Case report

A GIANT GALL BLADDER IN LAPAROSCOPIC CHOLECYSTECTOMY FOR ACUTE CALCULAR CHOLICYSTITIS: A Case Report

Abstract:

Cholecystolithiasis,the most common biliary disorder, is more common in women. The most common complications of the gallbladder stone are biliary colic, cholecystitis, mucocele, gallbladder empyema, gangrene, perforation, and peritonitis. Laparoscopic or open cholecystectomy is the only option for the treatment of these diseases. The gallbladder may become enlarged and distended during cystic duct or gallbladder neck obstruction due to gallstones. However, a grossly distended gallbladder (> 14 cm in length) without any pathology is rare.

Here, we are introducing a female patient aged 42 years, who is previously healthy, came to the casualtywith a picture of acute calcular cholecystitis,which was confirmed by abdominal ultrasound. Laparoscopic cholecystectomy was done after two days. During the operation, a hugely dilated (giant) gall bladder was found (about 18cm after evacuation of bile and removal of the multiple stones). The post-operative period was unremarkable. The patient was discharged home

after 4 days. On follow-upin the outpatient clinic, the patient had no complaints.

Keywords:gall bladder, giant gall bladder,stones, laparoscopy, cholecystectomy.

Introduction

The most common diseases of the gallbladder are asymptomatic gallstones, biliary colic, cholecystitis, mucocele, gallbladder empyema, gangrene, perforation, peritonitis, polyps, and malignancy (1).Surgical intervention in the form of laparoscopic or open cholecystectomyis the only option for the treatment of these diseases (2). Acute calcular cholecystitis is one of the emergency presentations which, if associated with gallstones impacted inthe neck, would require emergency surgery (3). This impaction can also result in an over-distended gallbladder, causing mucocele or empyema (4). The length of a normal gallbladder in adults is 7.5 to 10 cm (5). A giant gallbladder is usually defined as a gallbladder measuring> 14 cm in length (6). A giant gallbladder with no marked obstructive factors is very rare (7). Indeed, in the literature, there areno more than ninecases that have been reported (8). The pathogenesis of the development of the giant gallbladder remains unknown. Usually, an increase in gallbladder volume can be due to

physiological and pathological causes. The gallbladder itself can enlarge to a significant size without any functional abnormality or obstruction of the biliary tract. This physiological increase in gallbladder size usually does not require any treatment. Mechanical obstruction of the cystic duct and common bile duct due to stone, tumour, dysmorphia, adhesion, ascaris, or external pressure; Bacterial infection of the gallbladder; Gallbladder functional disorderand Diabetes Mellitus are the pathological causes of an overdistended gallbladder.Surgical trauma and pancreatic fluid reflux are other causes. Cholelithiasis and cholecystitis are the most common causes of gallbladder distension (9).

Case Presentation

A 42-year-old female patient, who is previously healthy,presented with acute epigastric and right-sided abdominal pain lasting for 2 days. At first, the abdominal pain was severe and paroxysmal, then became continuous and associated with nausea, vomiting.On presentation to our hospital,she was vitally stable (pulse 67 b/m, blood pressure 110/75, respiratory rate 24and temperature 36.9). Abdominal examination revealed marked tenderness in the right upper quadrant with Positive Murphy's sign. The routine blood test (WBCs 12.3, Hb 12.6 and platelets 387), coagulation profile, blood biochemistry, and human chorionic gonadotropin levels were within normal limits.

Abdominal ultrasoundshowed acute on top of calcularcholecystitis (Figure 1).

