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## Tuberculous peritonitis: a case report

Prathita Amanda Aryani,<sup>1\*</sup> Atya Shabrina Monika,<sup>1</sup> Mudianto,<sup>1</sup>  
I Wayan Wisnu Brata<sup>1</sup>



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### ABSTRACT

**Background:** Tuberculous peritonitis is a serious condition with rising prevalence in recent years. It is especially common in those patients with risk factors such as an immunocompromised state, chronic kidney disease, cancer, or cirrhosis/liver disease. Spread is typically hematogenous from pulmonary foci.

**Case Report:** We report on a 67-year-old woman who presented with initial complaints of fever and nausea. There is no history of diabetes,

tuberculosis and hypertension. An abdominal ultrasound of this patient demonstrating ascites and cholelithiasis emerged. An open cholecystectomy approach to evacuate the gallbladder stones and ascites that occurred in this patient.

**Conclusion:** The biopsy in our patient successfully proved the diagnosis and the patient has undergone an uncomplicated procedure in our facility.

**Keywords:** *peritonitis, tuberculosis, cholelithiasis.*

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<sup>1</sup>Department of Surgery, Cibinong Regional Hospital, Bogor, Indonesia

### INTRODUCTION

Cholelithiasis and associated cholecystitis of the gallbladder (GB) is a very common diagnosis made in patients presenting with right upper quadrant abdominal pain. A gallstone occurs as a secondary complication of GB infection.<sup>1-3</sup> The infecting organisms are of many types, and mycobacterium as the causative organism is rarely found and suspected and much less frequently proven.<sup>4-8</sup> We, at this moment, report a case in which we have proven the same.

Secondary tuberculous peritonitis occurs following to contamination of the peritoneal cavity due to perforation or severe inflammation and infection of an intraabdominal organ by *M.tuberculosis*.<sup>9-12</sup> The involvement of the biliary tree and gallbladder by tuberculosis is rarely observed, and its annual incidence is estimated to be 0.1%. Furthermore, there is no current data available on tuberculous gallbladder in Indonesia. Resection of the damaged organ, debridement of necrotic and infected tissue following the administration of antimicrobial agents are the effective management to overcome this condition. Here we describe a case of an older woman with tuberculous peritonitis along with comorbid factors such as age, ascites and cholelithiasis.

history of diabetes, tuberculosis and hypertension. Her past medical history included cholelithiasis and ascites proved by the abdominal ultrasonography from the previous institution and no further sufficient treatment has been done.

On the physical examination, the abdomen was doughy and distended with almost fluctuant sensation. Laboratory tests showed an anemia 10.7 mg/dL (normal 12-16). A chest x-ray showed cardiomegaly with aorta dilatation, atherosclerotic aorta and bronchitis.

During open laparotomy, we revealed multiple gallbladder stones and tubercles over the gallbladder wall. About 8×3×2 cm of gallbladder tissue was removed and sent to the pathology anatomy department. The erosive and ulcerative epithelium was noted. Lamina propria is generally fibrotic and swarmed partially with chronic inflammation, local lymphoid follicle hyperplasia, histiocytes, foam cell macrophages and epitheloid cells are found. There were “Rokistanksy Aschoff” sinuses with the base of the muscular layer. A thick wall and necrotic areas were found in the serous layer and it appears to have a lot of vascular hyperemias. The overall result of the pathology anatomy proved chronic cholecystitis caused by tuberculosis. Treatment was continued with antibiotics, analgetics IV and a multidrug protocol: rifampicin, isoniazid, pyrazinamide, and ethambutol. The patient was discharged to home after 3 days of continual medical therapy. An abdominal ultrasound of this patient demonstrating ascites and cholelithiasis can be seen in [Figure 1](#).

### CASE REPORT

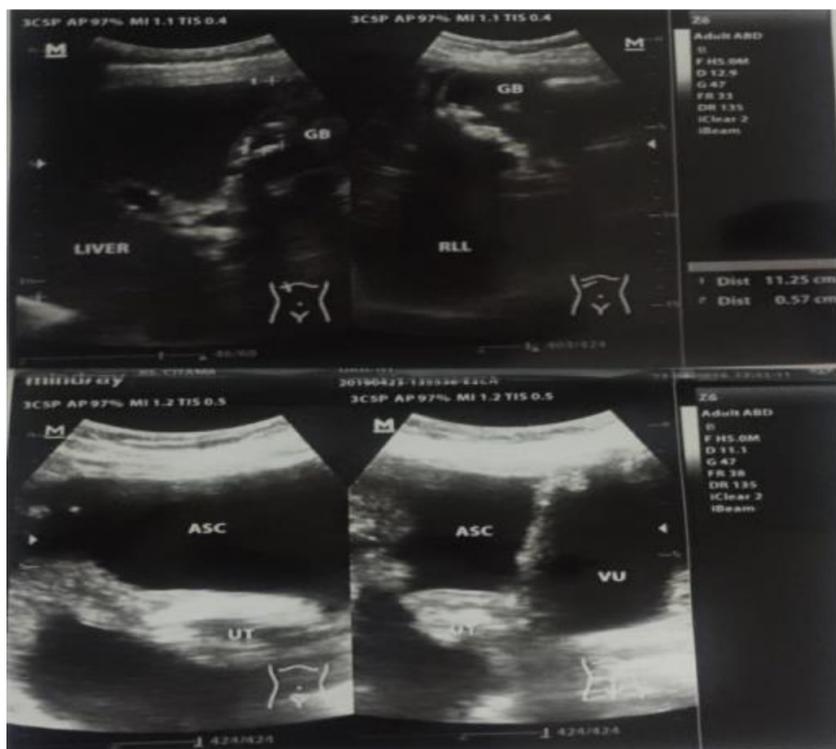
A 67-year-old woman presented to our institution with complaints of diffuse abdominal pain for about two weeks before admission. These symptoms were accompanied by fever and nausea. There is no

