

## Case Report

# Xanthogranulomatous cholecystitis infiltrating anterior abdominal wall: a rare case report

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## ABSTRACT

Xanthogranulomatous cholecystitis (XGC) is a benign chronic inflammatory disease of the gallbladder often presenting as features of chronic cholecystitis. The disease closely mimics gallbladder carcinoma (GBC) and distinguishing XGC from gallbladder cancer preoperatively is very challenging. Biochemical or radiological investigations cannot differentiate XGC from GBC and they share overlapping symptoms. Reporting here is a 31 year old female patient who presented with features of failed attempt of cholecystectomy due to suspected carcinoma gallbladder at an outside hospital. Even CECT abdomen showed gallbladder mass with hepatic and anterior abdominal wall infiltration. Intraoperatively, there was a mass in the gallbladder with large calculi and extending into the adjacent liver, anterior abdominal wall and part of hepatic flexure of colon. Radical cholecystectomy with en block excision of anterior abdominal wall and part of hepatic flexure of colon was done. Frozen section and final histopathological reports confirmed the diagnosis of XGC.

**Keywords:** Cholecystitis, Xanthogranulomatous, Gallbladder cancer, Infiltration, Anterior abdominal wall

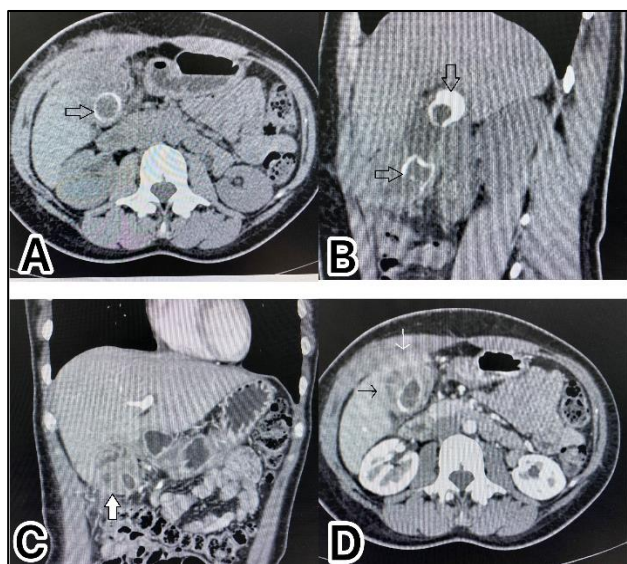
## INTRODUCTION

Xanthogranulomatous cholecystitis (XGC) is a destructive benign inflammatory condition of gallbladder characterized by asymmetrical thickening of the gallbladder wall due to inflammatory infiltration and proliferative fibrosis with the formation of multiple yellowish-brown nodules extending into the adjacent organs, like the liver, omentum and duodenum.<sup>1-3</sup> The primary pathology in XGC is rupture of the Rokitansky-Aschoff sinuses with extravasation of bile secondary to high intrabiliary pressure due to obstruction of the bile duct. This leads to xanthogranulomatous inflammatory reaction often extending to adjacent structures like the liver, duodenum, transverse colon, and omentum mimicking malignancy.<sup>4</sup> XGC and GBC share overlapping features and rarely harbor a co-existent GBC in the backdrop of XGC.<sup>1</sup>

## CASE REPORT

A 31 year old female patient was referred to our hospital from the neighbouring state with the history that doctors planned for cholecystectomy for gallstone disease, but abandoned the procedure suspecting malignancy as there were dense adhesions and referred the patient to our hospital for further management of the case. No biopsy or fine needle aspiration cytology (FNAC) was done in the previous hospital. She presented with the features of chronic cholecystitis in the previous hospital with thickened gallbladder wall on ultrasonography. She underwent contrast enhanced computed tomography (CECT) where it was found that there was large gallbladder calculi within the lumen of the gallbladder (broad black arrows in images A and B of Figure 1) with wall thickening in the fundus of gallbladder (broad white arrow in image C of Figure 1), and loss of fat planes with

anterior abdominal wall (Thin white arrow in image D of Figure 1) and adjacent hepatic parenchyma (Thin black arrow in image D of Figure 1). No positron emission tomography-computed tomography (PET-CT) was done as the facility was not available in treating hospital. After thorough pre-operative investigations, the patient was taken up for possible extended cholecystectomy with intra-operative frozen section study. Even though, the age of the patient was more in favor of benign etiology, however extended cholecystectomy was planned as the disease involved the adjacent hepatic parenchyma, colon and anterior abdominal wall which had to be removed for complete excision of the mass. However, as frozen section showed no evidence of malignancy, no lymphadenectomy was performed. No FNAC was done pre-operatively due to the fear spread of disease in case it turns out to be malignant. Incision given was modified Makuuchi incision below the suspected area of muscle infiltration and the previous right subcostal incision. The suspected area of muscle infiltrated area was excised en block with the gallbladder, part of transverse colon and around 3 cm of adjacent liver parenchyma (Figure 2).



**Figure 1 (A-D): CECT of gallbladder mass with large gallstone infiltrating part of liver, anterior abdominal wall and colon.**

Frozen section was sent which did not show any malignant cells. Two large calculi were retrieved from the cut open gallbladder. Histopathological examination of the resected specimen showed dense chronic inflammation consisting of plasma cells, lymphocytes and histiocytes in the gallbladder. The thickened areas in gallbladder showed dense fibrosis with chronic inflammatory cells and foreign body giant cells with features suggestive of XGC. The thickness of the gallbladder wall was measured at 1.1 cm on gross sectioning. The adjoining infiltrated muscles also showed dense fibrosis with chronic inflammatory cells. Sections studied from liver showed dense fibrosis, portal triaditis with lymphoid follicle formation alongwith chronic

inflammation consisting of plasma cells, lymphocytes, histiocytes and portal fibrosis favouring the diagnosis of chronic non-specific hepatitis. Resected colonic mucosa showed submucosal colonic congestion and edema with otherwise unremarkable findings. No malignant cells were seen in any of the resected specimen. Postoperatively, patient developed superficial wound infection which healed subsequently after about 3 weeks and was discharged home uneventfully.



