https://doi.org/10.15218/zjms.2025.041

Recording a large number of gall stones from a cholecystectomy specimen, in Kurdistan region-Iraq / a case report study

Received: 07/01/2024 Accepted: 14/04/2024

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Abstract

Cholelithiasis is one of the most common diseases in the Western world and is increasing in the incidence in the Eastern world too. Laparoscopic cholecystectomy is gold standard treatment for cholelithiasis. Some surgeons may even thinking that a very large gallstone is an indication for a classical open cholecystectomy.
Keywords: Gall stone; Cholelithiasis; Cholecystectomy.

Introduction

Cholelithiasis is one of the most common disease in the Western world and is increasing in incidence in the Eastern world too.(1) The incidence among male US populations is about 6% meanwhile this rate reaches 9% for female US populations(2,3) approximately 20% of asymptomatis gall stones become symptomatic through 15 years of their affection, in contrast to asymptomatic gall stones, they may result in complications such as pancreatitis choledocholithiasis cholangitis, cholecystitis, and rarely cholangiocarcinoma.(2-4)

Too many laparoscopic operations for cholecystectomy are performed on an annual basis at the San Fernando General Hospital.[5]this explain that this surgery is one of very common procedures done by surgeons and signifying very high incidence of cholelithiasis.(1)

Laparoscopic cholecystectomy is regarded as gold standard treatment for cholelithiasis and can be achieved in about 96% of the cases; the approximate rate of conversion from laparoscopic to open cholecystectomy is estimated to be about 4%-5%. The gallstone with a size of more than 5 cm is very rarely seen, and in such cases difficulties will face the surgeons in attempting to complete the procedure laparoscopically. Some surgeons may even thought that a very large gallstone is an indication for a classical open cholecystectomy.(6) The rate of conversion to open cholecystectomy is related to patient factors, equipment factors, and possibly surgeon factors.

Case report

A 60-year-old female Muslim patient from Kirkuk-Iraq, presented at 10th December 2020 with clinical features of acute on chronic recurrent attacks of upper abdominal Pain, mild to moderate in severity, radiating to Right shoulder, aggravated by heavy meal, associated with nausea but no vomiting, Past medical history revealed Diabetes Mellitus, hypertension and Ischemic Heart Disease, Past surgical History revealed appendectomy and cardiac catheterization with ERCP for CBD stone extraction, Drug history was not revealed allergy to any known medications and she was on anti-Hypertensive drugs, anti-ischemic and Oral Hypoglycemic Agents, family history, socioeconomic and gynecological/ obstetrical history were not significant, On examination there was no fever, no jaundice and no tachycardia, the gall

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bladder was mildly tender and palpable, murphy's sign was positive, Ultrasound examination revealed thickened gall bladder wall (about 4mm), and the gall bladder was full of different sizes multiple stones, laboratory test showed high WBC count, ECG and ECHO cardiography showed old ischemic changes, after explanation of the situation, within 2 days from the presentation and start of cholecystitis symptoms, decision for the operation has been done by the patient, within the mentioned period and after taking a verbal and written consent, the patient prepared for operation, at first trial of lap cholecystectomy through four ports done, the laparoscopic trial failed because of severe adhesion and failure of progression, the most significant difficulty facing the progression was in ability of the laparoscopic instruments to grasp the gall bladder wall because of its distension, hardness (because it was full of stones), in addition to failure to reach the critical view of safety, different laparoscopic instruments changed so as to grasp the gall bladder but still same challenges faced the progression, the surgery converted to open cholecystectomy through classical Right subcostal incision, open method also was very difficult, the gall bladder was very hard and distended, however much technical surgical challenges faced to employed the manipulation of the gallbladder during the open operation, but at the end calots triangle found, hence ligation of both cystic duct and artery performed, and the gall bladder removed from the bed (Figure 1), a tube drain inserted at the gall bladder bed, after completion of the procedure, the gall bladder opened which was contained full of different sizes gall stones (Figure 2), 537 stone counted (Figures 3), then collected (Figure 4), the patient passes smooth post-operative period, next day after the operation the patient discharged to home, three days following the operation the drain removed and one week later the stitches removed, permission taken from her for using her presentation, gall bladder and gall stone pictures use for reporting, publication and educational purposes as well.