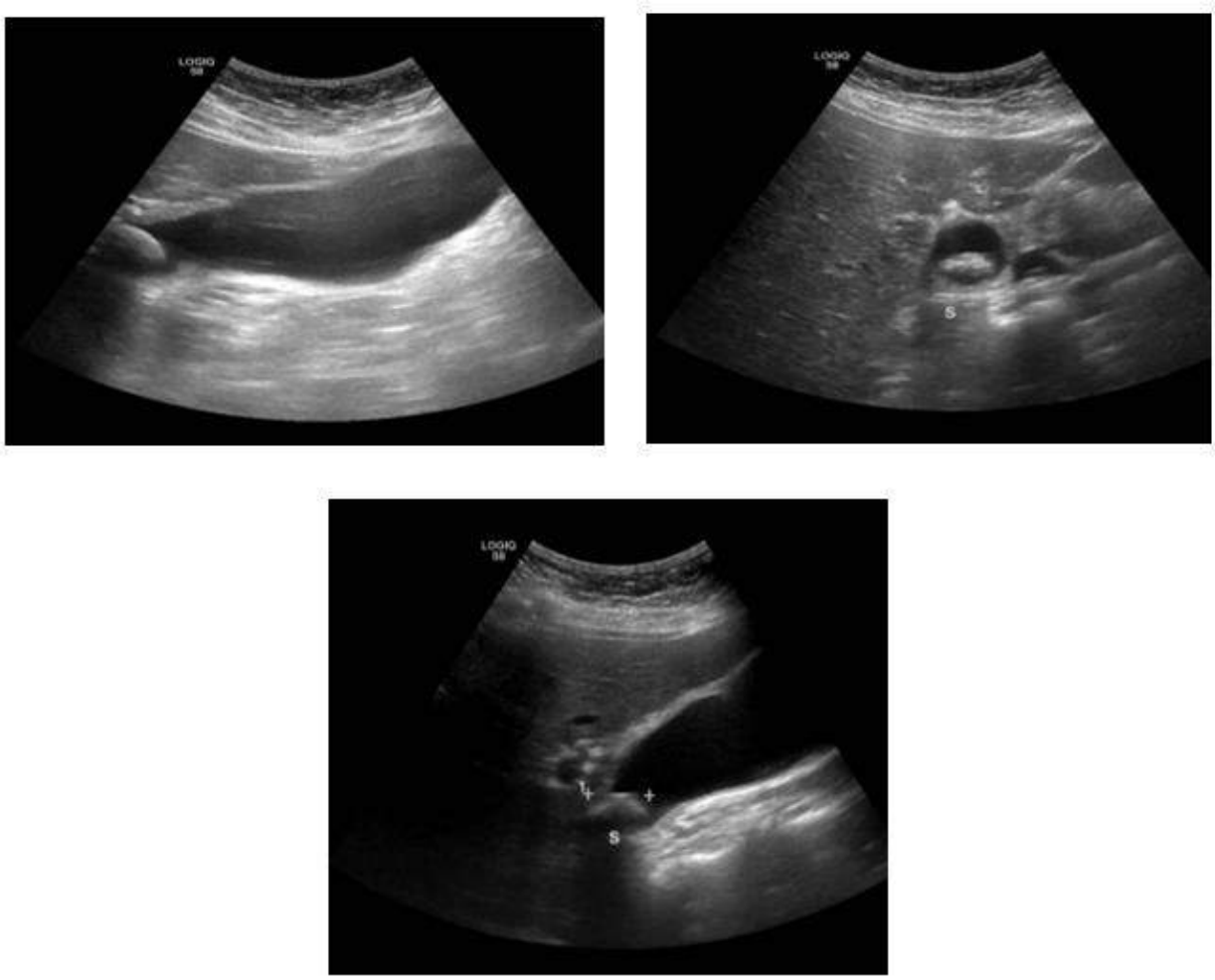

Figure 1: Abdominal ultrasound showed a hugely distended gall bladder.

The patient was admitted to the ward,IVFs, pain killers, and antibiotics were started. After two days of admission, the patient underwent laparoscopic cholecystectomy under general anaesthesia.During the operation, the gallbladder was found to be grossly enlarged, reaching

the right iliac fossa below the level of the umbilicus (Figure 2). The gallbladder wall was edematous, thickened, and adhered to the greater omentum. Since the gallbladder was too large to be operated on smoothly, it was decompressed, and 100 mL of mucus was aspirated (Figure 3). After decompression,the adhesions were released, and the Calot triangle was dissected. Even the lymph node of the LUND was huge (Figure 4). The critical view of safety was achieved (Figure 5). The cystic artery and duct were carefully identified. The cystic artery was clipped by 2 clips proximally and one distally, and then divided in between. The cystic duct was doubly clipped with clips about 0.5 cm from the common bile duct, and distally then dividedin between (Figure 6). The gallbladder was separated from the liver bed by a combination of anterograde and retrograde dissections using diathermy. The operation took about 1 hour with minimal intraoperative blood loss.A large-sized drain was fixed at the gall bladder fossa.

