A unique kind of Cholecystitis

Aisha Aslam,[1] Naveed Ali Khan[2]

Abstract

Xanthogranulomatous Cholecystitis (GC) is a rare inflammatory pathology of the gallbladder which so far remains unreported in Pakistan. The aetiology and provocative factors of this form of cholecystitis following the pattern of Xanthogranulomatous inflammation in other visceras remain undetermined. It is a destructive inflammatory process and is difficult to differentiate from malignant entities; usually characterised by lipid laden macrophages and acute or chronic inflammatory cells. It is often discovered on frozen sections later confirmed by permanent sections, as in our case. To the best of our knowledge, this is the first reported case of Xanthogranulomatous Cholecystitis in Pakistan. We hope that documenting the occurrence will lead to more research in this regard.

Keywords: Cholecystits, Xanthomatosis.

https://doi.org/10.5455/JPMA.292823

Introduction

Aggregation of lipid-laden foamy macrophages or xanthomas along with a dense inflammatory infiltrate including lymphocytes, neutrophils, plasma cells and multinucleated giant cells accompanied by a fibrous reaction in the walls of any organ is clinically termed as xanthogranulomatous inflammation. It was first reported in the genitourinary tract[1] and since then it has been described as a disease entity in many visceras; most common of which are kidneys and the gallbladder.[2] It is a benign but locally infiltrative condition which can be mistaken for adenocarcinoma even after radiological studies and examination of the macroscopic features both pre and intra operatively. Xanthogranulomatous Cholecystitis most often presents with pain and obstructive jaundice along with other hallmarks of gall bladder disease. We present a case of a pre-diagnosed cholelithiasis that was discovered to be Xanthogranulomatous Cholecystitis.

[1]5th Year MBBS Student, Dow University of Health Sciences, Karachi, [2]Dow University of Health Sciences, Civil Hospital, Karachi, Pakistan.
Correspondence: Aisha Aslam. Email: aishaaslam63@hotmail.com

Case Report

A 40-year-old female presented to Dr Ruth Pfau, Civil Hospital Karachi in October, 2017. Patient complained of localized right hypochondrium pain for 3 months, it was severe in nature which disrupted her sleep and resulted in decrease of appetite. She denied any history of nausea, vomiting or any associated symptoms. There was no history of fever, chills, diarrhoea, melena or haematochezia. The patient did not report any co-morbidity and was not addicted to tobacco, alcohol or any other substances. She further stated that she had presented with the same complaints to the hospital 8 months back and was diagnosed with cholelithiasis. However, during the course of her stay, she had developed acute cholecystitis, which was managed conservatively as per the hospital's policy. She was then discharged and was called for interval cholecystectomy. Systemic history and physical examination revealed no abnormalities. Abdomen was soft, non-tender and no palpable mass or discrepancies were detected except for a scar in the right hypochondriac region indicating a previous excision for a hydatid cyst.

Initial workup of the patient did not exhibit any anomalies. Her chest X-ray and blood chemistry were normal. Judging by the history and presenting complaints, patient was considered to be in the chronic stage of cholelithiasis. An Ultrasound of the abdomen showed a dilated common bile duct with stones and inflammation in the gallbladder. After obtaining cardiology and anaesthesia approval, patient was scheduled for a laparoscopic cholecystectomy.

During the operation, gall bladder revealed prolific adhesions attaching it to the stomach, duodenum and the omentum accompanied by reactionary fluid around it. Gall bladder was diffusely inflamed with a thickened wall, empyema and an extension of the inflammation to the surrounding structures. Therefore, the operation was converted into an open cholecystectomy and the gall bladder along with a few surrounding lymph nodes and parts of liver segment IV were resected. These were then sent for histopathological analysis, empyema was drained and the pus sent for culture study.

Histopathological analysis of the resected specimens showed that the gallbladder measured 7.5cm by 2cm with a maximum wall thickness of 0.4cm. Serosa was pale

brown in colour with two black pigmented stones, one in the lumen and the other in the neck of the gallbladder. The mucosa was brown, largely ulcerated with dense acute and chronic inflammatory changes along with sheets of foamy histiocytes. Lining had columnar cells and in some areas, focal reactive changes in the form of foreign body type giant cell reaction were visible. A single benign reactive lymph node was also detected. Fragments of the liver tissue were benign in nature with no evidence of intestinal metaplasia, dysplasia or malignancy.

Post-operative recovery of the patient was uneventful and she was discharged 5 days later.

Based on histopathological analysis, diagnosis of Xanthogranulomatous Cholecystitis was made. Consent was then obtained from the patient to report the case.

