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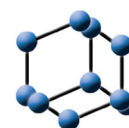
Laparoscopic Removal of a Giant Gallstone in UAE: A Case Report

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CASE REPORT

Laparoscopic Removal of a Giant Gallstone in UAE: A Case Report

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Abstract:

Background:

Diseases of the gallbladder (GB) are a common occurrence, and gallstones are the most common biliary pathology. Lately, the incidence of gallstone disease has been on the rise in the United Arab Emirates (UAE).

Case Report:

We present a case report of a 52 years old female who presented with severe upper abdominal pain. The clinical examination and ultrasound imaging were consistent with the calculus of the gallbladder with acute cholecystitis without obstruction. Laparoscopic cholecystectomy (LC) was performed to remove a gallstone of 6.8 cm in size. This was performed uneventfully.

Discussion:

The prevalence of gallstones ranges from 0.1% to 50.5% worldwide. Gallstones more than 5 cm in diameter are not seen often. LC is quite challenging in such cases. This case report is being presented due to the limited availability of literature on the Laparoscopic removal of giant gallstones in the UAE.

Conclusion:

Our aim here is to convey that LC can be considered the first choice vis-a-vis open method even in giant gallstone cases in the presence of trained personnel and equipped settings. The epigastric port can be extended for extracting the gallbladder specimen. Open cholecystectomy is a safe method if clear delineation of anatomy is not possible.

Keywords: Giant gallstone, Cholecystectomy, Cholelithiasis, Laparoscopic, Gallbladder, Epigastric port.

Article History

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1. INTRODUCTION

Diseases of the gallbladder are a common occurrence in our society [1]. Although the majority of stones in the gallbladder remain “silent” and do not require medical or surgical treatment, gallstone disease is still one of the most common digestive diseases requiring hospital admission and financial resources [2]. The prevalence of gallstones ranges from 0.1% to 50.5% worldwide [3]. The mortality rate for gallstone disease is relatively low at 0.6% [1]. The incidence of gallstones is more common in females than males and with increasing age. At ages around 50 to 65 years, approximately 20% of women and 5% of men have gallstones [4]. The comm-

on risk factors identified are obesity, type 2 diabetes, increased insulin levels, and lipid and cholesterol abnormality, which are often components of metabolic syndrome [2]. In order to prevent complications (such as acute cholecystitis, acute biliary pancreatitis, and cholangitis), or recurrent symptoms, it is advisable to treat patients presenting with typical colicky pain (“symptomatic”) [2].

According to a report by Keus *et al.*, in their study of laparoscopic *versus* open cholecystectomy and laparoscopic *versus* small-incision cholecystectomy in patients with symptomatic cholelithiasis, they opined that laparoscopic cholecystectomy and small incision cholecystectomy are safe with a similar mortality rate ranging from 0.1% to 0.7%. Both these procedures are cost-effective compared with open cholecystectomy. Hospital stay and convalescence are shorter,

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as is the total cost lower for laparoscopic cholecystectomy compared with open cholecystectomy [5]. The size of a gallstone is an important factor determining the ease of surgery, as giant gallstones have a higher risk of complications and technical difficulties during laparoscopic cholecystectomy. Patients with gallstones larger than 3 cm are predisposed to a higher risk for gallbladder cancer; however, gallstones larger than 5 cm are rare. Very few cases have been reported in the literature. Few authors advocate open cholecystectomy for large stones, while others support the laparoscopic approach [6].

We present below the case of a 52-year-old Middle Eastern female patient with a giant gallstone that was managed *via* laparoscopic approach uneventfully.

2. CASE REPORT PRESENTATION

This was a 52-year-old Female from the Middle East, a non-smoker patient who presented to the Emergency Room (ER) with severe upper abdominal pain, mainly in the right hypochondriac region, with pain radiating to the back (right scapula). She also had a fever and nausea.

