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Case of Xanthogranulomatous Cholecystitis Mimicking Carcinoma Gall Bladder

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Abstract: ***Xanthogranulomatous cholecystitis is an uncommon form of chronic cholecystitis. Microscopically, there is intramural accumulation of lipid-laden macrophages and inflammatory infiltrate due to extravasation of the bile into the wall of the gall bladder. Xanthogranulomatous cholecystitis may be difficult to differentiate from gall bladder carcinoma clinically and radiologically.Also, cases of concomitant gall bladder carcinoma complication xanthogranulomatous cholecystitis have also been reported. Our aim is to increase awareness in radiologically diagnosing xanthogranulomatous cholecystitis and how to differentiate from carcinoma gall bladder.***

Keywords: Xanthogranulomatous cholecystitis, gall bladder carcinoma

1. Introduction

Xanthogranulomatous cholecystitis is an unusual inflammatory disease of the gall bladder presenting with non-specific signs and symptoms. Some of these cases are also associated with cholelithiasis. There is intramural accumulation of lipid laden macrophages along with inflammatory cells (both acute and chronic) due to extravasation of the bile into the wall of gall bladder through an ulcer of the surface mucosa or through a ruptured Aschoff-Rokitansky sinus[1,2]. These accumulations form xanthogranulomatous foci in the wall of gall bladder along with fibrosis. Xanthogranulomatous cholecystitis may be difficult to differentiate from gall bladder carcinoma clinically, radiologically, surgically and even pathologically. Radiology can be of help in differentiating xanthogranulomatous cholecystitis from carcinoma gall bladder however histopathology is the gold standard.

2. Case Report

62 years old female presented with pain right side of upper abdomensince 7-10 days which was associated with nausea and vomiting. She also had history of similar complaints in the past for the last 6 months. No history of jaundice, weight loss or any surgery in the past. On physical examination, there was mild tenderness in the right hypochondrium. White blood cell count was slightly raised. Rest of the blood investigation were within normal limits.

On Ultrasound, there was thickening of the wall of the gall bladder with few iso/hypoechoic areas within the wall of the gall bladderand pericholecystic fluid [Figure 1(a) and 1(b)].No gall stones were seen. On CT Scan abdomen, the gall bladder was symmetrically thickened with hypo-enhancing areas within the gall bladder wall.The border between the gall bladder and the liver were ill defined at places. Few peripherally enhancing fociwere seen in the liver parenchyma adjacent to the gall bladder. There was also marked stranding and infiltrations into the adjacent liver and the adjacent pericholecystic fat.The common bile ductwas dilated measuring 10mm [Figure 2(a)]. There was no intra hepatic biliary radicles dilatation or abdominal lymphadenopathy.

