

A Rare Case of Multiple Giant Gallbladder Calculi Successfully Treated with Laparoscopic Cholecystectomy

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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 26-year-old female who presented with a history of left hypochondriac pain, which increased postprandially. Physical examination revealed mild tenderness on palpation in the left hypochondriac region. Ultrasound of the abdomen revealed multiple large gallstones, the largest being 1 cm in size. The patient underwent laparoscopic cholecystectomy, leading to the extraction of multiple gallstones, two measuring 1.5 × 1 cm and six measuring 0.5 × 1 cm. The postoperative course was uneventful, and the patient was discharged on the third postoperative day with a drain, which was removed on the fifth postoperative day. The histopathological report revealed acute cholecystitis with no evidence of malignancy. This is a rare case from India wherein a patient with multiple large gallstones underwent a successful laparoscopic cholecystectomy.*

Keywords: Multiple Giant Gallstones; Laparoscopic Cholecystectomy; Gallbladder; Surgery

1. Introduction

Gallstones are a chronic, recurring hepatobiliary condition caused by poor metabolism of cholesterol, bilirubin, and bile acids. Gallstones are thought to be present in 6% of people in India and 10% of individuals in Western nations [1]. Over 80% of gallstones are asymptomatic, and 1% to 2% become symptomatic annually, with rare instances of complications. In asymptomatic individuals, gallstones are commonly detected incidentally during ultrasonography, computed tomography scans, abdominal radiography, or laparotomy. About 3% of asymptomatic individuals develop symptoms each year, and nearly two-thirds of them remain symptom-free after 20 years [2].

Gallstones larger than 5 cm in diameter are referred to as "giant gallstones." These are uncommon, and only a few cases have been documented in the literature. Some authors favor open cholecystectomy for large gallstones, while others support a laparoscopic approach. A literature search revealed a lack of published data on giant gallstone disease from Indian hospitals. This case report details a multiple giant gallstone case successfully managed by laparoscopic cholecystectomy at a tertiary care Indian hospital.

2. Case Presentation

A 26-year-old female presented to our surgical outpatient department with a history of left hypochondriac pain, which increased postprandially for one month. Liver Function Tests (LFTs) were within the normal range, including Complete Blood Count (CBC) and leucocyte count. The key physical examination finding was mild tenderness on palpation in the left hypochondriac region.

Abdominal ultrasound revealed multiple large gallstones, the largest being 1 cm in size, with diffuse posterior wall

shadowing. The common bile duct was normal. The gallbladder showed a "wall echo - shadow" sign. No pericholecystic fluid collection or intra- or extrahepatic biliary duct dilatation was noted. The pancreas was normal in size and texture. The patient was counseled about laparoscopic cholecystectomy as the management option and was scheduled for surgery.

After the necessary preoperative workup, she was placed in the supine position, and pneumoperitoneum was created using a Veress needle at the supraumbilical site. A 10-mm camera port was placed at the supraumbilical area, and additional ports were placed at the subxiphoid (10-mm), right hypochondrium (5-mm), and right lumbar (5-mm). The gallbladder was visualized, and the fundus was retracted. Adhesions between the omentum and gallbladder (body and fundus) were noted and released using electrocautery. The gallbladder was filled with multiple gallstones.

A critical view of safety was obtained. The cystic duct and cystic artery were clipped and cut. The gallbladder was dissected from the cystic plate and extracted in a retrieval bag. The specimen measured 6 × 3 × 3.1 cm, and on the cut section, multiple gallstones were found, with two measuring 1.5 × 1 cm and six measuring 0.5 × 1 cm.

The supraumbilical port site incision was extended for gallbladder extraction along with the stones. The incision was closed with Vicryl 1-0, and the skin was closed with Ethilon 2-0. Hemostasis was achieved, and pneumoperitoneum was deflated.

The postoperative course was uneventful. The patient was discharged on the third postoperative day with a drain, which was removed on the fifth postoperative day. The histopathological report revealed acute cholecystitis with no evidence of malignancy.

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3. Discussion

Demographic data indicate that women are more likely to develop gallstones than men, particularly in the reproductive age group. This is possibly due to increased estrogen levels, which can raise bile cholesterol levels and decrease gallbladder motility. The likelihood of gallstones rises with age, becoming 4 to 10 times more common after 40 years [7].

Between 60% and 80% of gallstones are asymptomatic [8] and are typically detected during routine abdominal ultrasonography. Symptomatic gallstones may present as biliary discomfort, cholecystitis, or biliary obstruction. The most common diagnostic tool for cholelithiasis and cholecystitis is ultrasonography (90 - 95% sensitivity and specificity), which can detect stones as small as 2 mm and reveal gallbladder wall thickening [9].

For our patient, abdominal ultrasound accurately identified the large gallstones before surgery, informing the surgeon of potential complications and the possibility of conversion to open cholecystectomy. Gallstones larger than 3 cm pose an increased risk for gallbladder cancer [10] and may lead to biliary - enteric fistula or gallstone ileus, which could necessitate surgical intervention for intestinal obstruction [11].

Laparoscopic cholecystectomy, performed by a skilled surgeon, is the preferred initial approach unless technical difficulties warrant conversion to open cholecystectomy [12]. A Cochrane review of 38 randomized controlled studies found that laparoscopic cholecystectomy was superior to open cholecystectomy in terms of complications, hospital stay, and recovery time [13].

Large gallstones are associated with a higher risk of conversion from laparoscopic to open cholecystectomy. Severe gallbladder wall thickening and inflammation can complicate the laparoscopic approach, making it difficult to grasp the gallbladder and expose Calot's triangle anatomy [14]. Factors influencing conversion to open surgery include the surgeon's expertise, inflammation severity, emergency status, comorbidities, advancing age, and male sex [15]. However, laparoscopic cholecystectomy remains a viable option before resorting to open cholecystectomy [16, 17]. This case represents a rare instance of successful laparoscopic cholecystectomy for multiple large gallstones in India.

4. Conclusion

Multiple giant gallstones are rare. Clinical evidence supports laparoscopic cholecystectomy as the preferred therapeutic approach. If anatomical exposure is inadequate or technical challenges arise during the procedure, conversion to open surgery should be considered.

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