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Gall bladder Tuberculosis Mimicking Malignancy: An Unusual Case Report with Review of Literature

Anjum Ara¹, Sumbul Warsi², Mohd Rafey², Kafil Akhtar^{2*}

¹Assistant Professor, Department of Pathology, Faculty of Dentistry, JMI, New Delhi

²Department of Pathology, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh (UP), India

*Corresponding Author: Kafil Akhtar, Professor, MD, DMRT, Department of Pathology, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh (UP), India, Email: drkafilakhtar@gmail.com

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Abstract

Isolated gall bladder tuberculosis is a highly rare disease entity. It may be associated with other intra-abdomen tuberculosis, which may involve the gallbladder via the lymphatics or bloodstream pathway. We intend to present a case of gall bladder tuberculosis diagnosed histopathologically in a 50 year old female patient, suspected to be gallbladder carcinoma after computed tomography scan and frozen section biopsy. So all operated cholecystectomy specimens should always be send for histopathology confirmation of the diagnosis and all patients of gall bladder tuberculosis should be assessed for any tubercular focus elsewhere in the body.

Keywords

Gall bladder; Histopathology; Malignancy; Radiography; Tuberculosis

Introduction

Gallbladder tuberculosis is a very rare disease entity. It comprises of only 1.0% of abdominal tuberculosis cases [1]. Only few cases of the disease have been reported in the literature with the first case of gallbladder tuberculosis reported in 1870 by Gaucher [2]. The correct

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preoperative diagnosis is usually wearisome because the clinical presentation and radiological findings are not very specific for gall bladder tuberculosis.

We intend to present a case of suspected gallbladder carcinoma after Computed Tomography (CT) scan and frozen section biopsy, but turned out to be a case of gall bladder tuberculosis after routine histopathological examination of the cholecystectomy specimen. We also discuss the review of literature, highlighting the differential diagnosis of comparable sign or symptoms.

Case Report

A 50 year old female patient presented to the Surgery out-patient clinics with chief complaints of recurrent pain in the right hypochondrium, loss of appetite and dyspepsia for the past 1 month. There was no history of fever, weight loss or night sweats. There was no history of tuberculosis, hepatitis, jaundice or contact. The general and abdominal examinations were nothing significant.

Hematologic laboratory investigations were normal except a slight lymphocytosis. Chest X-ray was non-contributory. Preoperative ESR was 34 mm in first hour and CA19-9 level was 49 U/mL.

Abdominal ultrasound showed diffusely thickened wall at neck and body of gallbladder with multiple gallstones and sludge. Contrast enhanced CT scan of the abdomen revealed a hypechoic thickened lesion in the body of the gall bladder, suggestive of malignancy (Fig. 1). A provisional diagnosis of gallbladder carcinoma was made and cholecystectomy was performed. Frozen section of the thickened gall bladder wall was also suspicious of malignancy.

Grossly the gall bladder wall showed a diffuse thickening in the body of 10 mm. Histopathology examination showed multiple caseating epithelioid granulomas comprising of epithelioid cells, langhan's giant cells, lymphocytes, plasma cells and foci of caseous necrosis (Fig. 2 and 3). Focal mild dysplasia of the lining epithelium was seen but no features of invasive malignancy was noted. A final diagnosis of gall bladder tuberculosis with mild dysplasia was given. The patient was administered 4 drug anti-tubercular treatment for 9 months regime. Our patient is doing well on follow up after 6 months of surgery.

Figure 1: Contrast enhanced CT scan of the abdomen revealed a hypoechoic thickened lesion in the body of the gall bladder, suggestive of malignancy.

Figure 2: Histopathology examination showed multiple caseating epithelioid granulomas comprising of epithelioid cells, Langhans' giant cells, lymphocytes, plasma cells and foci of caseous necrosis. Hematoxylin and Eosin x 10X.

Figure 3: Tissue section shows epithelioid cells, langhan's giant cells with few lymphocytes and plasma cells. Hematoxylin and Eosin x 40X.

Discussion

Isolated gall bladder tuberculosis is a highly rare disease entity. It may be associated with other intra-abdomen tuberculosis, which may involve the gallbladder via the lymphatics or bloodstream pathway [3,4]. In our patient, there was no history of pulmonary or abdominal tuberculosis.

Hepatobiliary tuberculosis is more common in males with male to female ratio of 2:1 but there is no specific age group, while gall bladder tuberculosis are mostly reported in females above the age of 30 years [4,5]. Our case was a 50 years old female.