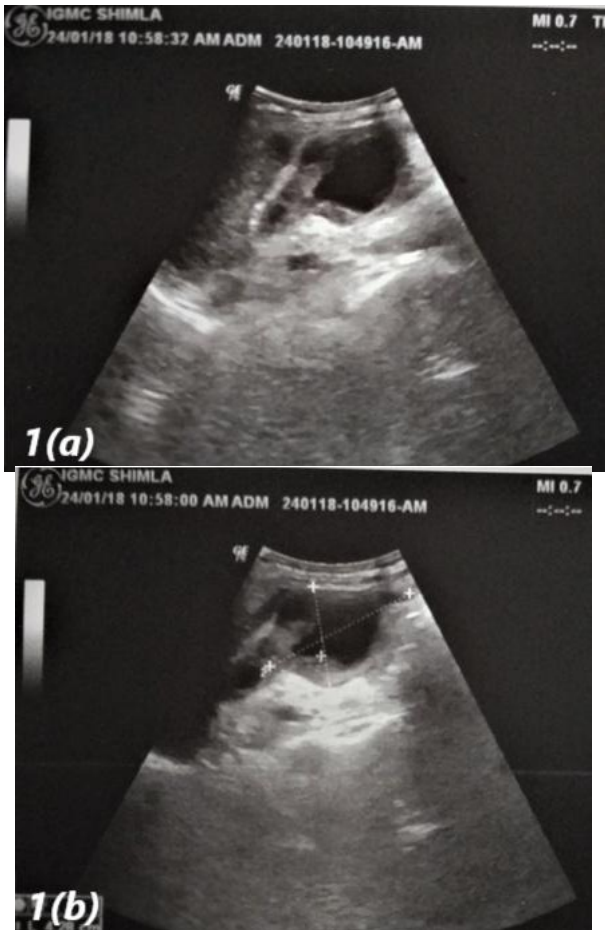

Figure 1(a) and (b): USG Findings: Gall Bladder is contracted with thickening of its wall. Iso/hypoechoic areas are seen within the wall of the gall bladder.

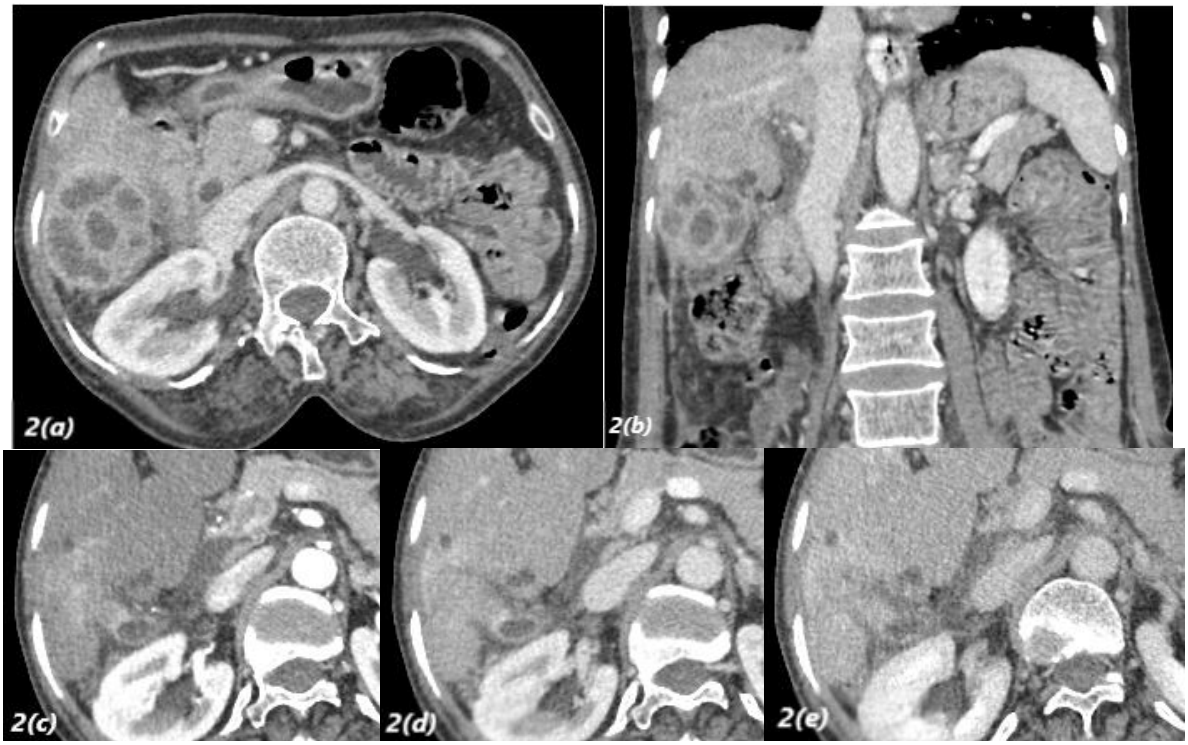

Figure 2(a) and (b): Gall bladder is contracted with hypo-enhancing areas within the thickened gall bladder wall. The border between the gall bladder and the liver are ill defined at places. Marked stranding and infiltrations into the adjacent liver and the adjacent pericholecystic fat is seen. The common bile duct is dilated.

Figure 2(c), (d) and (e): Few peripherally enhancing hypodense foci showing infiltrations into the liver parenchyma.

