

## Case Report

# Cholecystitis in Young Age due to Cholesterolosis: A Case Report Study

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Cholesterolosis of the gallbladder is characterized by the accumulation of cholesterol esters and triglycerides in macrophages on the surface of the gallbladder wall, as well as hyperplasia of the mucous villi. As cholesterolosis and acute cholecystitis are uncommon in young people and can result in complications. We will present a case of cholecystitis caused by cholesterolosis in a young woman in order to illustrate how to diagnose and treat such a case and differentiate it from other causes. The patient was a 21-year-old married woman who complained of upper abdominal discomfort (stomachache). She reported experiencing intermittent pains for approximately two months, which were intensifying and radiating to her side and shoulder. Cholesterolosis was identified through an abdominal ultrasound. After undergoing cholecystectomy and spending two days in the hospital, the patient was discharged. In the sample sent to pathology, the final diagnosis of acute or chronic cholecystitis with villous metaplastic mucosal change & cholesterolosis was given. Cholesterolosis is a benign condition and laparoscopic cholecystectomy is an effective treatment for it. Ultrasound and cholecystectomy are typically used for diagnosis. Given the rarity of this condition in young people, physicians should consider it and apply an effective treatment procedure.

**Keywords:** Cholecystitis; Strawberry gallbladder; Cholesterol; Cholesterolosis; Ardabil; Iran**Introduction**

Cholesterolosis of the gallbladder, also known as strawberry gallbladder, is characterized by the accumulation of cholesterol esters and triglycerides in macrophages on the surface of the gallbladder wall, as well as hyperplasia of the mucous villi. The gallbladder can be affected as a polypoid or diffuse form. This condition is identified in a small number of cholecystectomy specimens [1-3]. Cholesterolosis is occasionally associated with symptoms and complications similar to those caused by gallstones; however, there is no correlation between the development of cholesterolosis and the risk factors associated with gallstone formation [4]. Acute cholecystitis is an inflammatory disease of the gallbladder that can occur alongside chronic cholecystitis, acute pancreatitis, diverticulitis, colitis, and appendicitis [5,6]. It may cause complications such as perforation of the gallbladder (biliary peritonitis), necrosis and abscesses around the gallbladder, and internal biliary fistula [7]. Acute cholecystitis is rare among young individuals. However, it is one of the most common conditions requiring emergency abdominal surgery in older adults [8]. As cholesterolosis and acute cholecystitis are uncommon in young people and can result in complications, we will present a case of cholecystitis caused by cholesterolosis in a young woman in order to illustrate how to diagnose and treat such a case and differentiate it from other causes.

**Case Presentation**

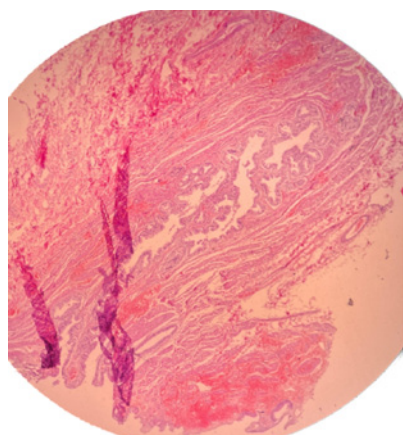
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which were intensifying and radiating to her side and shoulder. Cholesterolosis was identified through an abdominal ultrasound. After undergoing cholecystectomy and spending two days in the hospital, the patient was discharged.

In the pathology report of the specimen obtained from cholecystectomy, the macroscopic signs are as follows: RIF, consist of a previously opened greenish colored gall bladder, M:6.5 × 2.5 × 1.5 cm with velvety greenish colored internal mucosa & 2-4 mm thickness of the wall; SOS=4/1 E=10%. Also, the microscopic signs are as follows: Section show intermittent congested atrophic & villous metaplastic changed mucosa with moderately lymphoplasmacytic infiltration and focal foamy aggregation with vascular congestion through full wall thickness. Rocky-tanskey-aschoffsinuses are also noted (Figure 1).

**Discussion**

In the present study, we introduced a young woman who underwent cholecystectomy due to cholesterolosis and acute or chronic cholecystitis. This is a rare case among young people and primarily affects older individuals [8,9]. A similar case report [10] described a 20-year-old woman who complained of right hypochondrial pain and was clinically diagnosed with cholecystitis despite the absence of any risk factors. She underwent an elective laparoscopic cholecystectomy and recovered without complication after the procedure. The histopathological examination revealed cholesterolosis and chronic calcific cholecystitis [11]. Cholesterolosis is asymptomatic and benign and can occur alone or in conjunction with gallstones. Ultrasound and cholecystectomy are typically used for diagnosis [12,13]. The primary microscopic characteristic of



**Figure 1:** Cholecystitis with villous metaplastic mucosal change & cholesterolosis.

cholesterolosis is the presence of fat-filled macrophages in the villi, which causes these hyperplastic villi to swell and form small yellow nodules under the epithelium. In approximately two-thirds of cases, they cause diffuse cholesterolosis and give mucus a grainy appearance, whereas one-third of cases involve larger nodes with a polypoid appearance [3,14]. Cholesterolosis could be effectively treated with laparoscopic cholecystectomy [15].

In a study of patients who underwent cholecystectomy for chronic cholecystitis, the authors discovered that the incidence of cholesterolosis was higher among those with metabolic syndrome, dyslipoproteinemia and chronic pancreatitis. According to them, cholesterolosis is accompanied by alterations in the blood vessels of all layers of the gallbladder wall (in endothelial cells and pericytes of both large and microcirculatory vessels), as well as redistribution of blood in the circulatory system, arteries, and veins. Moreover, it is sometimes significantly associated with the spread of stasis symptoms. Changes in the dystrophic endothelium result in edema, bleeding, and, eventually, the development of sclerotic processes [16]. No correlations have been found between blood cholesterol level, gallbladder ejection fraction, gender and age distribution, and gallbladder cholesterolosis development [2,9,16]. Cholesterolosis is not linked to acute inflammation, but it is linked to metaplasia. Routine histopathological examination is very important. Surgeons must carefully interpret histopathology reports containing unusual or exceptional cholecystectomy specimen findings [17].

In a cross-sectional study of the results of histopathological examinations of the gallbladder caused by cholecystectomy for cholelithiasis, chronic cholecystitis was found to be the most prevalent pathological finding, followed by cholesterolosis of the gallbladder. In addition, there was a significant correlation between cancer presence, age over 60, and wall thickness of 0.3 cm [9].

Cholecystitis is a collection of diseases with varying etiologies, severities, clinical courses, and management strategies. Care for a patient with gallbladder disease necessitates a comprehensive understanding of acute and chronic cholecystitis syndromes as well as an awareness of potential complications [18].

During the first two to four days after cholecystitis, also known

as the edematous cholecystitis stage; congestion and edema are prominent symptoms. Necrotizing cholecystitis characterized by hemorrhage and necrosis, develops within 3-5 days. The disease reaches its purulent stage, also known as purulent cholecystitis, within 7 to 10 days. If not treated at this stage, the disease will progress to subacute cholecystitis and then chronic cholecystitis [7]. In the majority of cases, laparoscopic cholecystectomy performed within three days of diagnosis is the first line of treatment for acute cholecystitis [19].

## Conclusion

Cholesterolosis is a benign condition for which laparoscopic cholecystectomy is an effective treatment. Ultrasound and cholecystectomy are typically used for diagnosis. Given the rarity of this condition in young people, physicians should consider this condition and apply an effective treatment procedure.

## Patient Consent

Written informed consent was obtained from the patient.

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