Xanthogranulomatous Cholecystitis Masquerading as Malignancy: Sonographic and CT features

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ABSTRACT

Xanthogranulomatous cholecystitis is a rare disease and its incidence is between 0.7 to 13.2% of all cholecystitis cases, while on autopsy it is about 1.5% of cases. The clinical presentation resembles acute or chronic cholecystitis. Imaging features sometimes masquerade as malignancy and need histopathological examination for diagnosis. We present a case of xanthogranulomatous cholecystitis with its sonographic and computed tomographic features.

Keywords: Xanthogranulomatous cholecystitis; Carcinoma gall bladder; Sonography; Computed tomography

INTRODUCTION

McCoy [1] in 1976 was first to report xanthogranulomatous cholecystitis and it was described as a distinct pathological condition by Goodman and Ishak [2] in 1981. Xanthogranulomatous cholecystitis is a rare disease and its incidence is between 0.7 to 13.2% of all cholecystitis cases, while on autopsy it is about 1.5% of cases [3]. The clinical presentation resembles acute or chronic cholecystitis. It may be difficult to differentiate it from gallbladder cancer and histopathologic examination is needed [3]. Complications due to xanthogranulomatous cholecystitis include perforation, abscess formation, fistulous tracts and extension of the inflammatory process in neighbouring structures [4].

CASE PRESENTATION:

A 50-year-old female presented with abdominal pain in right upper quadrant for 25 days associated with nausea, vomiting and fever. She had a history of passing yellow coloured urine but stool colour was normal. Her vital parameters like blood pressure, pulse rate and respiratory rate were normal. Abdominal examination revealed guarding and tenderness in the right hypochondriac region and no mass was felt. Bowel sounds were present and per-rectal examination was normal. Laboratory investigations were within normal limits.

Ultrasonography (USG) showed irregularly thickened gallbladder wall along with multiple gall stones with mild pericholecystic fluid collection (Figure 1). Computed tomography (CT) of abdomen revealed irregularly thickened and enhancing gall bladder wall with mild pericholecystic fluid collection (Figure 2a and 2b). Laparoscopic cholecystectomy was done which revealed multiple small gallstones with thickened gall bladder wall. Histopathological examination revealed hypertrophic mucosal epithelium with infiltrates of foamy macrophages and histiocytes. There was no evidence of dysplasia, malignancy or tuberculosis. Histopathological examination of the gall bladder showed xanthogranulomatous cholecystitis.

DISCUSSION

Xanthogranulomatous cholecystitis is an unusual form of chronic cholecystitis, frequently seen in females between 60 and 70 years age group. It usually present with signs and symptoms of cholecystitis i.e. right upper quadrant pain, vomiting, leukocytosis and positive Murphy’s sign. A tender and palpable right upper quadrant mass can be found in less than half of the patients and few patients present with anorexia [5,6]. Its pathogenesis is unclear, however, extravasation of bile into the gallbladder wall is believed to have a role in the development of the inflammatory process. Association between xanthogranulomatous cholecystitis and carcino-
-oma of the gall bladder has been reported in literature which explains the development of metaplastic and dysplastic changes due to inflammatory processes [5, 6].

On USG, it may appear as thickening of the gall bladder wall with hypoechoic nodules within the thickened gallbladder wall and associated mass. Disruption of the mucosal line, pericholecystic fluid, gall stones, intrahepatic biliary dilatation, pneumobilia, air within the gall bladder lumen, dilatation of small bowel and fistula are also seen [7]. Computed tomography (CT) shows hypoechoic nodules in gall bladder wall with irregular or lobulated and thickened wall. The gall bladder mucosa typically enhances on post-contrast study. Occasionally, biliary dilatation is present which may be secondary to the presence of intraductal stones, hepatoduodenal ligament adenopathy or in rare cases a coexistent malignancy of the gallbladder or bile duct. The preoperative diagnosis of xanthogranulomatous cholecystitis is also difficult with CT and most patients were diagnosed on histopathology [5,6]. Complications of xanthogranulomatous cholecystitis are seen in 32% of cases, which includes perforation, abscess formation, fistulous tracts to the duodenum or skin and extension of the inflammatory process to the liver, colon, or surrounding soft tissues [4]. Bilioenteric fistula can be identified with different modalities such as an upper gastrointestinal barium study, CT, ERCP (endoscopic retrograde cholangiopancreatography), or MRCP (magnetic resonance cholangiopancreatography) [7]. It is often difficult to distinguish xanthogranulomatous cholecystitis from gallbladder carcinoma by the conventional imaging techniques of ultrasonography, CT and MRI [8,9]. The fact that xanthogranulomatous cholecystitis can occasionally be associated with gallbladder carcinoma makes the differentiation more difficult [10].

In recent years, Fluoro -deoxy-glucose positron emission tography (FDG-PET) has been useful in differentiating between benign and malignant lesions in the gallbladder. For diagnosis of gallbladder carcinoma, the sensitivity and specificity of FDG-PET is reported to be 75-100% and 75-89%, respectively [11-13]. However, 18F-FDG is not specific for malignant lesions as there can be uptake in inflammatory lesions with increased glucose metabolism. False-positive results in certain benign conditions like chronic cholecystitis, tuberculosis and adenomyomatosis of the gallbladder have been reported [11,12].

FDG-PET has been recommended for patients with normal c-reactive protein levels to differentiate between malignant and benign lesions [13].

In conclusion, xanthogranulomatous cholecystitis is a rare entity and the differentiation of xanthogranulomatous cholecystitis from gallbladder malignancy remains a challenge in medical practice. It is quite difficult to differentiate this rare disease from carcinoma on imaging; hence usually requires histopathological examination.

REFERENCES

**Figure 1:** Ultrasound image showing irregularly thickened gallbladder wall along with multiple gall stones.

**Figure 2a and 2b:** Axial CT image showing irregularly thickened and slightly enhancing gall bladder wall with gall stones.