Asian Journal of Case Reports in Surgery

8(3): 15-19, 2021; Article no.AJCRS.67303

A Rare Case of White Colored Gall Stone in Carcinoma Gall Bladder

Manabendra Baidya[1*], Syed Altamash[1], Ankur Deep Singh[1] and Satendra Kumar[1]

[1]Department of General Surgery, GIMS, Greater Noida, India.

Authors' contributions

This work was carried out in collaboration among all authors. Author MB designed and conceptualized the case report and was also involved in acquisition of data, drafting and editing the report. Authors SA, ADS and SK were involved in drafting and editing of the report. All authors read and approved the final manuscript.

Article Information

Editor(s):
(1) Dr. Georgios Tsoulfas, Aristoteleion University of Thessaloniki, Greece.
Reviewers:
(1) Sofia Xenaki, University General Hospital of Heraklion, Greece.
(2) Dervis Bandres, Centro Médico Docente La Trinidad, Venezuela.
(3) Guilherme de Andrade Gagheggi Ravanini, Federal University of the State of Rio de Janeiro (UNIRIO), Brazil.
Complete Peer review History: http://www.sdiarticle4.com/review-history/67303

Case Report

Received 05 February 2021
Accepted 11 April 2021
Published 20 April 2021

ABSTRACT

Aim: To highlight a newer and different type presentation of gall bladder stone.
Presentation of Case: 40 years old lady operated for cholelithiasis. Post-surgery when the gall bladder lumen was cut open it revealed a solitary, crystalline, white colored stone with irregular surface. The gall bladder mucosa also had a growth at the fundus which was later reported to be papillary adenocarcinoma of gall bladder in histopathology.
Discussion: Broadly gall stones are classified on the basis of their composition. They may be Cholesterol stones, mixed stones or Pigment stones. Majority of the times the type of stone can be identified by their color. Cholesterol stone can vary from whitish yellow to green to black in color. They are hard, multiple and faceted. Pigment stones again classified into black and brown in color. They are multiple, brittle and may be speculated. In our case the stone was totally white in color with speculated surface which is a very rare presentation and was found in a case of carcinoma gall bladder.
Conclusion: Presentation of such white color stones is very rare. Also this is the first case in which this type of stone has been found in association with carcinoma gall bladder.

**Corresponding author: E-mail: manabendra306@gmail.com;*

Keywords: Gall stone; white coloured; carcinoma gall bladder.

1. INTRODUCTION

Cholelithiasis is the most common pathology for which patients undergo cholecystectomy. Gall bladder stones can cause a number of complications like cholecystitis, Mucocele gall bladder, empyema gall bladder, carcinoma etc. Hence cholecystectomy is indicated. Cholecystectomy can be done either by open method or by laparoscopy. Laparoscopic cholecystectomy has widely replaced open method and is the most preferred mode for gall bldder surgeries [1,2]. Broadly gall stones are classified on the basis of their composition. They can be Cholesterol stones (more common) [3], mixed stones or Pigment stones. Cholesterol stones are crystalline in structure, pigment stones are compact, in contrast black pigment stones are amorphous in nature [4]. Pure cholesterol stones are rare, but majority of them have more than 70% cholesterol as composition. Whereas pigment stones are formed because of super saturation of calcium hydrogen bilirubinate, phosphate and carbonate [5,6]. Their cholesterol content is less than 20%. Mixed stones have more or less equal amount of cholesterol and bilirubin salts as their composition. Majority of the times the type of calculus can be identified by their color. Cholesterol stone can vary from whitish yellow to green to black in colour [7]. They are hard, multiple and faceted. Pigment stones again classified into black and brown in color. They are multiple, brittle and may be spiculated.

2. PRESENTATION OF CASE

Here we report a case of 40 year old female with right hypochondriac pain for 1 month with no other associated symptoms. Her ultrasonogram reported a single large calculus in gall bladder lumen and hence a diagnosis of cholelithiasis was made and patient had undergone laparoscopic cholecystectomy under general anaesthesia. On completion of cholecystectomy, gall bladder was retrieved and lumen was cut open. There was a solitary, round, white colored calculus with uneven surface (Fig. 1). A mucosal growth was also present at the fundus. On histopathology it turned out be papillary adenocarcinoma of gall bladder with pathological staging of $T_{1b}N_1M_0$. (Fig. 2).

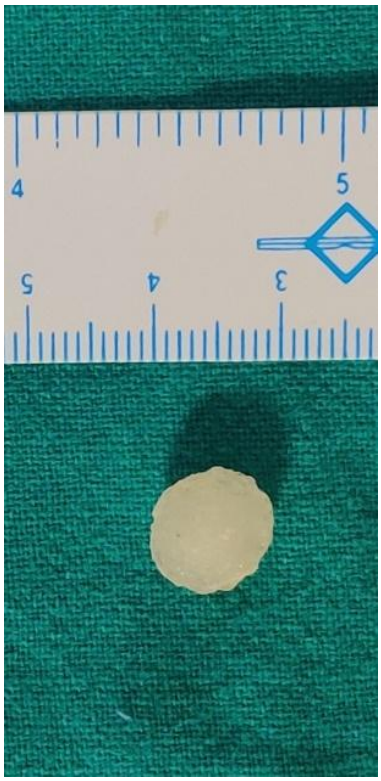

Fig. 1. White coloured gall stone with uneven surface

Fig. 2. Cut open gall bladder with white colored stone and growth at fundus

3. DISCUSSION

Most common presentation of symptomatic gall stone disease is right hypochondriac or epigastic pain. It can be easily diagnosed by ultrasonogram. But now a days more and more cases of asymptomatic gall stones are encountered which are detected incidentally on ultrasonogram done for some other pathology [8]. Cholecystectomy is standard mode of treatment in cases of cholelithiasis. Major constituent of gall stones are cholesterol and bilirubin salts. Their percentage may vary from stone to stone. Stone composition can vary according to the geographic region [9,10]. Super saturation of cholesterol in bile results in its nucleation and formation of cholesterol stone. Pure cholesterol stones are rare, but majority of them have more than 70% cholesterol as composition. Whereas pigment stones are formed because of super saturation of calcium hydrogen bilirubinate, phosphate and carbonate. Color of gall stones may vary from whitish yellow to brown to black based on their composition. Cholesterol stones generally vary from whitish yellow to green and pigment stones appear as black due to the presence of calcium bilirubinate. Brown stones are formed due to secondary bacterial infection due to bile stasis. These types of stones are soft in consistency. Very rarely we find complete white colored stone in gall bladder. On literature search there is only one case reported of white calculus. In 2018 Stoner et al reported retrieval of multiple pearly white stones from common bile duct through endoscopic retrograde cholangiopancreatography [11]. Thus till date there are no cases reported of white colored stones inside gall bladder. Also this is the

first case to be reported of white colored gall stones found in a case of carcinoma gall bladder.

4. CONCLUSION

Presentation of such white colored gall stones is very rare. Their composition needs to be studied further. Also this is the first case reported of such an association of white colored stones with carcinoma gall bladder. So this association needs to be further evaluated.

CONSENT

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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DOI: 10.14309/crj.2018.4
PMID: 29392151;
PMCID: PMC5772062.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/67303