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Giant Gallstone, Rare Cause for Conversion to open Cholecystectomyfrom Laparoscopic

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1. Abstract

1.1. Background: Gallbladder stones is one of the most common disease of the digestive system. Giant gallbladder stone is rare and subject to technical difficulties in laparoscopic cholecystectomy with high rate of conversion to open cholecystectomy.

1.2. Aim: This is to report one case of a giant gallstone treated with open technique after the trials of laparoscopic technique. Mentioning of some technical difficulties asscociated with laparoscopic approach in large gallbladder stones.

1.3. Case report: 42 years old female patient, known case of epilepsy, presented to emergency room with abdominal right upper quadrant pain that started after eating a fatty meal, with leucocytosis of 23200. Ultrasound showed large intraluminal stone reaching 8 cm with features of acute calcular cholecytitis. MRCP done revealed a large stone measuring 7 cm by 4 cm. Patient admitted as case of acute cholecystitis and consented for laparoscopic procedure with possible conversion to open. Surgery was converted to open cholecystectomy due to technical difficulties. Histopathology report showed 7 x 4 cm gallstone. Patient tolerated well the procedure and was discharged.

1.4. Conclusion: Giant gallbladder stone greater than 3 cm is rare entity and laparoscopic approach can be tried first. Possible complications associated with giant gallbladder stone is not uncommon and can be a reason for conversion to open cholecystectomy.

2. Introduction

Gallbladder stones is one of the most common disease of the digestive system. It is present in 10 to 15% of adults. Female to male ratio is 3:1 [1,4]. Large gallbladder stones above 3 cm are rare and only few case reports documented [2]. The probability of gallbladder cancer is high with large galblladder stones above 3 cm reaching 40% in comparison to only 12% of all subjects in similar age group [3]. Large gallbladder stones may cause biliary colic or acute cholecystitis, also can cause biliary obstruction or even in the gatrointestinal system causing gallstone ileus or even gastric outlet obstruction [2].

3. Case Report

A 42 years old female patient, known case of controlled epilepsy, presented to emergency room complaining of severe abdominal pain in the RUQ area with no radiation or associated symptoms worsening after fatty meals. On examination, abdomen was soft with severly tender RUQ, palpable gallbladder and positive Murphy sign. Laborotory tests revealed leucocytosis of 23200, AST 13.6, ALP 85.8, GGT 126.1, Total bilirubin 11.7, direct bilirubin 6.8. CRP 62.08, Creatinine 57. Abdominal ultrasound was done (Figure 1) and showed distended gallbladder with large intraluminal stone reaching 8 cm in maximum diameter with features of acute calcular cholecystitis. After diagnosis of acute cholecytitis was made, patient was admitted and started on Tazocin. MRCP was indicated due to high LFT and to check the anatomy pre operatively, which revealed large gallbladder stone measuring 7cm x 4cm, CBD diameter of 5 mm, common hepatic duct (CHD) 7mm (Figure 2). Patient was consented for laparoscopic cholecystectomy with possible conversion to open cholecystectomy. At the operation, laparoscopic exploration showed much distended gangrenous gallbladder pending perforation at the fundus, very difficult to grasp. Needle aspiration of the gallbladder was done (50ml of thick bile) and dissection of surrounding adhesions (Omentum and duodenum) allowed reaching the infundibulum with difficulty. Anatomical identification of Calot triangle was difficult and as critical

view of safety was not possible, conversion to open through a right subcostal Kocher incision. Difficulty of standard approach at the base of the gallbladder was encountered due to the large hard stone occupying the gallbladder. We opened the fundus, extracted the stone (Figure 3) and continued the dissection antegrade. A cholecystectomy was accomplished after identification of all anatomical structures. An abdominal drain was left in the subhepatic region. Patient tolerated well the procedure with no immediate complications.

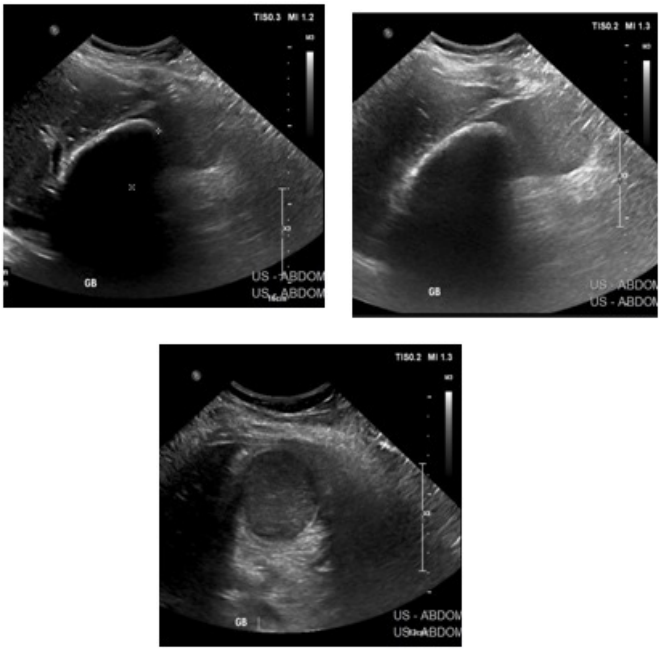

Figure 1: Ultrasound Images of gallbladder stone.