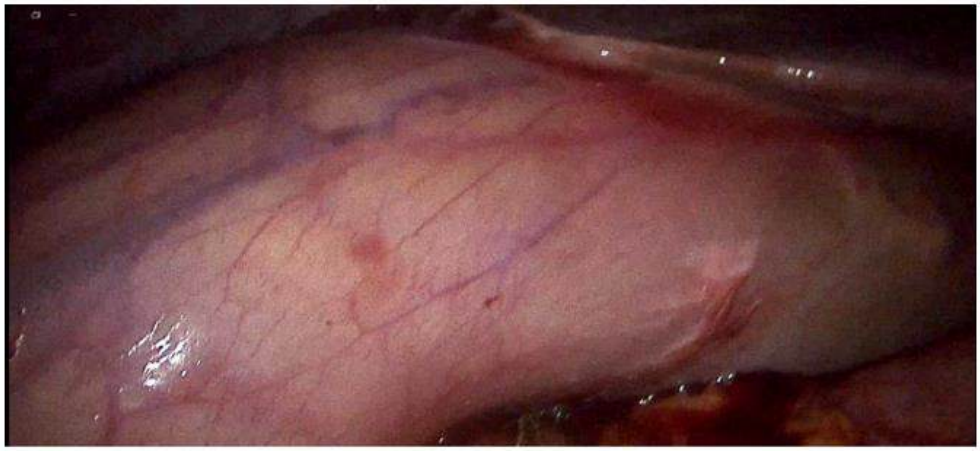

Figure 2: Huge gall bladder as seen from the edge of the liver.

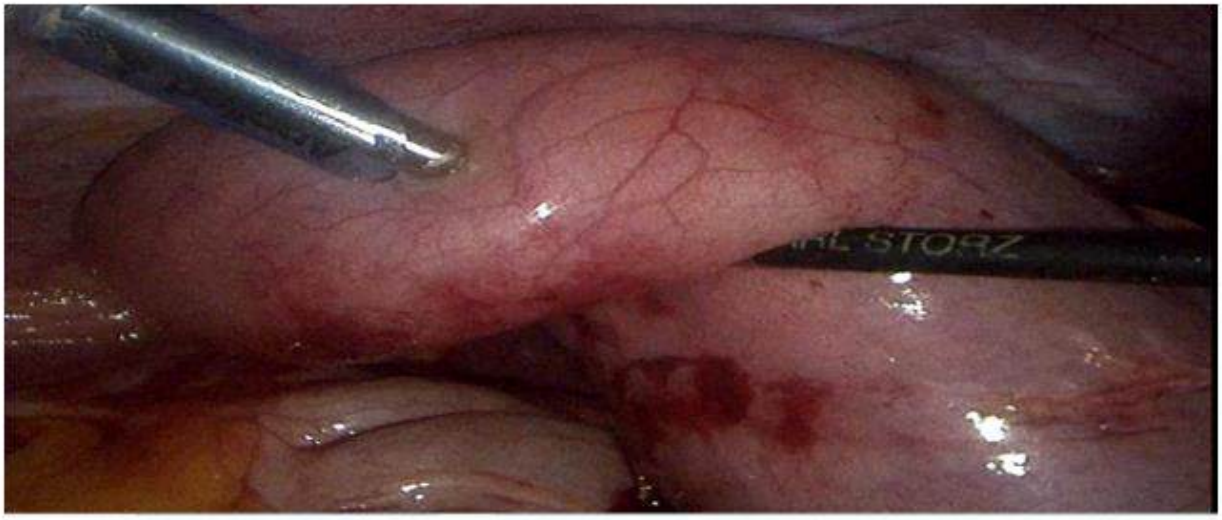

Figure 3: Aspiration of about 100 ml of mucus from the gall bladder.

