

## Tuberculosis of Gall Bladder

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### Abstract

Gallbladder with Chronic cholecystitis and cholelithiasis is an everyday routine diagnosis in surgical pathology practice. However, one may encounter some rare diseases of gallbladder. Tuberculosis (TB) of Gall bladder is a rare infection; should also be considered amongst the differential list of gall bladder disorders and management of gall bladder pathologies.

**Key Words:** Cholelithiasis, Gall Bladder, Granulomatous inflammation, Tuberculosis.

### Introduction

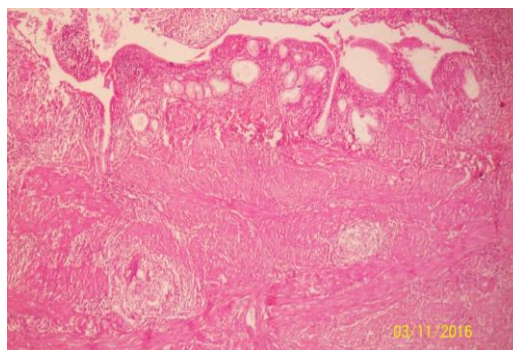
Gall bladder is usually considered as a rare site for tuberculosis.<sup>1</sup> As compared to other gall bladder pathologies like cholelithiasis and cholecystitis, tuberculous infection is rarely seen at this site. Therefore, very little literature is available on the subject.<sup>2</sup> Gall bladder TB is usually a part of miliary tuberculosis.<sup>1</sup> Moreover, besides *Mycobacterium Tuberculosis*, *Mycobacterium avium* can also be responsible for gall bladder TB.<sup>3</sup> The clinical presentation of such infection in gallbladder can be of typical signs and symptoms ranging from anorexia, weight loss, abdominal pain, jaundice and low grade fever.<sup>4,5</sup> and vary from a mild inflammation upto gall bladder perforation.<sup>6</sup> The diagnosis of such cases as of tuberculous etiology is usually unanticipated on histopathological examination.

### Case Report

We report a case of 63-year-old male who presented with typical features of chronic cholecystitis including dyspepsia, flatulence, and multiple episodes of abdominal pain in upper quadrants. He also gave a history of malaise and lethargy for several months. On examination he was febrile and had tenderness in the epigastrium and right hypochondrium. Murphy's sign was positive. His laboratory investigations showed raised ESR 74 mm/hr. Blood CP showed mild leukocytosis. Other investigations like liver

profile and x- ray abdomen revealed no abnormality. However, his Ultrasound showed a contracted thick walled gall bladder containing multiple stones. The findings were suggestive of chronic cholecystitis. A presumptive diagnosis of chronic cholelithiasis with cholecystitis was made. The patient was admitted in the surgery department and an open cholecystectomy was performed. Operative findings showed a thickened gall bladder adherent with the liver. The resected gall bladder received in histopathology lab consisted of multiple pieces. The largest one measured 2.5x3 cm and was 1cm thick on gross examination. The mucosal surface was brown and irregular signifying presence of chronic inflammation and fibrosis. Multiple mixed stones were present in the container. The representative sections were taken from the wall and processed routinely for H&E staining.

On microscopic examination the mucosa was flattened and widely ulcerated. The surface epithelium where present was unremarkable. All layers of gall bladder showed widespread chronic inflammation with multiple granulomas (figure 1). These were composed of epithelioid cells, Langham's giant cell and lymphocytes along with foci of caseation necrosis (figure 2).