In past medical history, it was noted that 10 days back, she had been in an outpatient clinic with mild pain and nausea. Liver Function Tests (LFTs) were within normal range, including the Complete Blood Count (CBC) and leucocyte count. She had no history of any hemolytic disease, dyslipidemia or diabetes. The Ultrasonogram (USG) at that time identified a distended GB measuring 85.5 x 36 mm. A diffusely thickened edematous wall measuring 5 mm and a stone measuring 2.2 cm with posterior acoustic shadow was seen. She was started on the antibiotic Co-Amoxiclav one gram twice a day, Metronidazole 500 mg twice daily, Acetaminophen one gram every 6 hours and Ibuprofen 400 mg twice daily.

Now, during her presentation, her pain was severe (8 to 9/10 on the Numerical Rating Score). This patient weighed 92 kg with a height of 164 cm. Her body Mass Index (BMI) was 34.2, placing her in Obese Class I as per World Health Organization (WHO) recommended BMI table for adults.

The physical exam was positive for mild tenderness on palpation in the right hypochondriac region. A repeat USG done on her present presentation to ER showed the GB size relatively increased, measuring 9.72 x 3.74 cm. A large gallstone appeared impacted within the GB neck, with dense echogenic sludge filling the lumen and no pericholecystic fluid collection. No intra or extra hepatic biliary duct dilatation was seen. The Pancreas was normal in size and texture.

A diagnosis of the calculus of the gallbladder with acute cholecystitis without obstruction was made.

Cholecystectomy was advised, LC was preferred as the first choice, and the consent of the patient was obtained. In the operating room, once the patient was under general anesthesia and ports placed in standard positions, a thick-walled distended GB with adhesions was noted. GB was removed by antegrade

dissection and taken out with an endobag. It was taken out in toto (GB with stones inside) by extending the epigastric port incision (Fig. 1). On dissection of the gallbladder, a giant stone measuring 6.8 cm and a second stone measuring 2 cm was identified. Her postoperative recovery was uneventful. She was discharged on the second day and followed up postoperatively.

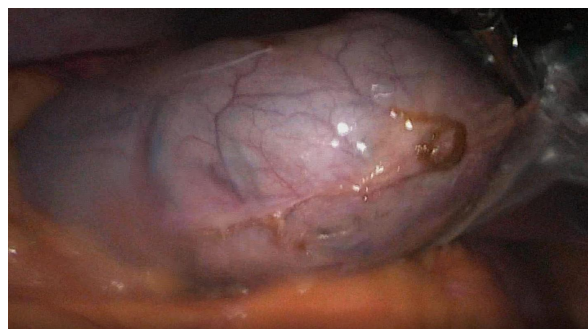


Fig. (1). Shows gallbladder containing stone being placed into the endobag.

3. DISCUSSION

Laparoscopic cholecystectomy is the gold standard treatment for gallstone disease and can be achieved in 96% of the cases; the conversion rate from laparoscopic to open cholecystectomy is about 4-5%. A gallstone with a diameter of over 5 cm is very rare, and such cases are difficult to attempt laparoscopically. Some surgeons may even consider a giant gallstone as an indication of a classical cholecystectomy. The risk of conversion is related to surgeon factors, patient factors, and possibly equipment factors [7].

Coming across patients having giant gallbladder stones is rare in this Asian region of UAE & Middle East, given the widespread prevalence of traditional food habits. The average prevalence of gallstone disease in Middle Eastern Countries was 4-12% [8]. Gallstone disease is more common in females due to increased cholesterol levels secondary to the circulating estrogen hormone. Cholesterol in the bile diminishes the movement of GB, thus aiding in the formation of gallstones [9]. The incidence of gallstones increases with age. Our patient was also an elderly 52-year-old female.

The distended gallbladder wall was thickened with adhesions. When the surgeon tried to grasp the GB, it was not possible. He tried to aspirate the GB with a needle so that it may become easy to grasp but was unable to enter due to the stone occupying the entire GB. After several attempts, when the GB could be grasped, antegrade dissection was carried out. Proper anatomical exposure of Calot's triangle for a safe dissection and the ability to hold GB with laparoscopic tools is quite challenging with large gallstones [10]. However, in this case, the anatomy could be delineated with slow dissection, so the laparoscopic route was continued.