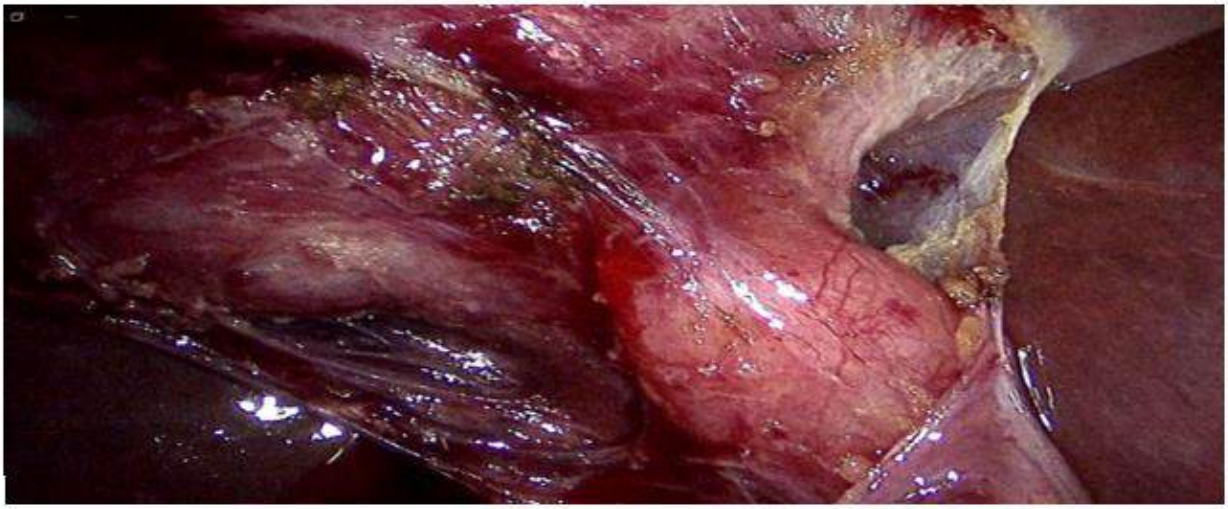

Figure 4: Huge lymph node of the LUND.

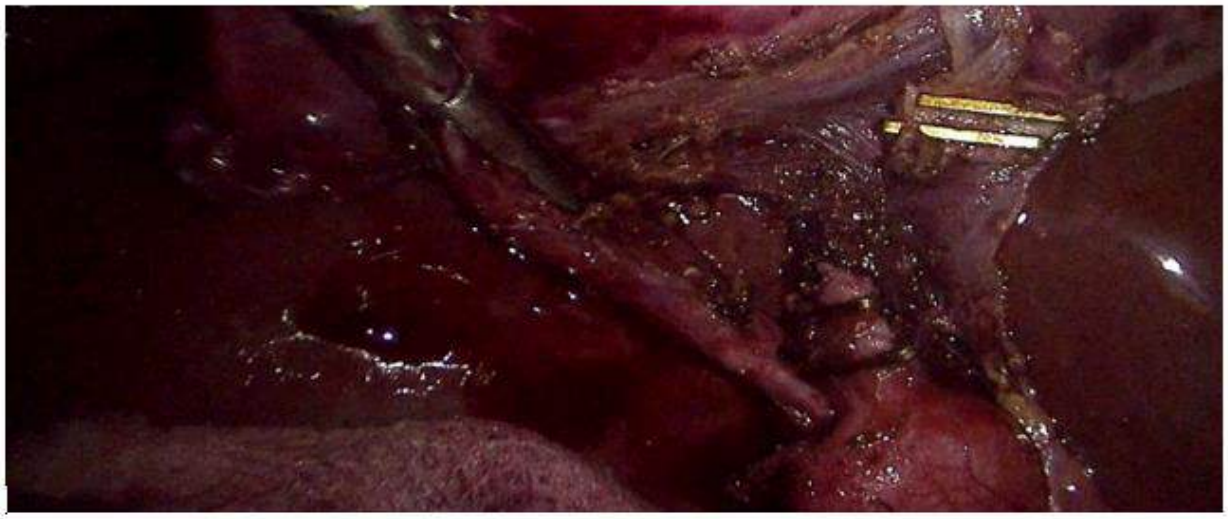

Figure 5: The critical view of safety was achieved.