Various theories have been proposed regarding the etiology of gall bladder tuberculosis. The eminent components which favor the development of gall bladder tuberculosis are cholelithiasis and cystic duct obstruction [6]. The earlier damage to the gallbladder lining epithelium due to gall stones seems to be first step for the development of tuberculosis infection [7]. Cystic duct obstruction may lead to decreased levels of bile acid in the gall bladder, which produces a lowered resistance against the growth of tuberculosis infection. The *tubercular bacilli* may form a nidus for calculus formation. Abdominal tuberculosis involving the terminal

ileum and ileo-caecal junction causes interruption in absorption of bile in blood circulation. The disturbance in the entero-hepatic circulation leads to decreased levels of bile salts and phospholipids and forms a platform for gall stones [8]. Kapoor, et al., have reported the presence of gallstones in all the cases of gallbladder tuberculosis, but Saluja, et al., did not find any gallstone disease associated with gallbladder tuberculosis [6,7]. Ryuand has also suggested that 70.0% of gallbladder tuberculosis cases are linked with gallstones disease [8].

Four clinical types of gallbladder tuberculosis have been reported:

- (a) As a component of miliary tuberculosis in children and adults
- (b) As a component of disseminated abdominal tuberculosis
- (c) Isolated gallbladder tuberculosis without overt tubercular foci elsewhere in the body
- (d) Involvement of gallbladder in anergic states due to uremia, cancer or AIDS [9]

Our case was an isolated gallbladder tuberculosis without any history of tuberculosis elsewhere in body.

The patients infected with gallbladder tuberculosis may have variety of symptoms such as abdominal pain, jaundice, weight loss, vomiting, loss of appetite and abdominal mass [10,11]. Our patient presented with complaints of recurrent pain in right hypochondrium, loss of appetite and dyspepsia for the last 1 month. But no classical clinical sign and symptoms of tuberculosis like low grade fever, lymphadenopathy, weight loss was seen. The clinical features are sometimes not very specific, which makes the preoperative diagnosis of gallbladder tuberculosis quite difficult [10].

An increased ESR, anemia and positive Mantoux tuberculin skin test are some laboratory tests which might help in reaching the diagnosis of gall bladder tuberculosis [12]. The serum CA19-9 is usually elevated in gall bladder carcinoma [13]. Xanthogranulomatous cholecystitis is also a differential diagnosis of gall bladder tuberculosis. The patients of xanthogranulomatous cholecystitis often shows moderate elevation of CA19-9, so serum level of CA19-9 is not very useful in differentiating xanthogranulomatous cholecystitis from gall bladder carcinoma [14,15]. The presence of a mass that fills the gallbladder associated with cholelithiasis is difficult to differentiate from carcinoma of the gallbladder. In addition, both gall bladder tuberculosis and gall bladder carcinoma can produce regional lymphadenopathy [14]. The appearance of liver metastasis or liver infiltration is indicative of a gallbladder carcinoma, whereas lung lesions or mesenteric thickening is more suggestive of tubercular infection [16,17]. In our case, CA19-9 level was 49 U/ml, with no lymphadenopathy or lung lesions. So, the diagnosis of gall bladder carcinoma was made on clinical sign and symptoms and baseline investigations.

Xu, et al., have reported three morphological patterns of gallbladder tuberculosis on computed tomography [18]. The most common form is the thickened-wall type which can be usually

misdiagnosed as gallbladder carcinoma or cholecystitis. Presence of “halo” with edema in the gall bladder wall in CT scan is more suggestive of gallbladder tuberculosis than gallbladder carcinoma. The mass-forming is second pattern seen both in gallbladder tuberculosis and gallbladder carcinoma. The appearance of a large mass with multiple foci of necrosis on contrast CT or a large mass with multiple calcifications are more in favor of gallbladder tuberculosis. The third micronodular pattern shows homogeneously enhanced gallbladder wall in contrast-enhanced CT scan. The CT scan in our case showed a hypoechoic thickened lesion in the body of the gall bladder. Govindaswamy, et al., have reported identical features of gallbladder tuberculosis and gallbladder carcinoma on MRI [19]. The diagnosis is confirmed only after histological examination of cholecystectomy specimen, which draws attention towards the importance of histopathological examination of every resected gallbladder specimen [16].

The treatment protocol in a patient diagnosed preoperatively includes administration of Anti-Tubercular Treatment (ATT) with 2 months of isoniazid, rifampicin, ethambutol and pyrazinamide followed by first two drug maintenance therapy for 6-7 months [20]. In the presence of signs and symptoms of gallstone disease, ATT is followed by cholecystectomy [21]. Patients diagnosed postoperatively should receive ATT to avoid the peritoneal or systemic spread of infection [21].

Conclusions

Gall bladder tuberculosis can be frequently mistaken as malignancy. So all operated cholecystectomy specimens should always be send for histopathology confirmation of the diagnosis. Patients of gall bladder tuberculosis should be assessed for any tubercular focus elsewhere in the body by accessory investigations and treatment should be further planned accordingly.

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