Discussion

Xanthogranulomatous cholecystitisis is a rare variant of chronic cholecystitis. Focally destructive enough to be considered a priority for immediate removal of the disease process through resection, and benign enough for it to remain uncategorized as a cancerous process or a precursor lesion of malignancy.[3] However, it has amassed enough documentation for it to be ascertained that the clinical presentation and gross observation of xanthogranulomatous inflammation of the gall bladder mimics adenocarcinoma of the organ[4,5] and in consequence, patients have been treated with extensive surgical resection for treatment of the aforesaid suspicion.[6]

The aetiology of XGC has yet to be established for certain. The pathology is thought to be related to extravasation of bile into the gallbladder wall from rupture of Rokitansky-Aschoff sinuses or from mucosal ulceration. Extravasated bile causes histiocytes to accumulate in an effort to phagocytose insoluble cholesterol. A fibrous reaction and scarring results due to healing of the inflammatory reaction. Blockade of the neck of the gall bladder by a stone or a tumour resulting in increased intraluminal pressure is the triggering factor for the rupture of sinuses in most cases.[3] Another theory proposes recurrent inflammation due to stone disease resulting in degeneration of the gallbladder wall and abscess formation.[7] The end product of this inflammation is fibrosis and scarring resulting in gall bladder wall thickening leading to mass formation and fistulization. The effacement of the gallbladder wall and spread of the reaction into adjacent organs such as the liver, duodenum, lymph nodes and stomach etc.[8] simulates a neoplasm.

The presenting symptoms of GC very much overlap the clinical manifestations of carcinoma of gall bladder with right hypochondriac pain (93.9%), radiating to shoulder and back pain (42.4%), fever (24.2%), nausea (33.3%), and vomiting (24.2%)[9] as both are chronic cholecystitis causing disease entities. However, in cases of advanced malignancy, weight loss, features of ascites or metastases may be part of the clinical spectrum of adenocarcinoma and distinguish it from the more frequent presentations of abdominal pain, jaundice and palpable lump in patients with GC. Jaundice is seen in patients with concomitant cholelithiasis, Mirizzi syndrome, choledocholithiasis and since gallstones are a major aetiological feature, they seem to be present in almost all the patients.[10] Patients with GC usually exhibit one or more episodes of acute cholecystitis prior to an average of six months of presentation. A past acute cholecystitis episode may also be a predictor for diagnosing GC as it is reflective of the course of the disease.[11] Most studies, have established a female preponderance for GC and declared it to be common in the fifth and sixth decades of life.[10]

There are no consistent biochemical or haematological findings that aid in the diagnosis. Imaging studies and fine needle aspiration cytology may be suggestive and aided by intraoperative frozen sections; however, definitive diagnosis is only possible through histological examination of the resected gall bladder through permanent section. Ultrasonographic findings indicative of GC have been established to be a thickened gallbladder wall with intramural hypoechoic nodules or bands but the utility of this investigation remains limited since similar findings have been reported in intramural abscesses, cholesterolosis and adenomyomatosis. Contrast enhanced ultrasound fares better. PET is inaccurate. Too little data exists on delineating characteristic findings in MRI for it to be recommended as a screening or a diagnostic tool. Oral and intravenous cholecystography are also nonspecific. Preoperative Fine Needle Aspiration Cytology carries some significance in preoperative diagnosis since it exhibits the presence of histiocytes, foam cells, multinucleate giant cells and lymphocytes upon a background of pink granular which was thought to be characteristic of GC. However, this nuclear pleomorphism in histiocytes can also be appreciated in malignancy. Therefore, this test as well, remains nonspecific.[10]

Contrast enhanced CT scan seems to be the cornerstone for preoperative diagnosis of GC. According to a research conducted by Goshima S et al;[12] undertaken to characterize hallmark attributes of GC, the following five findings are declared to be predictive of the disease: diffuse gallbladder thickening, continuous mucosal line, intramural hypoattenuated nodules, absence of macroscopic hepatic invasion, and the absence of intrahepatic duct dilatation. When at least three of the five CT findings were observed, the sensitivity and specificity were 83 and 100 percent respectively. A number of

researches since, have backed up these observations.[13] Grossly, the gallbladder appears as a white or yellowish hard mass with thick walls and prolific adhesions to the surrounding tissues. Reactive lymph nodes,[14] fistulous communications, gallbladder perforations and abscess formation maybe present. Treatment attempts of the latter have included attempts at percutaneous drainage, however, cholecystectomy is the only curative option.[15]

As mentioned earlier, the aetiology of the exact trigger for Xanthogranulomatous cholecystitis still remains to be established, however, it is found to be associated with other xanthomas of the stomach,[16,17] colon, duodenum and in conditions like tuberculosis and sarcoidosis.[18] Not only does it mimic gallbladder carcinoma in presentation, it often coexists with it which leads to speculations about it being a premalignant lesion.[19] A study suggested a malignant potential of GC because of its up regulated oncogenes (BCL-2, cMyc), while many others suggest the pure inflammatory nature of the infiltrate through expression of p53, Proliferating Cell Nuclear Antigen (PCNA) and beta catenin.[20] It remains thus far, benign in nature without any proven potential for malignancy or increasing the likelihood for it.