Open Cholecystectomy was done and was uneventful. The patient improved post-operatively and was discharged after 10 days. Pathological examination of the surgical specimen revealed xanthogranulomatous cholecystitiswith no presence of any malignant cells.

3. Discussion

Xanthogranulomatous cholecystitis was first described by McCot et al[3].Hale et al[4] observed that the incidence of xanthogranulomatous cholecystitisis approximately three to four times greater in India than in other geographical regions. Gall stones which are more prevalent in India are believed to be associated withxanthogranulomatous cholecystitis[4].

The probable pathogenesis is due to obstruction of the bile most commonly due to gall stones causing gallbladder wall inflammation and bile stasis. Due to increased stasis, the bile enters the stroma of the gall bladder through an ulcer of the surface mucosa or through a ruptured Aschoff-Rokitansky sinus. These are then ingested by macrophages to form xanthoma cells, and subsequently leads to xanthogranulomatous cholecystitis[1,2]

The clinical presentation in Xanthogranulomatous cholecystitisare non-specific and are usually similar to those of acute or chronic cholecystitisincluding pain right upper abdomen radiating to back, nausea, vomiting and fever[5]. In certain cases, the inflammatory changes can reach the cystic duct, the common hepatic duct and the common bile duct and can results to obstructive jaundice[6,7]. In ourcase the common bile duct was dilated, however there was no dilatation of the intrahepatic biliary radicles and liver function tests were within normal limits. A recent case report demonstrated a case of xanthogranulomatous cholecystitis which presented as frank empyema[8]. In our case, the patient presents with pain abdomen, nausea and vomiting.

Radiologically, findings in xanthogranulomatous cholecystitis like marked thickening of the gall bladder wall, intense surrounding inflammatory changes, adhesions and infiltrations into the adjacent structures closely resembles carcinoma gall bladder which were also seen in our case. However certain findings have been observed in xanthogranulomatous cholecystitis more often than carcinoma gall bladder and these include diffuse gallbladder wall thickening, continuous mucosal lining, intramural hypoattenuating nodules in the thickened walls, absence of intrahepatic bile duct dilatation. Presence of regional lymphadenopathy is also more prevalent in carcinoma compared to xanthogranulomatous cholecystitis[9].The surrounding inflammation and infiltration can be so profound and can extend to the neighbouring organs such as liver, omentum, and duodenum causing perforations, thick adhesions and abscess formation[6] which can resemble carcinoma gall bladder. Makino et al[10]reported a case in which xanthogranulomatous cholecystitis showed FDG uptake on PET which is similar to carcinoma gall bladder. Being an inflammatory process, xanthogranulomatous cholecystitis also show FDG uptake, thus PET-FDG is not useful in differentiating xanthogranulomatous cholecystitis from carcinoma gall bladder. In addition, even though

xanthogranulomatous cholecystitis is not considered to be pre-malignant, approximately less than 3% of patients,carcinoma gall bladder can co-exist with xanthogranulomatous cholecystitis[11].

Because of these overlapping features of xanthogranulomatous cholecystitis and carcinoma gall bladder clinically, radiologically and surgically, differentiating xanthogranulomatous cholecystitis andcarcinoma gall bladder can be very difficultpre-operatively.

Simple cholecystectomy remains the treatment of choice howevercomplete cholecystectomy is difficult to achieve in some cases. Postoperative complications like bile leakage, bleeding, abscess formation, wound infections, cholangitis, and stenosis are more associated with xanthogranulomatous cholecystitis patients as compared with other gall bladder pathologies.

4. Conclusion

Xanthogranulomatous cholecystitis is a rare form of chronic cholecystitis which can mimic carcinoma gall bladder. Despite the use of advanced imaging modalities, it is often difficult to radiologically differentiate xanthogranulomatous cholecystitis from carcinoma gall bladder especially in cases of extreme inflammatory changes which remains a challenge in clinical practice. Xanthogranulomatous cholecystitis and carcinomagall bladder can also co-exist, which makes their differentiation even more difficult even intra-operatively. Radical surgical resection is usually preferred in cases where malignancy cannot be ruled out. Utmost care should be taken after considering the pathological and the radiological findings to reach to the final opinion and course of treatment.

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