**Figure 1: Multiple granulomas seen dispersed in inflammatory lesion**

Dense and exuberant fibroblastic proliferation was noted. Lymphoid aggregates were present in the mucosa and also in the perivascular spaces. The vessels and the nerves showed profound thickening and hypertrophy. The muscle layer was markedly thickened though disrupted by the dense

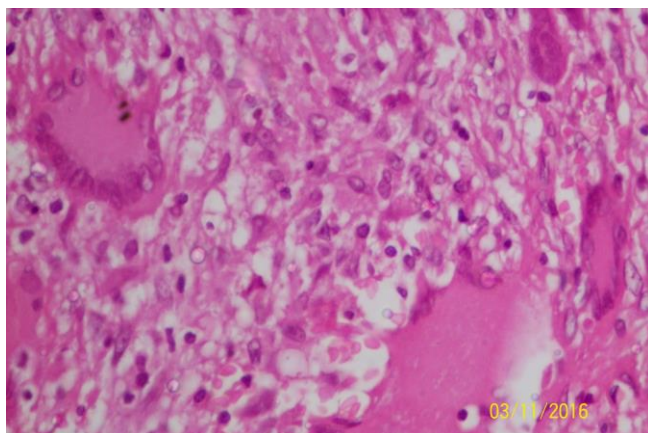
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inflammation and fibroblastic proliferation. Rokitansky Aschoff sinuses were not formed. The sections were searched for the presence of bile and any associated macrophages to account for the presence of giant cells and granulomas but no such evidence was found. PAS stained sections also did not reveal any fungus. ZN stained section of the gall bladder did not reveal any acid fast bacilli. A diagnosis of chronic caseating granulomatous inflammation was established.



**Figure 2: Caseation necrosis and Langhans giant cell seen in the granulomas.**

## Discussion

According to the published report by Tauro et al, and Khan et al only 50 cases of gall bladder TB have been reported.<sup>7,8</sup> Tanwani et al described the pathogenesis of this infection. According to which obstruction of cystic duct leads to the reduction in bile acids, thus the environment becomes favorable for the growth of tubercle bacilli. Moreover, the damage induced by cholelithiasis predisposes to tuberculous cholecystitis. The literature review is extremely deficient on gall bladder TB without gall stones, cystic or common bile duct obstruction and it is hypothesized that gallbladder mucosal damage due to these conditions is a prerequisite for tuberculous involvement.<sup>9</sup> A study report by Ruhl et al showed that the pathogenesis of such infection is unclear rather controversial.<sup>10</sup>

Xanthogranulomatous cholecystitis though uncommon form of cholecystitis, is common cause of granuloma formation in gallbladder. It is characterized by presence of bile, foam cells and noncaseating granulomas.<sup>11</sup> Crohn disease with noncaseating granulomas can also rarely involve the gallbladder.<sup>12</sup> Sharara et al reported that Schistosomal cholecystitis is another gall bladder granulomatous infection, which must be differentiated from the tuberculous one. These cases have parasites in the tissue. Only about  $\geq 10$  such cases have been reported.<sup>13</sup> The presentation of current study findings i.e. presence of cholelithiasis without pus (empyema) were not comparable to the findings reported by Leo et al.<sup>7</sup> Sharma et al described that

preoperatively, the radiological findings of gall bladder, TB mimics carcinoma of gall bladder and the right diagnosis is made conveniently by histopathological examination.<sup>14</sup>

The study reports by Raja *et al* and Kaustova *et al* describe that the sensitivity of gall bladder TB for serological diagnosis i.e. for IgG, IgA, and IgM antibodies is 62, 52, and 11%. While the specificities are 100, 97, and 95%, respectively, thus requiring confirmation by histopathological examination.<sup>15,16</sup> This fact highlights the importance of requirement of post-surgical histopathological examination of every specimen irrespective of the certainty of clinical diagnosis. Since, TB of gall bladder is a rare occurrence so the preoperative diagnosis is extremely difficult and unsought. Thus, all the gall bladder specimens after cholecystectomy should have a histopathological evaluation, especially in TB endemic areas. So, that provision of proper and timely management with anti-tuberculous therapy can reduce the miseries of such patients, moreover one should also look for a primary focus.

## Conclusion

Gall bladder TB can coexist with cholelithiasis ultimately causing cholecystitis. All resected gallbladder specimens should be routinely examined histopathologically and this rare entity should be kept in mind while evaluating histopathology samples.

