Case Report

Xanthogranulomatous cholecystitis incidental finding in laparoscopic cholecystectomy: A case report

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ABSTRACT

Xanthogranulomatous cholecystitis (XGC) is a rare form of chronic cholecystitis due to the destruction and infiltration of macrophages into the gallbladder wall mimicking gallbladder carcinoma. The lack of distinguishing radiologic or clinical characteristics to differentiate from gallbladder carcinoma leads to unwanted extensive surgeries. Typically, diagnosis is confirmed by histopathology. This case report of a 51-year-old female presented with complaints of intermittent pain in the abdomen, nausea, and vomiting for 2 months with right subcostal tenderness and no palpable mass. She had undergone cholecystectomy after getting a diagnosis of chronic cholecystitis with cholelithiasis later on the histopathological study of the removed gallbladder revealed the diagnosis of XGC. This case report highlights the importance of evaluating further radiological findings and other non-invasive techniques to diagnose XGC preoperatively and prevent extensive surgeries.

Key words: Case report, Cholelithiasis, Gallbladder carcinoma, *Xanthogranulomatous cholecystitis*

Xanthogranulomatous cholecystitis (XCG) is a rare, uncommon form of chronic cholecystitis usually associated with cholelithiasis. Due to its rarity, the lack of pre-operative diagnostic features in both clinical and investigation findings, and its similarity to malignancy of gallbladder, it often leads to extensive gallbladder surgery. It remains a risk factor for converting laparoscopic to open cholecystectomies or even to radical gallbladder surgeries in case of its invasive nature to the surrounding structure [1]. There are several studies and case reports on the diagnostic findings of ultrasonography and computed tomography. Still, they fail to diagnose XCG preoperatively; it is usually confirmed by histopathology of the excised gallbladder.

Here, we present a case of XCG operated on in our hospital after the diagnosis of chronic cholecystitis with cholelithiasis later found to be a case of XCG. The primary aim of this case report is to emphasize the need to evaluate further radiological findings and other non-invasive techniques to diagnose XGC and prevent patient's exposure to extensive surgeries.

CASE REPORT

A 51-year-old female presented to our hospital with complaints of intermittent right upper quadrant pain in the abdomen, nausea, and vomiting on and off for 2 months. The abdominal pain was dull aching with increasing intensity, sometimes radiating to the mid-abdomen and back, usually aggravated by taking a fatty diet and relieved by taking antacids or other pain medications. Her medical history included hypertension for 10 years under regular treatment and clinical follow-up. There was no history of weight loss or loss of appetite but had an episode of similar complaints 6 months back and had undergone treatment with antibiotics and analgesics after getting diagnosed with acute cholecystitis.

The general physical examination and her vital signs were normal. On examination, there was right subcostal tenderness with no palpable mass or Murphy's sign, no rebound tenderness or muscle guarding with normal bowel sounds.

Routine laboratory studies revealed a hemoglobin level of 10.5 g/dL with an erythrocyte sedimentation rate of 50 mm/h, other cell counts, liver function test, and renal function test were within normal limits. Chest radiography revealed no abnormalities or any lesions. Ultrasonography of the abdomen revealed a normally distended gallbladder with wall thickening measuring 6.4 mm, echogenic debris, and intraluminal membranes with well-maintained peripheral vascularity and multiple calculi with the largest measuring 12.4 mm (Fig. 1). Computed tomography of the upper abdomen demonstrated similar findings with pericholecystic fat stranding (Fig. 2).

After antibiotic treatment for 2 weeks, she underwent elective laparoscopic cholecystectomy. During the procedure,

Access this article online

Received - 11 September 2024
Initial Review - 27 September 2024
Accepted - 29 October 2024