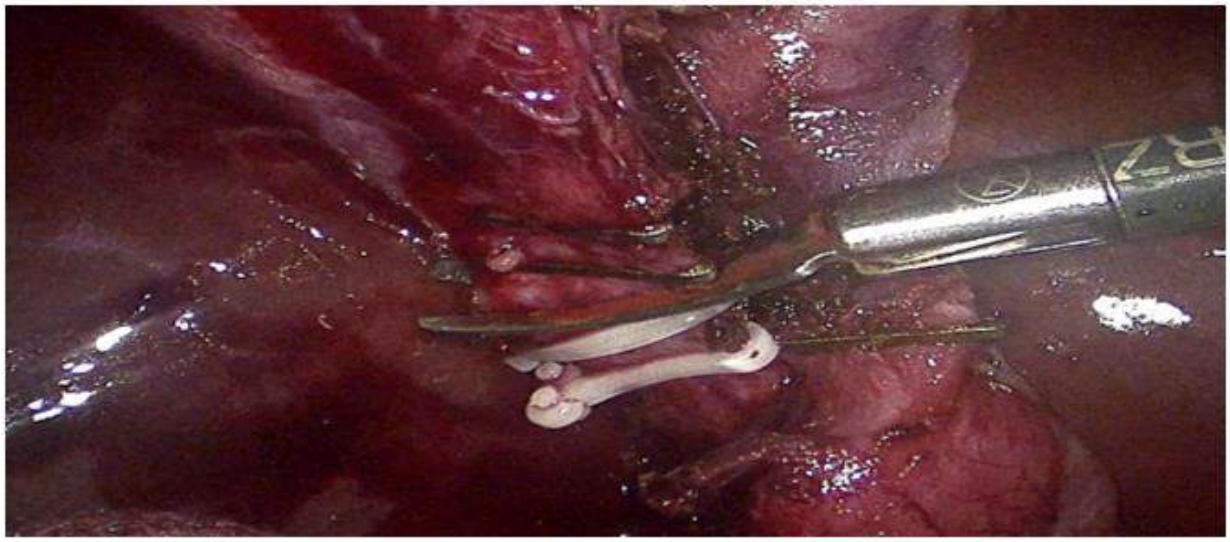

Figure 6: clipping of both the cystic artery and duct.

The postoperative recovery was uneventful, the drain was removed after 2 days, and the patient was discharged home after a hospital stay of 4 days. On postoperative pathological examination. The gallbladder wall was about 0.5 cm wall thickness; 4.7 cm wide and 17 cm long,

received in a jar full of formalin. Microscopic examination revealed acute on top of chronic calcular cholecystitis with adenomyomatosis.

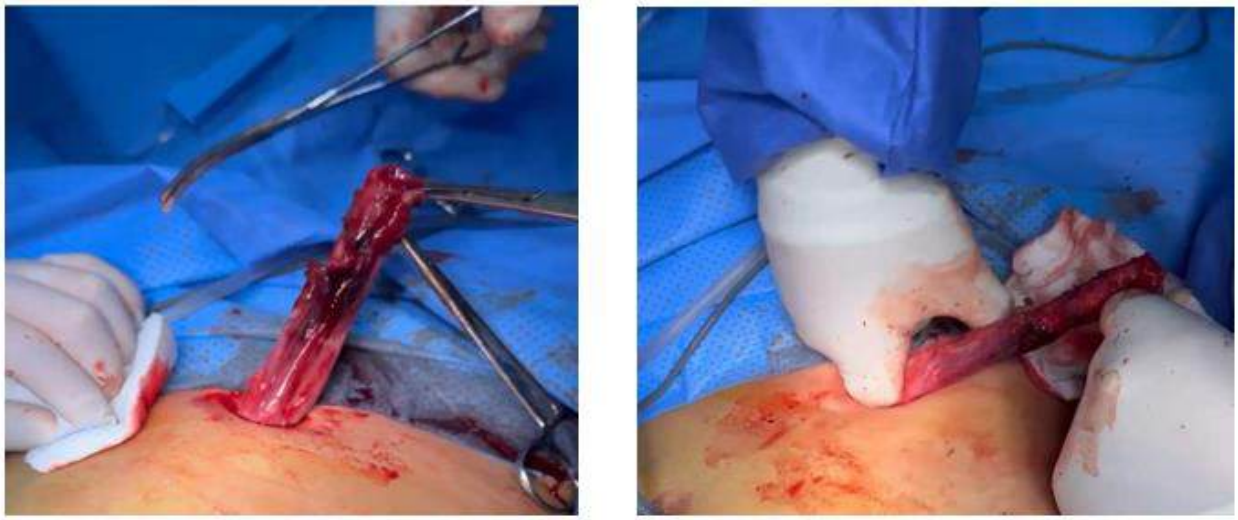

Figure 7: During the gallbladder removal through the epigastric port.

