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Case Report

Clear Cell Carcinoma Gall Bladder: Mimicker of Xanthogranulomatous Cholecystitis

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Abstract

The incidence of clear cell carcinoma of gall bladder is very low. The mean age of diagnosis is 60 years. The potential cause of clear cell carcinoma of gall bladder has been shown to be associated with gallstones. It is difficult to determine that clear cell morphology is due to metastasis, notably from clear cell renal cell carcinoma or whether these are primary tumor of the gall bladder. We report a case of clear cell carcinoma of the gall bladder in a 56-year-old female, who presented with abdominal discomfort along with pain and bloating that was aggravated mainly after the meal, with an aim to emphasize the importance of taking an accurate medical history in patients with clear cell carcinoma, a rare malignant tumor of the gall bladder.

Keywords: Carcinoma, Clear Cells, Gall bladder, Histopathology, Xanthogranulomatous.

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Introduction

Gall bladder carcinoma is a rare gastrointestinal tumor which has a poor prognosis with low survival rate and is difficult to diagnose. The most common type of gall bladder cancer is adenocarcinoma. The incidence of clear cell carcinoma gall bladder (CCG) is very low.[1] It has been observed that in clear cell carcinoma, it is difficult to determine that clear cell morphology is due to metastasis, notably from clear cell renal cell carcinoma or whether these are primary tumor of the gall bladder.[2] So, it should be kept in mind that before making the diagnosis of clear cell carcinoma as a primary gall bladder carcinoma, the kidneys and other possible secondary focuses are clinically considered in terms of metastases. [2,3]

With a mean age of 60 years at diagnosis, the majority of reported clear cell carcinoma patients in the literature were female [4]. The aetiology of clear cell carcinoma of the gallbladder is complex, although it has been demonstrated that gallstones may play a role [3]. In this case report, we looked at a clear cell carcinoma case that had persistent cholecystitis and cholelithiasis at presentation.

CASE SUMMARY

A 56-year-old female patient presented to the surgery out-patient department with abdominal discomfort along with pain and bloating that was aggravated mainly after the meal. The patient's medical history gave only a positive history of hypertension. The patient also had a history of similar complain of her elder sister three years ago, who also had jaundice and died 4 months later after the clinical symptom of jaundice. She was neither investigated nor operated.

The physical examination revealed tenderness on deep palpation in the right upper quadrant. Abdominal ultrasound showed eccentric wall thickening of gall bladder in fundal region, with multiple calculi seen in the lumen of size 0.5 to 1.5 cm (Figure 1). Mild vascularity was seen on the color flow study. The abdominal computed tomography (CT) with contrast revealed irregular eccentric enhancing wall thickening of gall bladder in fundal region. There was no appreciable polypoidal mass seen in the lumen and there was no sign of local invasion to adjacent structures

(Figure 2). The magnetic resonance imaging (MRI) findings were suggestive of carcinoma of the gall bladder. Positron emission tomography (PET) scanning was performed in order to screen for other metastatic foci. No metastatic foci were identified.

Considering that the tumor was limited to the gall bladder, the patient underwent laparoscopic cholecystectomy. Gross specimen of gall bladder showed multiple stones of size ranging from 0.5cm to 1.5cm, maximum wall thickness of 1.0 cm with focally ulceration. The histopathological examination showed sheets of atypical cells extending transmurally, with cells having hyperchromatic nuclei and abundant clear cytoplasm with PAS positivity. No extension of tumor cells to the serosa and no lymphovascular invasion was observed (Figure 3 and 4). The final report was given as clear cell carcinoma of gall bladder, histological grade III, pathological stage T1. Our patient is doing well and fine after 3 months of follow up period.

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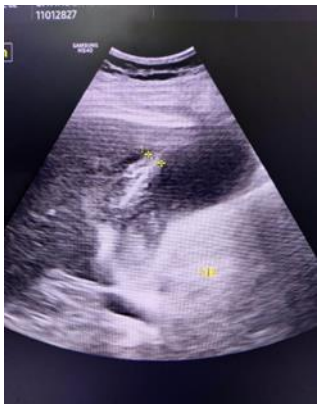

Figure 1: Abdominal ultrasound showed eccentric wall thickening of gall bladder in fundal region, with multiple calculi seen in the lumen of size 0.5 to 1.5 cm.

Figure 2: Abdominal computed tomography (CT) with contrast revealed irregular eccentric enhancing wall thickening of gall bladder in fundal region, with no appreciable polypoidal mass seen in the lumen and there was no sign of local invasion to adjacent structures.

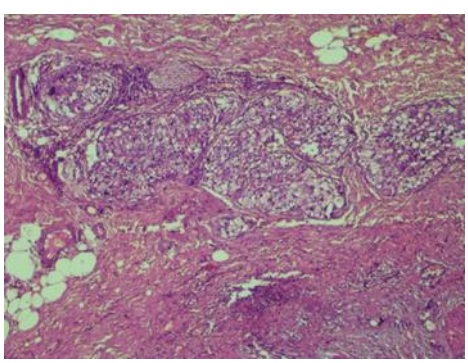

Figure 3: Section shows sheets of highly atypical cells clear to eosinophilic granular cytoplasm and hyperchromatic nuclei. Haematoxvlin and Eosin x 40X.

