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Case Report
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Giant Gallstone Disease Managed by Laparoscopic Cholecystectomy – A Rare Case Report from India

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Abstract

Giant gallstone disease (>5 cm) is rare and very few cases have been described in published scientific literature. Here, we present a case of a 50-year-old male who presented with history of post-prandial pain in the abdomen and dyspepsia for 1 year. Physical examination revealed mild tenderness on palpation in the right hypochondriac region. Contrast-enhanced computed tomography and ultrasound of abdomen revealed large gallstone of 5 cm size. Patient underwent laparoscopic cholecystectomy, which led to extraction of a solitary gallstone measuring 8 cm × 7 cm (about 100 grams). Postoperative course was uneventful, and patient was discharged on third postoperative day with the drain, which was removed on 5th postoperative day. The histopathological report revealed acute on chronic cholecystitis and no evidence of malignancy. This is a rare case from India wherein a patient with an unusually large gallstone underwent a successful laparoscopic cholecystectomy surgery.

Keywords: Giant Gallstone; Laparoscopic cholecystectomy; Gall bladder; Surgery

Introduction

Gallstones is a chronic recurring hepatobiliary condition caused by the poor metabolism of cholesterol, bilirubin, and bile acids. Gallstones are thought to be present in 4% of people in India and 10% of individuals in Western nations [1]. Over 80% of gallstones are asymptomatic, and 1% to 2% of them become symptomatic annually with rare instances of complications. In those who have no biliary symptoms, gallstones are commonly unintentionally found during ultrasonography, computed tomography scans, abdominal radiography, or laparotomy. About 3% of asymptomatic people develop symptoms each year. Nearly two-thirds of people with asymptomatic gallstones continue to be symptom-free after 20 years [2].

Gallstones that measure more than 5 cm in diameter are referred to as "giant gallstones." Giant gallstones are uncommon and just a few cases that have been documented in the literature [3]. While certain authors favor an open cholecystectomy for large gallstones [4], others support a laparoscopic procedure [5]. Literature search revealed a lack of published data on giant gallstone disease from Indian hospitals. Present case report gives details of a giant gallstone case successfully managed by laparoscopic cholecystectomy at a tertiary care Indian hospital.

Case Presentation

A 50-year-old male presented to our surgical outpatient department with history of post-prandial abdominal pain and dyspepsia for 1 year. His medical comorbidities included well controlled essential hypertension and Gilberts syndrome. Ten days prior to presentation, he had been to another outpatient clinic with complains of mild pain and nausea. Latest liver Function Tests (LFTs) were within normal range, including the Complete Blood Count (CBC) and leucocyte count. This patient weighed 90 kg and had a height of 180 cm. His body Mass Index (BMI) was calculated to be 28 kg/m^2, placing him in “overweight” category as per World Health Organization (WHO) BMI classification for adults. The key physical examination finding was mild tenderness on palpation in the right hypochondriac region.

An abdominal ultrasound revealed large gallstone of 5 cm size showing diffuse posterior wall shadowing (Figure 1). The gallbladder gave a “wall echo-shadow” sign. No pericholecystic fluid collection was noted, and neither was any intra or extra hepatic biliary duct dilatation found. The pancreas was normal in size and texture.

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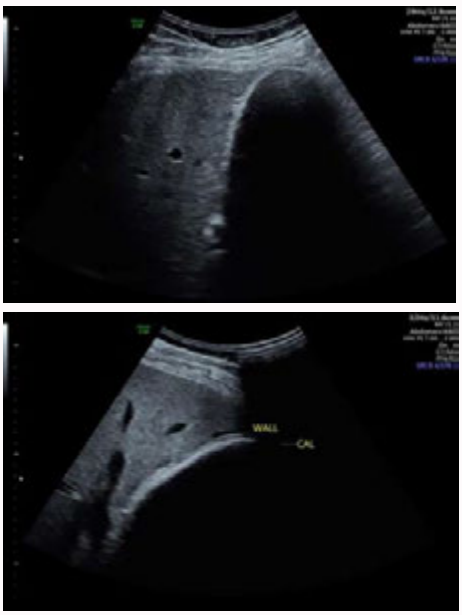

Figure 1: Gallstone noted on ultrasonography.

Figure 2: Gall bladder of patient visualized *via* laparoscope.

Contrast-Enhanced Computed Tomography (CECT) for abdomen revealed a 5 cm gallstone occupying the whole body of the gallbladder, with thickened organ wall. No pericholecystic fat stranding or fluid was noted. Patient's Carcinoembryonic Antigen (CEA) and CA19-9 were noted to be within the normal limits. The patient was further counselled about laparoscopic cholecystectomy as the management option and was then planned.