## References

1. Kumar K, Ayub M, Kumar M, Keswani NK, Shukla HS. Tuberculosis of the gallbladder. *HPB surgery : a world journal of hepatic, pancreatic and biliary surgery*. 2000;11(6):401-404.
2. Yu R, Liu Y. Gallbladder tuberculosis: case report. *Chinese medical journal*. 2002;115(8):1259-61.
3. Cacciarelli AG, Naddaf SY, el-Zeftawy HA, Aziz M, Omar WS and Kumar M et al. Acute cholecystitis in AIDS patients: correlation of Tc-99m hepatobiliary scintigraphy with histopathologic laboratory findings and CD4 counts. *Clinical nuclear medicine*. 1998;23(4):226-228.
4. Abascal J, Martin F, Abreu L, Pereira F, Herrera J, Ratia T, et al. Atypical hepatic tuberculosis presenting as obstructive jaundice. *The American journal of gastroenterology*. 1988;83(10):1183-1186.
5. landis Felix FJ, Villalobos Talero J, Mazure Lenhoff RA, Cabrerizo Comitre E, Polo Camacho M, Bravo Arenzana L, et al. [Tuberculosis of the biliary system: presentation of a case and review of the literature]. *Revista espanola de enfermedades digestivas : organo oficial de la Sociedad Espanola de Patologia Digestiva*. 1990;78(1):43-45.
6. Hahn ST, Park SH, Shin WS, Kim CY, Shinn KS. Gallbladder tuberculosis with perforation and intrahepatic biloma. *Journal of clinical gastroenterology*. 1995;20(1):84-86.
7. Tauro LF, Martis JJ, Shenoy HD. Tuberculosis of gall bladder presenting as empyema. *Saudi journal of gastroenterology : official journal of the Saudi Gastroenterology Association*. 2008;14(2):101-102.
8. Khan R, Vasenwala SM, Arif SH, Harris SH. Granulomatous gall bladder: A surgico-pathological challenge. *Annals of Saudi medicine*. 2010;30(3):244-245.

9. Rouas L, Mansouri F, Jahid A, Zouaidia F, Saidi H, Nabih N, et al. [Gallbladder tuberculosis associated with cholelithiasis]. *Revue medicale de Liege*. 2003 ;58(12):757-760.
10. Ruhl KM, Krones CJ, Hermanns B, Schumpelick V. [Tuberculosis of the gall bladder]. *Der Chirurg; Zeitschrift für alle Gebiete der operativen Medizin*. 2003 ;74(5):478-481.
11. Jetley S, Rana S, Khan RN, Jairajpuri ZS. Xanthogranulomatous cholecystitis--a diagnostic challenge. *Journal of the Indian Medical Association*. 2012 ;110(11):833-837
12. Andoh A, Endo Y, Kushima R, Hata K, Tsujikawa T, Sasaki M, et al. A case of Crohn's disease involving the gallbladder. *World journal of gastroenterology*. 2006 ;12(6):977-978.
13. Sharara AI, Abi-Saad G, Haddad M, Mansour A, Tawil A. Acute granulomatous schistosomal cholecystitis. *European journal of gastroenterology & hepatology*. 2001 ;13(8):1001-1003.
14. Sharma S, Bansal R, Agrawal N, Khare A, Bharosay VV. Tuberculosis of the gall bladder clinically mimicking carcinoma--a case report. *Journal of the Indian Medical Association*. 2012;110(6):402-403.
15. Raja A, Uma Devi KR, Ramalingam B, Brennan PJ. Immunoglobulin G, A, and M responses in serum and circulating immune complexes elicited by the 16-kilodalton antigen of *Mycobacterium tuberculosis*. *Clinical and diagnostic laboratory immunology*. 2002;9(2):308-312.
16. Kaustova J. Serological IgG, IgM and IgA diagnosis and prognosis of mycobacterial diseases in routine practice. *European journal of medical research*. 1996;1(8):393-403.