DOI: 10.32677/ijcr.v10i12.4818

Quick Response code

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abdominal access was obtained and pneumoperitoneum was established, the gallbladder was identified and retracted over the liver with cephalic traction but there was difficulty in separating the gallbladder from the liver bed due to adhesion and the invasive nature of the thickened gallbladder wall into the liver bed and other surrounding structure arising the suspicion of the malignancy. Due to this, the laparoscopic procedure was converted into open cholecystectomy by making the right subcostal skin incision, layers of the abdomen were dissected along the line of the skin incision and separated to expose the gallbladder adequately. Callot's triangle was identified after dividing the overlying peritoneum, both the cystic duct and cystic artery were dissected close to the Hartman's pouch. Removal of the gallbladder along with the hardened adjacent structure was done by electrocautery. Closure was done layer by layer. Later on, the histopathological study of the excised specimen revealed the ulcerated mucosa with transmural mixed inflammatory infiltrates composed of foamy lipid-laden histiocytes, along with fibrosis with no evidence of granuloma or malignancy giving rise to the impression of acute on chronic XGC (Fig. 3). After a smooth hospital stay, the patient received antibiotics and analgesics before being discharged.

DISCUSSION

XGC is a benign rare variant of chronic cholecystitis first described by McCoy *et al*. [2]. The condition begins with biliary obstruction due to gallstones or other less common causes, increasing the intraluminal pressure and bile stasis [3]. This causes extravasation of bile into the wall, with the Rokitansky–Aschoff sinuses involved or through a small mucosal ulceration which results in a granulomatous reaction with the formation of intramural nodules [1,4]. Occasionally, it may lead to abscess formation, perforation, or fistula formation with other adjacent structures. It occurs most commonly in the sixth and seventh decades of life, with a male-to-female ratio of 1:9 and an incidence of 8.8% of patients undergoing cholecystectomy in India [5]. Exceptionally, it can be seen in children or adolescents [6].

XGC is usually diagnosed after the histopathological study of the excised gallbladder. There are several studies and case reports on the ultrasonographic and computed tomographic findings to diagnose XGC but failed to help in diagnosing it preoperatively. In several cases, it even led to the misdiagnosis of malignancy during pre- and intra-operative periods but it came out to be XGC on histopathology of excised gallbladder [7]. The investigation of choice is ultrasonography, which shows focal or diffuse wall gallbladder thickening with intramural hypoechoic bands or nodules correlated with foam and inflammatory cells or necrosis and/or abscess [8]. Similar findings with gallstones often confirm the diagnosis [9] but may still get misdiagnosed due to the resemblance to the malignant lesions. However, none of the findings described in the literature are diagnostic and it may not be possible to differentiate XGC gallbladder wall thickening from carcinomatous wall thickening [10]. This patient presented with clinical signs similar to that of an acute cholecystitis, and investigations revealed findings consistent

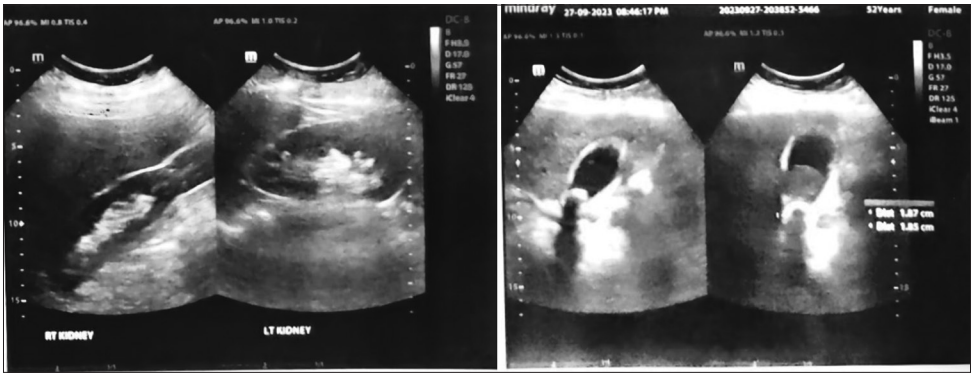

Figure 1: Ultrasonography of the abdomen shows a thickened gallbladder wall with echogenic debris and multiple calculi