**Figure 2: The resected gallbladder mass with part of liver, colon, anterior abdominal muscles and gallstone.**

## DISCUSSION

The common age of presentation of the disease ranges from 44 to 63 years and it is seen mostly amongst patients from South Asian or Japanese population.<sup>4</sup> XGC was described initially as 'fibroxanthogranulomatous inflammation' by Christensen and Ishak in the year 1970.<sup>5</sup> Later it was coined as 'XGC' in the year 1976 McCoy et al.<sup>6</sup> The prevalence of XGC ranges from 0.7% in the United States to approximately 10% in India. There is no gender predilection of the disease condition.<sup>7</sup> Similar incidence rate has been reported by Rammohan et al and Singh et al.<sup>8,9</sup>

As XGC is frequently misdiagnosed as GBC, patients usually end up undergoing an extended radical cholecystectomy.<sup>1</sup> XGC commonly infiltrates liver, and rarely can also involve duodenum, colon, stomach and abdominal wall.<sup>9</sup> In 8.5% to 30.5% of cases, XGC may be associated with GBC.<sup>10</sup> Tumor markers cannot differentiate XGC from GBC. CA19-9 can be raised in 76% of patients with XGC similar to patients with GBC. However, CEA was raised only in about 14% of patients with XGC.<sup>1</sup> CA 19.9 usually normalizes soon after surgery for XGC unlike GBC where it remains high for a longer duration.

Clinical findings or laboratory investigations cannot differentiate XGC from gall bladder cancer and the final diagnosis of XGC is dependent on histological examination.<sup>1</sup>

Even the imaging findings cannot differentiate XGC and GBC reliably due to overlapping features.<sup>11</sup> Even PET-CT cannot differentiate XGC from GBC.<sup>12</sup>

Preoperative FNAC in XGC may help in differentiating XGC from malignancy; however, it is less preferred due to the possibility of tumor seeding of the track along with fistula formation.<sup>11</sup>

## CONCLUSION

XGC is not an infrequent condition of gallbladder and it closely mimics gallbladder cancer until proven histopathologically. Clinical features of the two disease conditions are very similar and biochemical or even radiological investigations is not able to differentiate the two disease conditions. The treatment for XGC is simple cholecystectomy if frozen section intra-operatively confirms the diagnosis of XGC.

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## REFERENCES

- Deng YL, Cheng NS, Zhang SJ, Ma WJ, Shrestha A, Li FY, et al. Xanthogranulomatous cholecystitis mimicking gallbladder carcinoma: An analysis of 42 cases. *World J Gastroenterol*. 2015;21:12653-9.
- Nacif LS, Hessheimer AJ, Rodríguez Gómez S, Montironi C, Fondevila C. Infiltrative xanthogranulomatous cholecystitis mimicking aggressive gallbladder carcinoma: A diagnostic and therapeutic dilemma. *World J Gastroenterol*. 2017;23:8671-8.
- Zhang LF, Hou CS, Liu JY, Xiu DR, Xu Z, Wang LX, et al. Strategies for diagnosis of xanthogranulomatous cholecystitis masquerading as gallbladder cancer. *Chin Med J (Engl)*. 2012;125:109-13.
- Roberts KM and Parsons MA. Xanthogranulomatous cholecystitis: clinicopathological study of 13 cases. *J Clin Pathol*. 1987;40(4):412-7.
- McCoy JJ Jr, Vila R, Petrossian G, McCall RA, Reddy KS. Xanthogranulomatous cholecystitis. Report of two cases. *J S C Med Assoc*. 1976;72:78-9.
- Guzman-Valdivia G. Xanthogranulomatous cholecystitis: 15 years' experience. *World J Surg*. 2004;28:254-7.
- Rajaguru K, Mehrotra S, Lalwani S, Mangla V, Mehta N, Nundy S. New scoring system for differentiating xanthogranulomatous cholecystitis from gall bladder carcinoma: A tertiary care centre experience. *ANZ J Surg*. 2018;88:34-9.
- Rammohan A, Cherukuri SD, Sathyanesan J, Palaniappan R, Govindan M. Xanthogranulomatous cholecystitis masquerading as gallbladder cancer: can it be diagnosed preoperatively? *Gastroenterol Res Pract*. 2014;2014:253645.
- Singh VP, Rajesh S, Bihari C, Desai SN, Pargewar SS, Arora A. Xanthogranulomatous cholecystitis: What every radiologist should know. *World J Radiol*. 2016;8(2):183-91.
- Krishnani N, Shukla S, Jain M, Pandey R, Gupta RK. Fine needle aspiration cytology in xanthogranulomatous cholecystitis, gallbladder adenocarcinoma and coexistent lesions. *Acta Cytol*. 2000;44:508-14.
- Khan S, Abeer I, Husain M, Hassan MJ, Jetley S. Xanthogranulomatous cholecystitis mimicking advanced gallbladder carcinoma-Analysis of 8 cases. *J Can Res Ther*. 2021;17:969-74.
- Sawada S, Shimada Y, Sekine S, Shibuya K, Yoshioka I, Matsui K, et al. Expression of GLUT-1 and GLUT-3 in xanthogranulomatous cholecystitis induced a positive result on 18F-FDG PET: report of a case. *Int Surg*. 2013;98:372-8.

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