely involves biliary system and gallbladder.[1] Gallbladder tuberculosis is an extremely rare entity with less than 120 case reports till date in english literature since its first description by Gaucher in 1870.[2] Incidence of gallbladder tuberculosis is increasing due to surge in cases of abdominal tuberculosis[1] and HIV. Gallbladder tuberculosis is more common in males than females with a male : female ratio of 2:1. Most of the cases are seen in patients above 30 years of age with a range of 11-50 years.[3] Very high content of bile, alkaline pH and bile salts are the reasons behind the relative resistance of gallbladder to tuberculosis.[1,4] Gallstones causing mucosal damage and cystic duct obstruction increases the risk of tubercular cholecystitis as evident by the fact that almost all cases of tubercular cholecystitis have been associated with coexistent gallstones.[4,5] Clinically patients present with nonspecific signs and symptoms like upper abdominal pain with or without nausea and vomoiting, anorexia fever, malaise, weight loss and jaundice.[1,6] Radiological findings of gallbladder wall thickening, mass lesion and dense adhesion in some cases raise the suspicion of malignancy.[6] Herein, we present a case of 48 years old female who presented with recurrent right upper abdominal pain and diagnosed as a case of tubercular cholecystitis on histopathological examination.

## 2. Case Report

A 48 year old female presented with complaints of recurrent right upper abdominal pain associated with nausea and vomiting for eight months. On examination patient was afebrile and anemic. Abdominal examination revealed tenderness in right hypochondrium. Systemic examination was within normal limits, no organomegaly or mass was noted. Past medical, surgical, family and contact history were unremarkable.

Laboratory investigations revealed haemogolobin; 9gm/dl, TLC; 9800/cmm, DLC; polymorphs70 lymphocytes27 eosinophils2 monocytes1, ESR; 76 mm in first hour, blood sugar (fasting) ; 82mg/dl, serum creatinine; 0.8mg/dl, blood urea; 22mg/dl, LFT within normal limits. Moutoux test, sputum Ziehl-Neelsen stain for acid fast bacillus (AFB) and serological tests for Hepatitis B, hepatitis C and HIV were negative.

Ultrasonography showed multiple gallstones and thickened gall bladder wall. Hepatic space occupying lesion or lymphnodal enlargement was not seen. Other visceral organs were normal. X-ray chest revealed unremarkable lung fields.

Following initial conservative management laproscopic cholecystectomy was done. Intraoperative findings showed an enlarged gallbladder with dense adhesion to hepatic bed and thickened wall raising the suspicion of malignancy.

Adjacent visceral organs, peritoneum and omentum were unremarkable.

## 3. Histopathology

Resected specimen measured 7X3X1.5 cm. Outer surface was irregular, congested and greyish brown in colour, mucosa was atrophied and the lumen was filled with multiple blackish stones and thick yellowish slough like material. Wall thickness was 6 mm. No mass lesion was identified. Attached liver bed was unremarkable. Microscopic examination revealed denuded mucosa and numerous epithelioid granulomas scattered in entire thickness of gallbladder wall. Many granulomas showed Langhans type of giant cells and central caseation. Focal areas of fibrosis were also seen. Attached liver parenchyma showed normal hepatic lobular architecture with mild periportal inflammation. No atypical or dysplastic cells were seen. AFB and Periodic acid - schiff (PAS) stain was negative.

Based on histopathological findings a diagnosis of caseating granulomatous cholecystitis consistent with tuberculosis was furnished. Patient was prescribed antitubercular therapy and responded very well. She is symptom free after completion of antitubercular therapy.

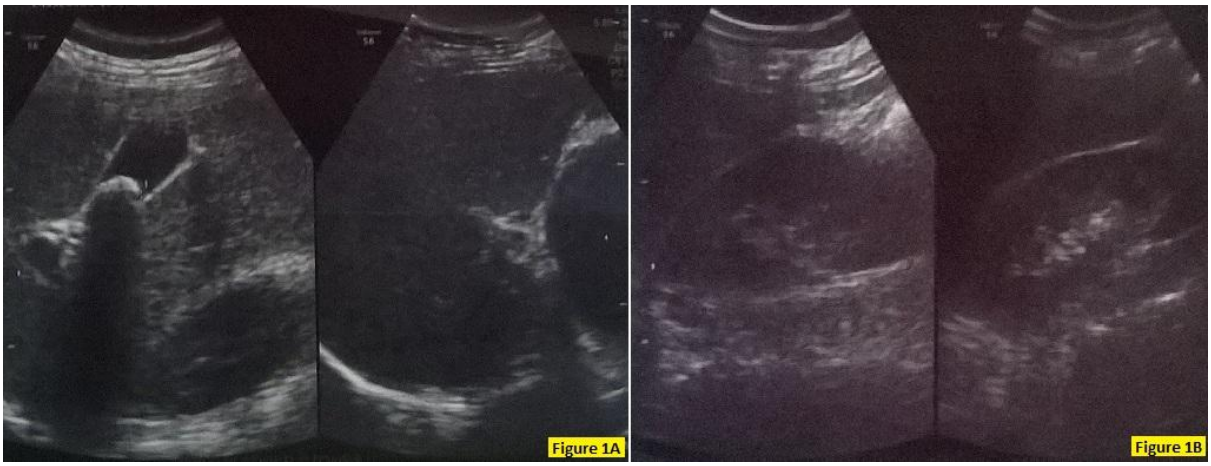


**Figure 1:** A and 1B, ultrasonographic pictures: demonstrate multiple hyperechoic gallstones and thickened gallbladder wall.