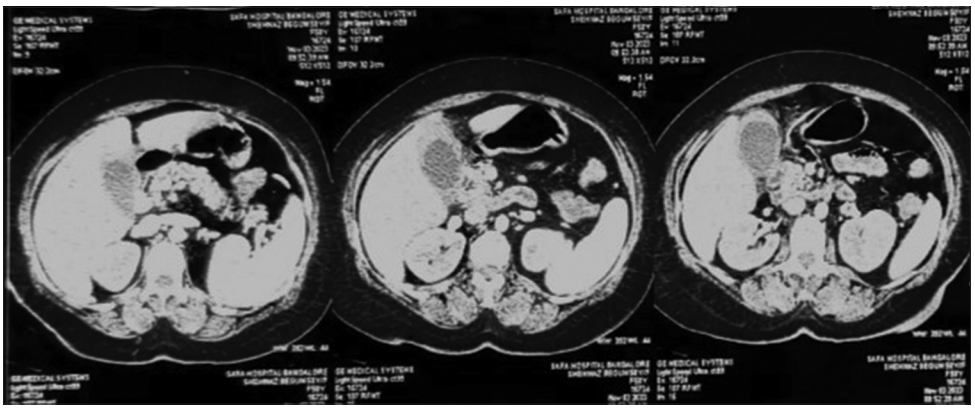

Figure 2: Computed tomography of the upper abdomen demonstrates a thickened gallbladder wall with echogenic debris and pericholecystic fat stranding

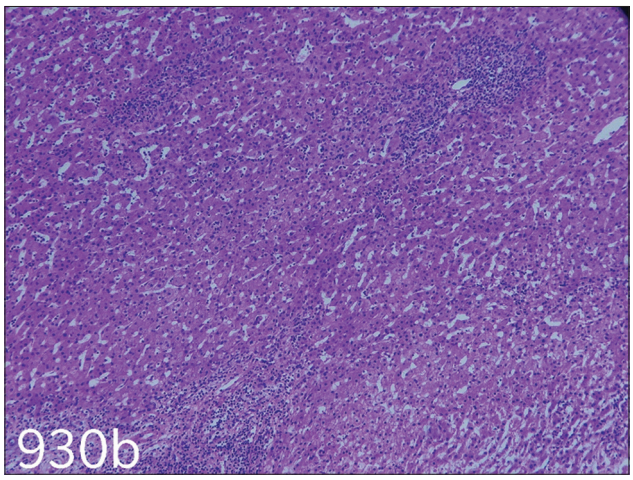

Figure 3: Histopathological study of the excised specimen shows transmural mixed inflammatory infiltrates

with acute on chronic cholecystitis. Later, it was diagnosed to be XGC by histopathological study.

Recent case reports by Shrivastava *et al*., [11] and Rijal *et al*., [12] emphasize the dilemma in differentiating gallbladder carcinoma from XGC and the effect on the patient outcomes during surgery that often delays the management or renders the patient to extensive surgeries and other treatment intervention such as chemotherapy and radiotherapy in doubt of malignancy. In the way forward to the grave consequence of such interventions, there needs to be further studies to find further radiological findings and other non-invasive techniques such as finding cytological markers to diagnose XGC preoperatively, which helps the surgeons to plan surgery accordingly. It is justified to perform a histopathological study of the excised gallbladder to confirm the diagnosis after routine cholecystectomy as suggested by Tasleem, *et al*. [13] and hence, to not miss the diagnosis of uncommon diseases.

CONCLUSION

Even though XGC is considered to be a rare variant of chronic cholecystitis, with a reported incidence of 8.8% of patients undergoing cholecystectomy in India, there is a need to evaluate further radiological findings and other non-invasive techniques to diagnose XGC and prevent patient's exposure to extensive surgeries. This case report also emphasizes the significance of histological examinations of the excised gallbladder following cholecystectomies to verify the diagnosis and ensure that malignancies or other uncommon diseases are not overlooked.

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the consent form, the patient has consented for her images and other clinical information to be reported in the journal. The patient understands that their name and initials will not be published and due efforts will be made to conceal the identity, but anonymity cannot be guaranteed.

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Funding: Nil; Conflicts of interest: Nil.

How to cite this article: Pasha M, Wani UH, Najar FA, Ansari MS. Xanthogranulomatous cholecystitis incidental finding in laparoscopic cholecystectomy: A case report. Indian J Case Reports. 2024;10(12):417-419.