Cholecystectomy is the course of action to take in patients prediagnosed with or those with intraoperative findings suggestive of GC. Open cholecystectomy used to be advised by most authors due to dense fibrosis, extensive local inflammation and concerns of a coexistent malignancy. However, as experience with laparoscopic cholecystectomy increased, the conversion and morbidity rates decreased. The laparoscopic approach is now used more frequently in the management.[3] A complete resection of the granulomatous bed should be undertaken even if it means extending into the hepatic bed.[11] In conclusion, in any patient presenting with episode(s) of acute cholecystitis; features of obstructive jaundice, carcinoma of this region and evidence of a thickened gallbladder upon imaging, xanthogranulomatous cholecystitis should be considered a differential diagnosis and it should be confirmed through histopathology so that the incidence and primary features in our country be included in international records.

Disclaimer: None to declare.

Conflict of Interest: None to declare.

Funding Disclaimer: None to declare.

References

1. Peterson RO. Kidney. In: Peterson RO, eds. Urologic pathology. Philadelphia: JB Lippincott, 1986; pp 40–6.
2. Singh V, John KM, Malik A, Pareek T, Dutta V. Xanthogranulomatous appendicitis: Uncommon histological variant of a common entity. Med J Armed Forces India. 2015; 71:S19-21.
3. Asit Arora, Shyam Sunder Mahensaria. Xanthogranulomatous Cholecystitis. GI Surg Ann 2017; 23:83-92.
4. Mohit Sharma, Rachhpal Singh, NeetiRajan Singh. Xanthogranulomatous Cholecystitis-A masquerade of Gallbladder Carcinoma. CIB Tech J Surg. 2014; 3:13-6.
5. Suzuki H, Wada S, Araki K, Kubo N, Watanabe A, Tsukagoshi M, et al. Xanthogranulomatous cholecystitis: Difficulty in differentiating from gallbladder cancer. World J Gastroenterol. 2015; 21:10166-73.
6. Spinelli A, Schumacher G, Pascher A, Lopez-Hanninen E, Al-Abadi H, Benckert C, et al. Extended surgical resection for xanthogranulomatous cholecystitis mimicking advanced gallbladder carcinoma: A case report and review of literature. World J Gastroenterol. 2006; 12:2293-6.
7. Fligiel S, Lewin KJ. Xanthogranulomatous cholecystitis: case report and review of the literature. Arch Pathol Lab Med. 1982; 106:302–4.
8. Pinocy J, Lange A, König C, Kaiserling E, Becker HD, Kröber SM. Xanthogranulomatous cholecystitis resembling carcinoma with extensive tumorous infiltration of the liver and colon. Langenbecks Arch Surg. 2003; 388:48-51.
9. Yang T, Zhang BH, Zhang J, Zhang YJ, Jiang XQ, Wu MC. Surgical treatment of xanthogranulomatous cholecystitis: experience in 33 cases. Hepatobiliary Pancreat Dis Int. 2007; 6:504-8.
10. Gallarín Salamanca IM, López Sánchez O, Blanco Fernández G. Xanthogranulomatous cholecystitis. J Gastrointest Surg. 2016; 20:1916-7.
11. 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.
12. Goshima S, Chang S, Wang JH, Kanematsu M, Bae KT, Federle MP. Xanthogranulomatous cholecystitis: diagnostic performance of CT to differentiate from gallbladder cancer. Eur J Radiol. 2010; 74:e79-83.
13. Qasaimeh GR, Matalqah I, Bakkar S, Al Omari A, Qasaimeh M. Xanthogranulomatous cholecystitis in the laparoscopic era is still a challenging disease. J Gastrointest Surg. 2015; 19:1036-42.
14. Truant S, Chater C, Pruvot FR. Greatly Enlarged Thickened Gallbladder. JAMA Surg. 2015; 150:267-8.
15. Klarenbeek BR, van Veen SA, Stockmann HB. Percutaneous Gallbladder Drainage for Xanthogranulomatous Cholecystitis. Surg Laparosc Endosc Percutan Tech. 2008; 18:506-7.
16. M Guarino, D Reale, G Micoli, P Tricomi, E Cristofori. Xanthogranulomatous gastritis: Associatlion with xanthogranulomatous cholecystitis. J Clin Pathol. 1993; 46:88-90.
17. Fu CK, Hsieh TY, Chan DC, Lee HS, Huang TY. Xanthogranulomatous cholecystitis Xanthogranulomatous cholecystitis presenting with duodenal ulcer and cholecystoenteric fistula. Endoscopy. 2012; 44:E213-4.
18. Handra-Luca A. Granulomatous lithiasic cholecystitis in sarcoidosis. Clin Pract. 2016; 6:811.
19. Hale MD, Roberts KJ, Hodson J, Scott N, Sheridan M, Toogood GJ. Xanthogranulomatous cholecystitis: a European and global perspective. HPB (Oxford). 2014; 16:448-58.
20. Kai K. Organ-specific concept and controversy for premalignant lesions and carcinogenesis of gallbladder cancer. Hepatobiliary Surg Nutr. 2016; 5:85-7.