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Case reports

PORCELAIN GALLBLADDER: A CASE REPORT

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Abstract: Porcelain gallbladder is an extremely rare variant of chronic cholecystitis. Previous studies have shown that the incidence of gallbladder cancer has reached 60% in patients with porcelain gallbladder, but in more recent studies, this incidence has been proven to be around 6%. Therefore, surgical intervention is not recommended for every patient. Although laparoscopic surgery is the preferred method of treatment, It is recommended that open surgery should be preferred in some publications because of high complication rates and technical difficulties of laparoscopic approach.

Keywords: Porcelain, gallbladder, cholecystitis, cholecystectomy, calcificaiton.

INTRODUCTION

Calcified gallbladder, calcified cholecystitis, cholecystopathia chronica calcarea or more commonly known as porcelain gallbladder (PGB) is a rare cholecystopathological condition in which the entire gallbladder wall is calcified (1). The relationship of this condition with gallbladder cancer was first pointed out by Brown in 1932 (2). In the literature, there are articles that do not routinely recommend prophylactic cholecystectomy. However, risk of carcinomatous transformation and need of long time follow-up is a disadvantage of non-surgical follow-up. Cholecystectomy is the recommended treatment for these patients (3).

CASE PRESENTATION

A 62-year-old male patient with a three-day history of abdominal pain was admitted to the general surgery outpatient clinic. The patient who had no history of previous surgery and who was using valsartan 320mg due to hypertension. The patient had tenderness in the right upper quadrant and epigastric region. In blood tests, leukocyte: 14500/mm^3 (4600-10200), hemoglobin: 15.6 g/dl (14.1-18.1), AST: 71 U/L (5-34), ALT: 68 U/L (0-55), total bilirubin: 1.2 mg /dl, crp: 12.3 mg/dl (0-0.5). Abdominal ultrasonography revealed a 4 x 3 x 3 cm hyperechogenic mass and fluid around sub-hepatic region. In intravenous contrast enhanced abdominal computed tomography, we revealed that the gallbladder wall was completely calcified, the wall thickness was 8 mm and the gallbladder was 43 x 35 x 27 mm in size. As a result of the radiological tests, we diagnosed the mass as PGB. Cholecystectomy was planned. The right subcostal incision was made to the abdomen and the wall of the gallbladder was yellow-colored and completely calcified as it was stained with bile. Gallbladder was completely dissected from the liver bed and there was a small amount of fluid mixed with bile. Cystic duct was found to be natural following Callot dissection but the cystic artery could not be isolated as a separate structure. After ligating the cystic duct with 2/0 silk suture 2 times, the cystic duct was cut by placing the clamp on the duct near the Hartmann pouch and cholecystectomy was completed. The cholecystectomy specimen was completely solid-like formed (Figure 1). The postoperative recovery period was uneventful and on blood tests the on postoperative second day, leukocyte: 9700/mm^3, AST: 15U/L, ALT: 21U/L, CRP: 6.2 mg/dl, and total bilirubin: 0.9 mg/dl.

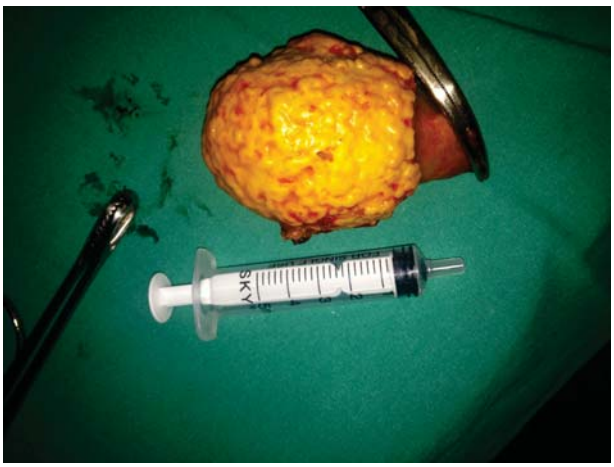

Figure 1. *Porcelain gallbladder*

On the second day, oral soft diet was started and he was discharged on the third day of his operation. No problems were found at the postoperative follow-ups on seven and twenty-first days. Pathological examination of the surgical specimen was reported as PGB and no signs of malignancy were observed.