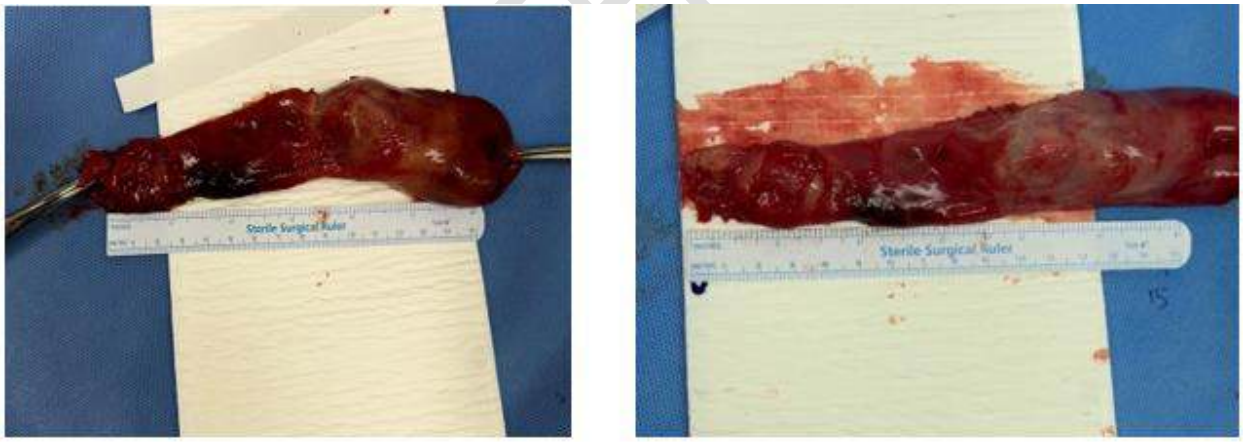

Figure 8: After the gallbladder extraction with multiple different-sized stones.

Discussion

The critical knowledge of anatomy, its variations and clinical experience is necessary for a safe and uneventful surgery (3).The gallbladder is situated on the undersurface of segments IV and V of the liver and has a peritoneal attachment to the liver (10). The gallbladder is a pear-shapedorgan with an average length of 4.5 to11.6 cm and a capacity of 30 to 50ml (11).Our case size was more than 18 cm after evacuation of the bile and the multiple stones.M Ullah et al. (12) revealed in their case report a case of a giant gall bladder of 27 cm.Also, Gao Yi et al. (13) showed a case of gallbladder that was found to be grossly enlarged (20 cm × 7.0 cm). The huge-sized or overdistended gallbladders are attributed to congenital anomalies, acquired or obstructive causes, as

per the literature review(14). In our patient, there was no cystic duct obstruction or any other underlying disease. Postoperative pathological examination showed acute on top of chronic calculous cholecystitis, similar to routine cases of cholelithiasis. Acute calcular cholecystitis is an inflammation of the gallbladder that presents as a combination of right upper quadrant pain that may radiate to the back or right shoulder, nausea, vomiting and fever (15). In cases where the gallbladder stone is impacted at the neck of the gallbladder, the cystic duct is blocked,resulting in the mucus accumulation within the gallbladder. This leads to an overdistended gallbladder (16). Prolonged obstruction of the cystic duct leads to continuous mucin secretion that ultimately overdistentsthe gallbladder causing gallbladder wall edema, inflammation, gangrene or perforation. In patients with diabetes mellitus, especially those who have poor control, there is autonomic neuropathy and cholecystoparesis that causes cholecystomegaly (11).Mucocele and empyema of the gallbladderare emergency pathologies that require early intervention in the form of laparoscopic cholecystectomy unless there is some definitive contraindication. Minimal scar, less pain and early mobilization are the advantages of using the laparoscopic approach (14).Cholecystectomy, the treatment of choice for cholecystitis and gallstones, was first described by Langebuch in 1882. Laparoscopic cholecystectomy was first described by French

surgeon Philippe Mouret in 1987. After more than 30 years of development, Laparoscopic cholecystectomy has become the gold standard for the treatment of symptomatic gallbladder disease. Indications for cholecystectomyinclude recurrent biliary colic and the development of gallstone-related complications. Laparoscopic cholecystectomy is recommended for asymptomatic gallstones under the following conditions: Many stones and stone diameters 2 to 3 cm; Gallbladder wall calcification or porcelain gallbladder; Gallbladder polyps (diameter ≥ 1 cm); Gallbladder wall thick ness > 3 mm (accompanied by chronic cholecystitis) (13). As already shown, giant gallbladders are rare. This patient had a huge gall bladder complicated by multiple gallstones. Laparoscopic cholecystectomy was successfully performed in this patient after decompressing the gallbladder. The patient recovered well, and the abdominal pain resolved following the operation.

Conclusion

Huge gallbladders, although difficult to handle, can safely be removed via laparoscopic cholecystectomy with good outcomes. A sound knowledge of gallbladder anatomy, experience of the surgeon and his good team are the cornerstones in such surgeries.

Ethical Approval

Following international and university standards, written ethical approval has been obtained and preserved by the authors.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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