After the necessary preoperative work, patient was posted for surgery. He was placed in supine position, and pneumoperitoneum was created using a Veress needle at supraumbilical site. A 10-mm camera port was placed at supraumbilical area. Ports for instrumentation were placed at subxiphoid (10-mm), right hypochondrium (5-mm), and right lumbar (5-mm). An extra port was placed for duodenal retraction at left hypochondrium (5-mm). Gallbladder was visualized and fundus was retracted (Figure 2). Adhesions between omentum and gallbladder (body and fundus) were noted, which were released with the help of electrocautery. The gallbladder was nearly filled with the gallstone, making the wall tense and difficult to grasp using non-traumatic forceps. Critical view of safety was obtained. Cystic duct and cystic artery were clipped and cut. Gallbladder was dissected from cystic plate and extracted out in a bag. The gallbladder specimen measured 12 cm × 6.6 cm × 5.3 cm (Figure 3) and on the cut section, a solitary gallstone measuring 8 cm × 7 cm (about 100 grams) was recovered (Figure 4). Supraumbilical

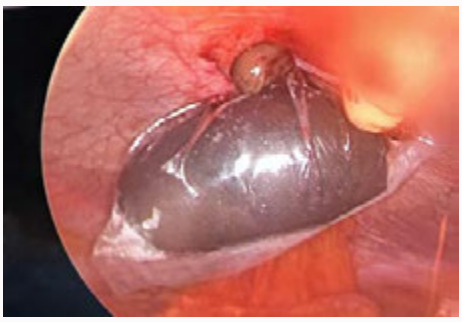

Figure 3: Extraction of specimen from the supraumbilical port.

Figure 4: Size of the specimen-gallbladder measuring 10 cm × 4 cm; gallstone measuring 8 cm × 7 cm and weighing 100 gm.

port site incision was increased for gallbladder extraction along with the stone. Incision was closed with a loop PDS suture. Hemostasis was achieved and pneumoperitoneum deflated.

Postoperative course was uneventful. The patient was discharged on third postoperative day with the drain, which was removed on 5th postoperative day. The histopathological report revealed features of acute on chronic cholecystitis and no evidence of malignancy.

Discussion

Based on demographic data published, women are more likely to develop gallstones than males, particularly in the reproductive years. This is possibly because estrogen levels rise during this time, which may lead to an increase in bile cholesterol and a decrease in gallbladder activity [6]. In our case, the presentation of male patient is atypical, which adds to the novelty factor of the case. When it comes to age, the likelihood of gallstones rises with age, being 4 to 10 times more common after the age of 40 years [7]. 60% to 80% of gallstones are asymptomatic [8], and are usually detected during regular abdominal ultrasonography. Depending on where they are, symptomatic gallstones may manifest as biliary discomfort, cholecystitis, or biliary blockage. The most common approach for identifying cholelithiasis and cholecystitis is USG (90-95% specificity and sensitivity), which may also detect and correctly measure stones as tiny as 2 mm and reveal thickening of the gallbladder wall [9]. For our patient, abdominal ultrasound revealed the size of the enormous gallstone, with measures that were quite accurate to those discovered following surgery. Such a thorough evaluation of a large gallstone before surgery informs the surgeon of any potential complications and the potential for conversion to open cholecystectomy [5].

When compared to individuals without gallstones, those with

gallstones larger than 3 cm have been noted to have an extremely high relative risk for developing gallbladder cancer [10]. Additionally, although the exact frequency of this development is unknown, gallstones larger than 3 cm pose a risk of developing biliary enteric fistula and gallstone ileus, which may necessitate surgical intervention for intestinal blockage [11]. The optimum first strategy is laparoscopic cholecystectomy conducted by a skilled surgeon, unless technical challenges and an inability to expose the anatomy justifies switching to open cholecystectomy [12]. A Cochrane review of 38 randomized controlled studies found that laparoscopic cholecystectomy was more efficient than open cholecystectomy in terms of complications, hospital stay, and recovery time [13]. Without the need for conversion, there were no intra- or post-operative problems, and recovery was smooth when we employed the laparoscopic method on our patient.

A higher likelihood of converting from laparoscopic to open cholecystectomy is linked to giant gallstones as well. Gallbladder wall thickening and inflammation would be more severe in the case of giant gallstones. Additionally, the large gallstone would make it impossible for the laparoscopic tools to hold the gallbladder and reveal the crucial Calot's triangle anatomy [14]. Besides the surgeon's expertise, other factors like inflammatory nature of gallbladder, emergency surgery, comorbidities, advancing age, and male patients are all strong predictors of conversion to open cholecystectomy [15]. Although open cholecystectomy is a safe alternative if the Calot's triangle is difficult to expose due to adhesion or difficulty to grip the gallbladder, laparoscopic cholecystectomy may still be tried [16,17]. This is a rare case from India wherein a patient with an unusually large gallstone underwent a successful laparoscopic cholecystectomy surgery.

Conclusion

Giant gallstone of the size >5 cm in diameter is rare. Clinical evidence supports laparoscopic cholecystectomy as the preferred therapeutic method in such cases. If the anatomy cannot be exposed or if there are any technical issues during the operation, the option of converting to open surgery should be taken into consideration.

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