Case Report

Cholesterolosis of Gallbladder: A Case Report

Harsha Jaykar, Gauri Metkar, Mangala Nagare, Sarangi Wankhade, Suraj Sangale, Rajendra Zope, Janice Jaison, Smita Bhide

Department of Pathology, Maharashtra Institute of Medical Education and Research, Pune, Maharashtra, India

ABSTRACT

Cholesterolosis, a rare surgical disorder, is characterized by the abnormal and excessive accumulation of triglycerides and cholesterol esters in the gallbladder's macrophages. This condition is more prevalent in females around the sixth decade of life and is relatively uncommon in younger individuals. Here, we present a case of a young female who experienced right hypochondrial pain along with abdominal discomfort. Clinically diagnosed with cholecystitis, she underwent a cholecystectomy, and incidentally, histomorphological examination revealed cholesterolosis.

Key words: Cholesterolosis, Cholesterol stones, Gallbladder

INTRODUCTION

Cholesterolosis is often an incidental finding in cholecystectomies, accounting for 16% of such cases, and is frequently associated with cholesterol gallstones.[1-4] It predominantly affects female patients in their sixth decade of life[5] and is often associated with a high body mass index (BMI). The condition is characterized by the accumulation of lipids (triglycerides, cholesterol precursors, and cholesterol esters) within subepithelial macrophages in the lamina propria of the gallbladder.[6,7]

CASE REPORT

We present the case of a 45-year-old woman who presented with complaints of intermittent colicky abdominal pain which was associated with nausea and vomiting. Her vital parameters were normal. Patient was afebrile. Laboratory investigation showed elevated serum glutamic pyruvic transaminase (152.0 mg/dL). Serum glutamic-oxaloacetic transaminase was 41.0 mg/dL. Alkaline phosphatase was also elevated (124.0 mg/dL). All other laboratory parameters were within normal limits. Ultrasonography (USG) showed features of calculous cholecystitis. With these clinical and radiological features, the patient underwent laparoscopic cholecystectomy and a resected specimen of the gallbladder was received in the histopathology laboratory.

Gross examination revealed an intact gallbladder specimen measuring 7.5 × 2 × 1.5 cm.

The external surface was congested. The cut surface revealed diffuse flat yellow dots (stippled appearance) on a mucosal surface of the gallbladder wall, a feature commonly known as "strawberry gallbladder." Lumen contained multiple yellow-colored stones [Figure 1].

Histomorphologically, gallbladder mucosa showed villous hyperplasia with foamy lipid-laden macrophages in lamina propria. Rokitansky-Aschoff sinuses were seen. Moderate lymphocytic infiltrate with few neutrophils was seen in the mucosa as well as the muscular layer [Figure 2 scanner view, Figure 3 ×40 view].

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Address for correspondence:
Dr. Mangala Nagare, Department of Pathology, Maharashtra Institute of Medical Education and Research, Pune, Maharashtra, India. Mobile: +91-9881099589. E-mail: stencildiagnostics@gmail.com

Figure 1: Cut surface of gallbladder showing stippled appearance on mucosal surface.

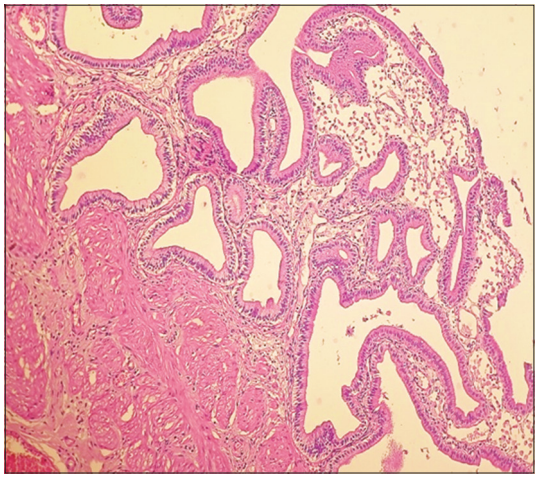

Figure 2: Scanner view, Villous hyperplasia.

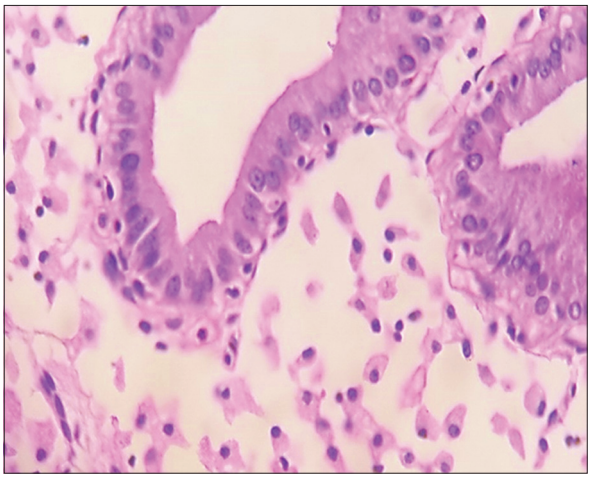

Figure 3: 40x view, Foamy lipid laden macrophages.

With these classic gross and histomorphological features, a final diagnosis of "Acute on chronic calculous cholecystitis with cholesterolosis" was offered.

DISCUSSION

Cholesterolosis is a benign condition of the gallbladder that starts with excess bile production leading to supersaturation with cholesterol. Patients who are unable to fully solubilize cholesterol will form cholesterol gallstones whereas patients who are able to keep cholesterol fully solubilized may have increased mucosal cholesterol uptake and develop cholesterolosis.[8] This is mostly seen in patients with increased acyl-CoA cholesterol ester acyltransferase activity in gallbladder mucosa.[9] This enzyme causes increased synthesis of cholesterol esters, which accumulate in mucosal macrophages.[10] Risk factors for cholesterolosis include female gender, increased BMI, excessive bile production, and unhealthy lifestyle. Cholesterol stones are often found associated with cholesterolosis.[5] On grossly there are diffuse or focal flat yellow dots on the lining of the gallbladder. Till now, numerous published studies on cholesterolosis of the gallbladder have indicated that lipids accumulate in the lamina propria, particularly in the protruding folds. In the present case report, foamy lipid-laden macrophages were also observed in the lamina propria along with mucosal villous hyperplasia and hypertrophy.[6,11-13] USG may reveal a thickened gallbladder wall with gallstone but cannot reliably detect Cholesterolosis.[14]

CONCULSION

Cholesterolosis usually presents as polypoidal lesions or diffuse or focal flat yellow dots on the mucosal lining of the gallbladder. It is most often an incidental finding in cholecystectomy patients, with increased synthesis of cholesterol esters accumulating in mucosal macrophages.

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