\*Correspondence to:  
Prathita Amanda Aryani,  
Department of Surgery, Cibinong  
Regional Hospital, Bogor, Indonesia  
[thitaamanda@gmail.com](mailto:thitaamanda@gmail.com)

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**Figure 1** Abdominal ultrasound reveals ascites and cholelithiasis

## DISCUSSION

We used an open cholecystectomy approach to evacuate the gallbladder stones and ascites that occurred in the patient. Approximately 300cc ascites was evacuated and we found multiple tubercles within the gallbladder wall. The symptoms of the patient were consistent to the common signs of tuberculous peritonitis that include ascites (93%), abdominal pain (73%) and fever (58%). Also, many patients present with distended, tender abdomens, but otherwise physical examination signs are typically nonspecific.<sup>2</sup>

A biopsy of these tissues was done, and the result proved chronic cholecystitis caused by tuberculosis, there was no sign of malignancy in this patient. With some severe infections, gangrenous cholecystitis can develop, and an abscess or perforation may occur.<sup>1</sup> The involvement of the biliary tree and gallbladder by tuberculosis is more rarely observed and its annual incidence is estimated to be 0.1%.<sup>3</sup> Diagnosis is typical via ascitic fluid analysis with SAAG calculation, microbiological tests (mycobacterial culture growth), peritoneal biopsy, laparoscopy, or mini-laparotomy.<sup>2</sup>

The patient was stable after the procedure and was given tuberculosis drugs regimen to treat tuberculous peritonitis. After 3 more days of observation in the surgical ward, the patient was sent home. The typical drug regimen that given to tuberculous peritonitis patient takes about 9 – 18 months to complete.<sup>3</sup>

Gastrointestinal tuberculosis is commonly seen in the form of tuberculous peritonitis or involvement

of the abdominal lymph nodes. GB tuberculosis is very rare worldwide, with only 50 cases reported in the literature till 2003.<sup>4</sup> According to Sir BOA Moynihan, a 'gallstone is a tombstone erected to the memory of the organism within it'. Infecting organisms reach the GB via the bloodstream or lymphatics from a focus nearby. Streptococci, coliform, and typhoid bacilli and actinomyces are the frequently found organisms in gallstones having an infective aetiology.<sup>5</sup> Mycobacterium can also be a cause of cholelithiasis and/or cholecystitis, particularly when tuberculosis is disseminated to the peritoneum and lymph nodes in the vicinity. The rarity of tuberculous involvement of the GB could be possibly due to hypo vascularity of the GB sac and high alkalinity of concentrated bile inside it.<sup>4,6,7</sup> Isolated tuberculosis of the GB has also been reported but without any direct evidence of its primary.

There is no pathognomonic presentation of GB tuberculosis, which can vary from a surprise, on histological examination, to GB perforation.<sup>8,9</sup> GB tuberculosis presents with symptoms of tuberculosis such as malaise, anorexia, low-grade fever, upper abdominal pain, jaundice, discharge at the umbilicus due to tuberculous seedling, GB perforation, and intrahepatic biloma.<sup>10-12</sup> There are no specific investigations for GB tuberculosis. Ultrasound examination may show a stone, wall thickness or associated liver lesion.<sup>12</sup> Associated abdominal tuberculosis may indicate GB involvement as tuberculous cholecystitis is difficult to diagnose. Suspicion of GB tuberculosis would lead to more cases being diagnosed, particularly when features of abdominal tuberculosis are present, and this would lead to the proper treatment of medically curable disease which has to follow surgery unavoidably.

## CONCLUSION

Diagnosing this condition in tuberculous peritonitis is difficult, given the subacute nature of the disease and its nonspecific and variable complaints. Ultrasonographic and CT scan findings are not specific for tuberculous peritonitis, but an awareness of the ultrasonographic features and the features of the CT scan may help in the diagnosis of tuberculous peritonitis and avoid clinical mismanagement. The biopsy in our patient successfully proved the diagnosis and the patient has undergone an uncomplicated procedure in our facility.

## CONFLICT OF INTEREST

The author declares there is no conflict of interest regarding the publication of this report.

## ETHICAL ASPECT

The patient has been signed the informed consent and agrees for the publication of their data as a case report article

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