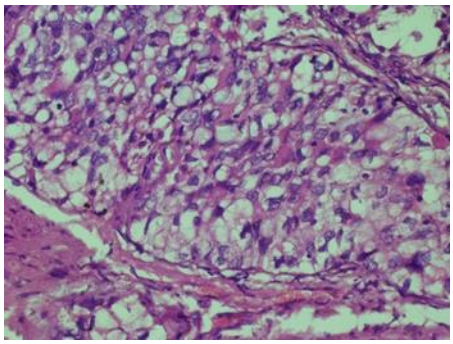

Figure 4: Atypical cells having hyperchromatic nuclei and abundant clear cytoplasm with PAS positivity. PAS x 40X.

DISCUSSION

Gall bladder carcinoma is relatively rare than other carcinomas of digestive tract. It ranks 5th worldwide in carcinoma arising from digestive system.[4] It is the most common malignancy of the biliary tract, accounting for 80%–95% of biliary tract cancers. [5]

Epidemiological studies have shown increase incidence of gall bladder carcinoma in Southeast Asia and in American Indians than elsewhere in the world.[6] The highest gall bladder cancer incidence rates worldwide were reported in women of Delhi, India (21.5/100,000), South Karachi, Pakistan (13.8/100,000) and Quito, Ecuador (12.9/100,000). Gall bladder cancer is more frequently seen in women. [7]

The risk factors for gall bladder cancer are the presence of a stone larger than 2 cm in diameter, polyps larger than 1 cm in diameter, choledochal cysts, typhoid and Opisthorchis infestation, primary sclerosing cholangitis, porcelain gallbladder and excessive consumption of red meat and tobacco. [8,9]

Surgical treatment of gall bladder carcinoma varies. It depends on the stage of the disease, localization of tumor and its recurrence. While in some patients, cholecystectomy is sufficient and some may require major operations such as hepatectomy, resection of the bile duct and pancreatico-duodenectomy. [10]

In stage I (T1, N0) gall bladder cancer cases have reported a 100% 5-year survival with only cholecystectomy. [10] Clinically examining potential secondary foci, particularly in the kidneys for the primary carcinoma, is preferred before concluding that clear cell carcinoma is a primary gall bladder cancer [2,3]. Our patient underwent a laparoscopic cholecystectomy despite having stage I illness. Our goal in presenting this case was to highlight how crucial it is to obtain a complete medical history from individuals who have clear cell carcinoma, a rare type of malignant tumour that develops in the gallbladder.

CONCLUSION

In tumors with clear cell morphology, the probability of metastasis from other organs, notably in kidney, with clear cell morphology should be suspected first. A diagnosis of clear cell carcinoma should be based on imaging, gross findings and histopathology features, with immunohistochemistry.

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Nil

Conflicts of interest

There are no conflicts of interest

REFERENCES

1. Zatonski WA, Przewozniak K, Lowenfels AB, Boyle P, Maisonneuve P, Bueno de Mesquita HB et al. Epidemiologic aspects of gallbladder cancer: a case-control study of the SEARCH Program of the International Agency for Research on Cancer. J National Cancer Inst 1997; 89(15):1132-8.

2. Buchanan Jr TF and Huvos AG. Clear-cell carcinoma of the liver: a clinicopathologic study of 13 patients. Am J Clin Pathol 1974; 61(4):529-39.

3. Bittinger A, Altekrüger I, Barth P. Clear cell carcinoma of the gallbladder: a histological and immunohistochemical study. Pathol Res Prac 1995;191(12):1259-65.

4. Zhang C, Zhang W, Mu D, Shi X, Zhao L. A clear cell adenocarcinoma of the gallbladder with hepatoid differentiation: case report and review of literature. Onco Targets Ther 2016;9:57-97.

5. Goetze TO, Bechstein WO, Bankstahl US, Keck T, Königsrainer A, Lang SA et al. Neoadjuvant chemotherapy with gemcitabine plus cisplatin followed by radical liver resection versus immediate radical liver resection alone with or without adjuvant chemotherapy in incidentally detected gallbladder carcinoma after simple cholecystectomy or in front of radical resection of BTC (ICC/ECC)–a phase III study of the German registry of incidental gallbladder carcinoma platform. BMC Cancer 2020;20(1):1-8.

6. Hundal R and Shaffer EA. Gallbladder cancer: epidemiology and outcome. Clin Epidemiol 2014;6:99-101.

7. Maharaj R, Cave C, Sarran K, Bascombe N, Dan D, Greaves W et al. A case report of the clear cell variant of gallbladder carcinoma. Int J Surg Case Reports 2017;32:36-9.

8. Rustagi T and Dasanu CA. Risk factors for gallbladder cancer and cholangiocarcinoma: similarities, differences and updates. J Gastrointest Cancer 2012;43(2):137-47.

9. Sikora SS and Singh RK. Surgical strategies in patients with gallbladder cancer: nihilism to optimism. J Surg Oncol 2006;93(8):670-81.

10. Lee SE, Jang JY, Lim CS, Kang MJ, Kim SW. Systematic review on the surgical treatment for T1 gallbladder cancer. World J Gastroenterol 2011;17(2):174-75

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