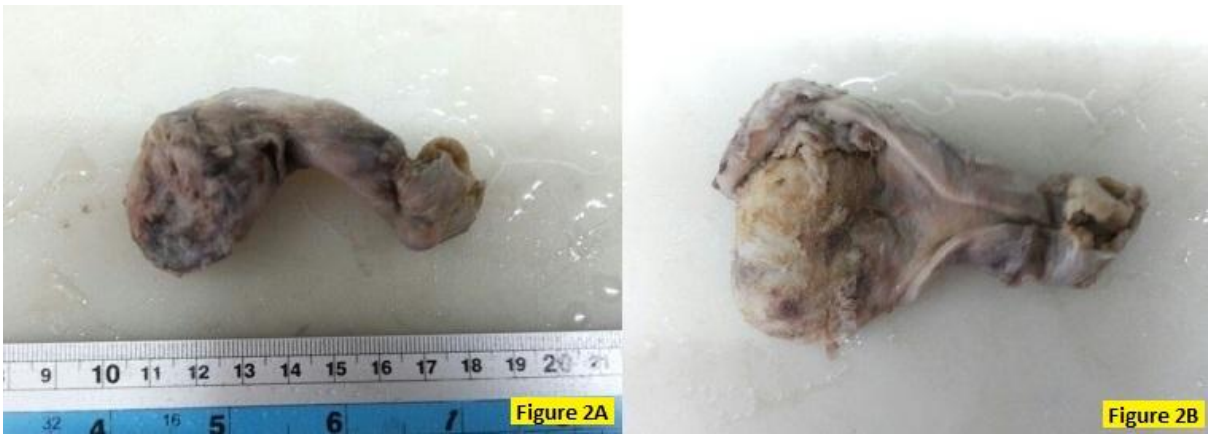


**Figure 2A:** gross specimen shows irregular external surface with areas of haemorrhage, Figure 2B: Cut surface shows flattened atrophic mucosa with necrotic slough like material and thickened wall.