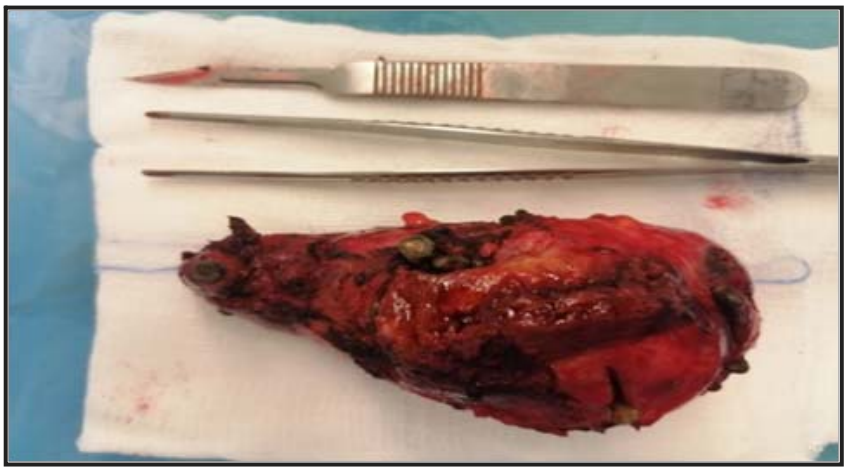

Figure 1 Distended Gall bladder of 60 years old female patient

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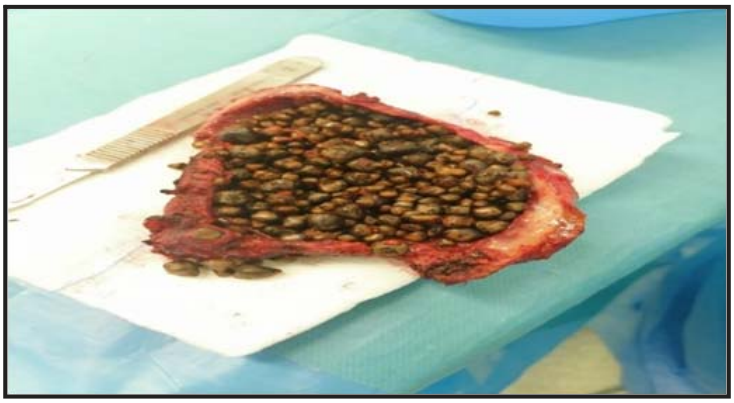
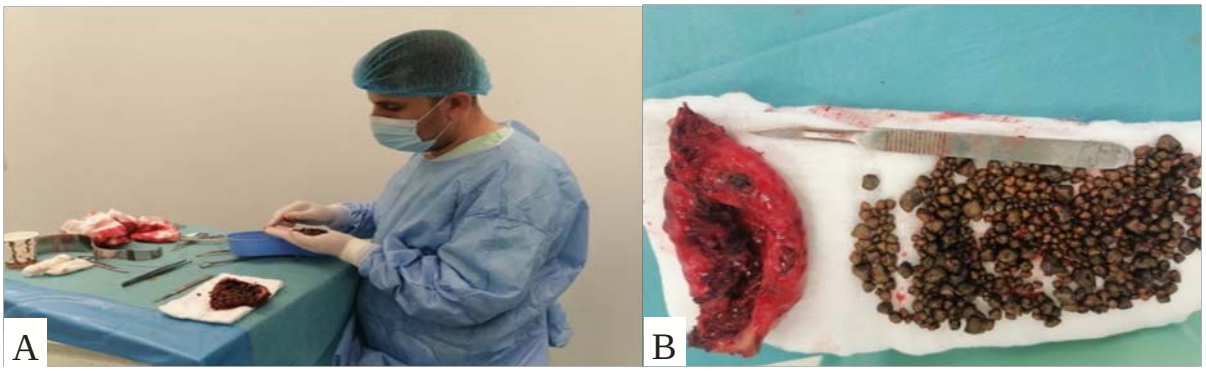


Figure 2 Full stone gall bladder of 60 years old female patient



Figures 3: Counting of 537 Gall stones

Figure 4 collected stones

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Discussion

During a laparoscopic cholecystectomy, a very large gallstone may result in conversion from laparoscopic to open surgery because of two main reasons. First, larger size gall stones in the gallbladder may leads to a thick wall gallbladder as a result of inflammation. It is found that the gallbladder wall thickness has been strongly correlated to increase the rate of conversion to open procedure in bivariate analyses.[7] Second, a large gallstone can result in technical challenges during the surgery, for example, difficulties in grasping the gallbladder wall by the laparoscopic instruments. In addition, the larger size gallbladder will result in more difficulties and challenges in dissection, safe exposure and reaching the safe triangle and clear anatomy, however in literature review we could not found any relation between the number of gall stones and conversion rates from laparoscopic procedure to open classical surgeries but we can explain our conversion is due to the same reasons mentioned for conversion rate from very large gall stones because in our case also we found very thick gall bladder wall, very distended gall bladder, inability for grasping the gall bladder wall by the laparoscopic instruments, and failure of progression in the forward advancing the procedure for detecting safe triangle and clear anatomy for safe dissection, in addition of the risk of perforation and spillage of huge number of gall stones in the peritoneal cavity and disappearance between bowel loops that may result in failure of their finding for extraction and future micro abscess formations and, in spite of challenges for removal of the gall bladder through conventional laparoscopic port site incisions and escaping small stones in the abdominal wall layers nearby the port site, this is again in addition to past medical history of the patient that would limited the time of the operation while the patient was under general anesthesia.

The operating surgeon who wants to do laparoscopic cholecystectomy must try to apply all the steps in order to keep with a routine laparoscopic cholecystectomy, through gentle but good retraction to find the critical view of safety.[8] our operation was started by the use of standard port placements, adhesiolysis done but later on very challenging gall bladder distension and wall thickness with full gall stones found, more than 15 minutes trial done for reaching the anatomical regions of safe triangle but failure of any progression noticed, hence the procedure converted to open classical procedure.

laparoscopic removal of a 9.5-cm gallstone recorded by While Xu et al is regarded as gall stone reported worldwide that removed laparoscopically, however Becerra et al. Removed a 16.8-cm long gallstone through classical open cholecystectomy in the emergency situation.[9,10]

In kota – India 5070 gall stones reported which removed laparoscopically.[11] meanwhile world record for the number of gall stones retrieved is belonging to the cholecystectomy done in West Bengal in eastern India where the removed gall bladder was contained about 12.000 stones.[12] Our cholecystectomy case with its 537 different sizes stone is among one of the recorded Numbers in Kurdistan region and Iraq as well reported.

Conclusion

In addition to very large size gall stone is one of the challenging factors for completing laparoscopic cholecystectomy and regarded as an indication for conversion, huge number of gall stones in combination with distended and thick wall gall bladder as a result of inflammation lead to failure of grasping the gall bladder wall with laparoscopic instruments are other challenges facing the laparoscopic procedure for accessing safe anatomy that increase the rate of conversion to prevent spillage of large number of gall stones and various intra-operative and post-operative complications of cholecystectomy.

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Competing interests

The author declares that he has no competing interests.

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