On dissection of the specimen, along with the 6.8 cm stone, another small stone was seen. (Fig. 2 and 3).



Fig. (2). Shows small stone along with large stone.

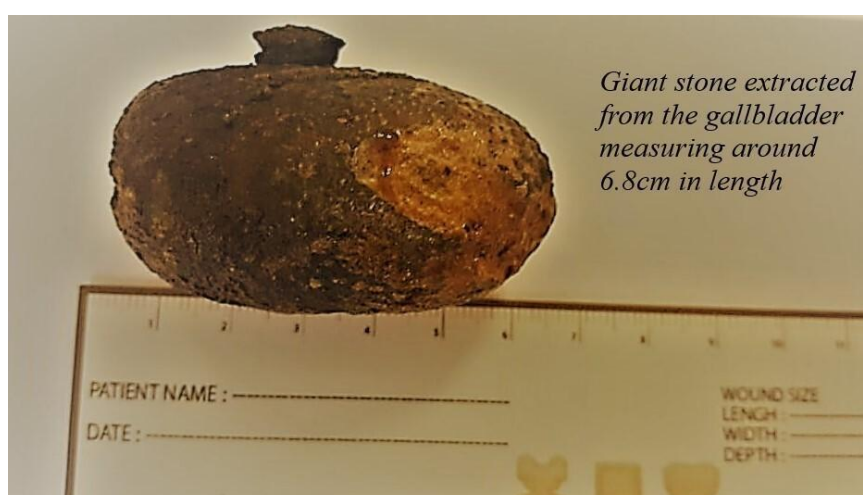


Fig. (3). Shows a closer look of a giant stone extracted along with small stone placed on top.

In a research study done on the association between gallstones and their correlation with carcinoma, the major constituents of gallstones from the UAE region were found to be cholesterol and bilirubin [11]. In retrospect, Magnetic Resonance Cholangiopancreatography (MRCP) imaging could have been performed to give us more information regarding the gallbladder stone. Also, the pathology of the specimen stone might have given us more information on the possible etiology, which was not done in our case.

An ultrasound of the anterior abdominal wall was performed after 2 months when she complained of pain in the epigastric port site from where the specimen had been extracted. A small residual seroma was found corresponding to surgical stitch material, but no abscess was seen, and it was resolved uneventfully following needle aspiration. Now more than 6 months into her follow-up, she remains symptom-free following her LC surgery.

CONCLUSION

Gallstones of large sizes are being operated in many centers in the UAE. In the presence of trained personnel and equipped settings, the laparoscopic procedure allows the removal of GB without any major incision, thus enhancing recovery and early weaning of the patient back to his/her daily activities. Extending the epigastric port can be useful for extracting gallstone specimens. LC can be considered the first choice vis-a-vis open method, even in giant gallstone cases. Open cholecystectomy can be considered in case of technical issues, anatomical variations, inability to delineate anatomy laparoscopically, or encountering unexpected bleeding. Screening ultrasound for at-risk populations in the UAE can be utilized as an effective tool in preventing the formation of large gallstones.

LIST OF ABBREVIATIONS

- BMI** = Body Mass Index.
CBC = Complete Blood Count.

ER = Emergency Room.
GB = Gallbladder.
LC = Laparoscopic Cholecystectomy.
LFT = Liver Function Test.
MRCP = Magnetic Resonance Cholangiopancreatography.
USG = Ultrasonogram.
WHO = World Health Organization.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

HUMAN AND ANIMAL RIGHTS

Not applicable.

CONSENT FOR PUBLICATION

Informed consent was obtained from the patient for the publication of this case report.

STANDARDS OF REPORTING

CARE guidelines were followed.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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Declared none.

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