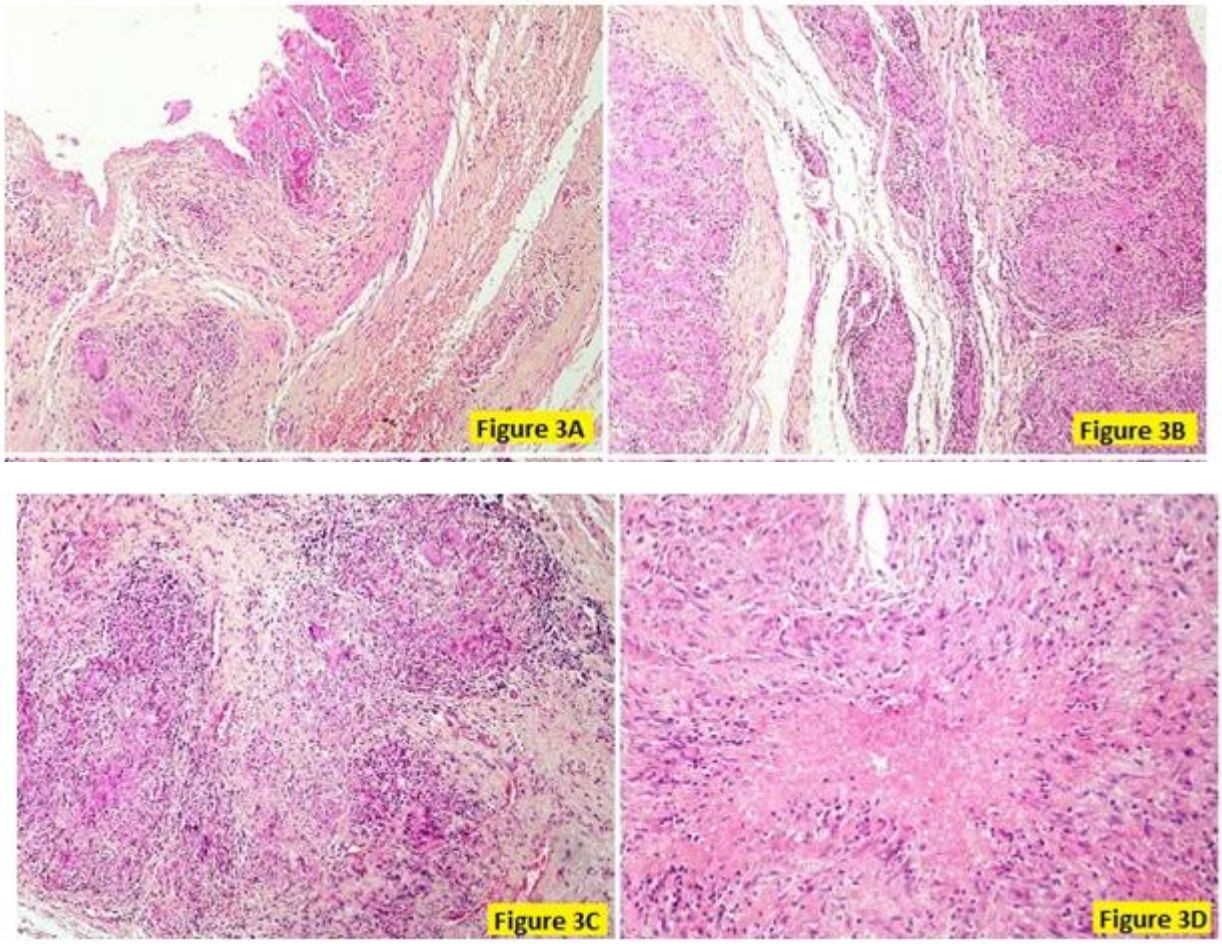


**Figure 3:** A-D, Hematoxylin and eosin stain (H&E stain), microscopic pictures demonstarating epithelioid granulomas with giant cells, denuded mucosa and underlying fibrosis of the wall ( Fig. 3A, 100X), Multiple epithelioid granulomas involving entire thickness of gall bladder wall ( Fig. 3B, 100X), Granulomas with many foreign body and Langhans type of giant cells (Fig:3C, 100X), Epithelioid granulomas with central caseous necrosis (Fig. 3D, 100X).

## 4. Discussion

Although gastrointestinal tuberculosis is the most common extra-pulmonary tuberculosis, tuberculosis of gallbladder is very uncommon.[1] Hepatobiliary tuberculosis constitutes less than 1% of the total abdominal tuberculosis cases.[5] Females above 30 years of age are most commonly affected with a range of 11-50 yrears.[3,6] Low incidence of gallbladder tuberculosis is largely attributed to high content of bile and alkaline pH and other inhibitory substances.[4,5] Majority of the cases are seen in association with gallstones and cystic duct obstruction.[4,5]

Tubercular infection may spread to gallbladder by peritoneal, lymphatic, hematogenous or ascending routes. Gallbladder tuberculosis may be one of the types of four different clinical spectrums (a) miliary tuberculosis (b) abdominal tuberculosis (c) as isolated gallbladder tuberculosis and (d) as acalculous tubercular cholecystitis in immunocompromised patients suffering from AIDS, leukemia, uremia.[1,6] 10 to 65% cases of gallbladder tuberculosis show concomitant pulmonary tuberculosis as described in world literature while in an Indian study it was 28.9% of the all the cases.[8]

Clinical presentation and radiological findings are nonspecific and there are no pathognomonic features suggesting gallbladder tuberculosis.[6] Most of the patients present with pain abdomen, nausea, vomiting, anorexia, jaundice and weight loss.[1.6] Unusual presentataion in the form of abdominal lump[9] perforation with abscess formation in anterior abdominal wall[2] and port site sinus formation has been described.[6] Radiological findings demonstrate cholelithiasis, wall thickening or intraluminal mass simulating gallbladder malignancy.[6] Laboratory findings include anemia, raised ESR and positive tuberculin test. AFB examination of bile obtained from ERCP has extremely low sensitivity[10], however, increased ADA level favours tubercular aetiology.[11] Histopathological examination is essential to confirm the diagnosis. Microscopic examination shows epithelioid granulomas in gallbladder wall with caseation and Langhans type of giant cells. Some cases show associated fibrosis of gallbladder wall.

This disease needs differentiation from acute and chronic cholecystitis including xanthogranulomatous cholecystitis, carcinoma and polypoidal lesions of gallbladder.[6] Regional lymphnodal enlargement is seen in both gallbladder tuberculosis and malignancy. Liver infiltration or metastasis is seen in gallbladder malignancy while lung lesions, omental or mesenteric thickening is frequent in tuberculosis.[6]

Treatment protocol like abdominal tuberculosis includes initial four drugs intensive phase for two months and two drugs for continuation phase.[6]

## 5. Conclusion

Gallbladder tuberculosis being a very uncommon entity needs consideration in cases of cholecystitis and gallbladder mass particularly in endemic areas. High degree of clinical suspicion and mandatory histopathological examination is essential for diagnosis and proper management of cases of gallbladder tuberculosis.

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