DISCUSSION

The etiology of PGB has not yet been fully elucidated. The PGB, which the entire gallbladder wall is calcified, was first described by Fabré in 1831 (1). Khan et al found the incidence of PGB to be 1.1% (4). It is frequently observed between 3^{rd}-7^{th} decades of age and in obese women. Female/male ratio is 5/1 (5). Although the pathogenesis of this disease is not clearly understood, it is thought that it occurs due to dystrophic calcification, calcium metabolism disorders or gallbladder ischemia that follows the inflammation of gallbladder. Because of the widespread calcification, the gallbladder is rigid (6).

The relationship between PGB and gallbladder cancer was first described by Kazmierski et al. in 1951 (7). Etala et al. also reported that gallbladder cancer was observed in 16 (26.5%) of 26 patients with PGB (8). Machado reported that the incidence of gallbladder cancer was found to be 6.5% in PGB in the review of articles about PGB published between 1959 and 2016. Machado also found a decrease in the incidence of PGB-related carcinoma in the 70-year period, and argued strongly that this was related to developments in environmental factors and radio-diagnostic technology (9).

Patients present with right upper quadrant pain or a hard mass in the right upper quadrant. However, the disease is mostly asymptomatic and it is diagnosed when calcification is detected in abdominal imaging performed for another reason(10). Our patient presented with right upper quadrant pain.

Abdominal x-ray is helpful in diagnosis, but nowadays ultrasound and computed tomography are the radiological techniques used for diagnosis. In ultrasonography, the disease should be differentiated from emphysematous cholecystitis. Computed tomography is helpful in differential diagnosis (11). In our case, computed tomography was used for diagnosis.

Literature suggests that prophylactic cholecystectomy should be performed in asymptomatic cases with PGB (9). In a study performed by Chen et al, Cholecystectomy was performed to 102 of the 192 PGB cases between 2008 and 2013, and 90 patients without cholecystectomy after 3.5 years of follow-up had no gallbladder cancer (12). Although the laparoscopic approach is the recommended surgical method, but open surgical approach can be preferred because of the surgical technical difficulties due to the stone-like gallbladder and the high probability of conversion to open surgery (1).

CONCLUSION

PGB is an extremely rare disease of the biliary tract and is associated with a high incidence of gallbladder cancer. To our knowledge, the literature suggests prophylactic cholecystectomy even in asymptomatic cases. However, it is noteworthy that the in recent years the conservative approach and follow-up protocol have been used, instead of the surgical approach. We think that there exists a strong need for prospective studies examining the large case groups related to the treatment of this disease, whose etiology is still not fully resolved.

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Ethical Approval Statement

For this type of study, formal consent is not required.

Informed Consent Statement

Does not apply.

Abbrevations

AST — Aspartate aminotransferase
ALT — Alanine aminotransferase
CRP — C- reactive protein

DECLARATION OF INTEREST

The authors declare that there are no conflicts of interest.

Sažetak

PORCELANSKA ŽUČNA KESA: PRIKAZ SLUČAJA

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Porcelanska žučna kesa je izuzetno redak oblik hroničnog zapaljenja žučne kese. Prethodne studije navode da je incidenca pojave karcinoma žučne kese čak i do 60% u pacijenata koji imaju porcelansku žučnu kesu, ali najnovije studije navode da se zapravo ispostavilo da je incidenca oko 6%. S toga se hirurška intervencija ne savetuje svakom pacijentu. Iako je metoda izbora laparoskopska hirurgija, u literaturi se preporučuje otvorena hirurgija zbog višeg stepena pojave komplikacija, kao i tehničkih poteškoća prilikom laparoskopskog pristupa.

Ključne reči: porcelan, žučna kesa, holecistitis, holecistektomija, kalcifikacija.

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