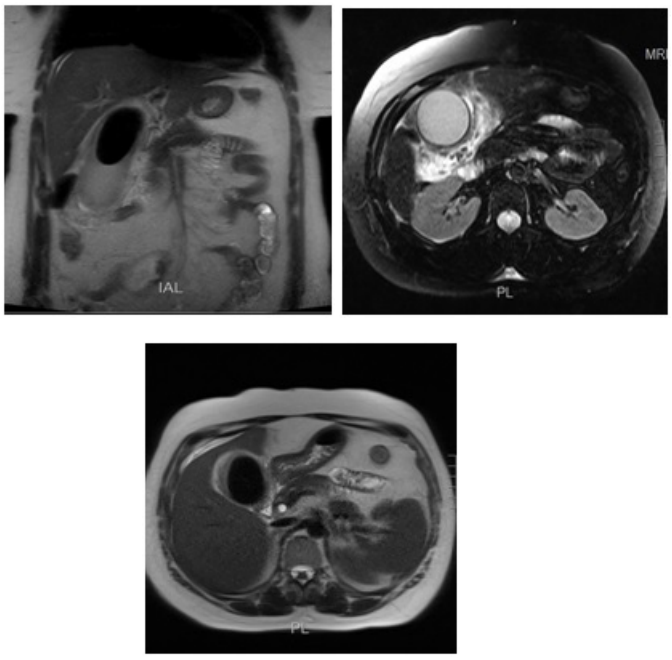

Figure 2: Magnetic Reasonance Cholangiopancreatography Images of gallbladder and gallstone.

Figure 3: Intra opertive findings.

Post operatively, patient developed diarrhea and fever, abdmonial pain and hemoserous fluid draining. Stool analysis showed Clostridium difficle. Antibiotics changed to intravenous Metronidazole and oral Vancomycin. She was discharged after normalization of her labs and subsidence of her diarrhea. Histopathology showed gall bladder measured 9.5 cm x 5 cm and maximum wall thickness measuring 0.7 cm, stone measured 7 cm x 4 cm, Microscopic review revealed thicked gallbladder wall with superficial mucosal ulceration and necrosis, acute on top of chronic inflammation, fibrosis and focal regenerative atypia, and no evidence of malignancy.

4. Discussion

We report a case of giant gallbladder stone. Initial trial of laparoscopic cholecystectomy faced technical difficulties and was converted to open approach. Patient tolerated the procedure well. In term of diagnosis of gallbladder stones, ultrasound is the method most often used to identify cholelithiasis and cholecystitis with sensitivity and specificity of 90 and 95% respectively and can detect small and large size stones and shows features of acute cholecystitis [5]. MRCP is a non invasive technique that has a role in observing choledocolithiasis pre- operatively, it has a comparable diagnosing ability with ERCP for CBD stones [6]. In our case we had the chance to compare the accuracy of US and MRCP in measuring gallbladder stones in comparison to real gallbladder stone via histopathology studies. We appreciate a more accurate size determination with MRCP than US abdomen with actual stone size.

The indications for MRCP in our case was due to high LFT and to check the anatomy pre-operativly (exclude Mirrizi Syndrome & compression to CBD). In regard to the surgical approach to symptomatic giant gallstones, laparoscopic cholecystectomy is the management of choice [7], however some authors believe that open cholecystectomy is the management of choice due to the expected technical difficulties related to the size of the gallstone, including severe inflammation and thickening of gallbladder wall which makes it difficult to grasp the gallbladder with laparoscopic instruments and to identify the anatomy of Calot's triangle. Retrieval of large gallstone is another technical difficulty and could be another reason for conversion or initial open cholecystectomy [8]. In our case we tried laparoscopic approach initially and found some difficulties such as grasping the gallbladder due to the large gallstone, unability to identify Calot's triangle and the critical view of saftey which makes the decision to convert to open clear, even in the open technique some difficulties were faced such as reaching the base of the gallbladder in dissection due to the large gallstone. In terms of associated morbidities, Epilepsy was not mentioned in the reviewed giant gallbladder stones case reports [8-13]. Our patient was on anti-epileptic medications and whether it can be a contributing factor for gallstone formation is not clear and no strong correlation made. Our case report has some limiations such as the composition analysis of the gallstone. This would have been beneficial in determining the risk factors of the pathophysiology, which will help us in determining the etiology of the giant gallstones, and whether the composition of the stone has any relation to the size increase of the gallbladder stone.

5. Conclusion

Giant gallbladder stone is a rare entity. Gallstones bigger than 3 cm are very rare and imposes significant challenges in the management techniques surgically, which include inability to identify the anatomy. Open cholecystectomy is a safer alternative to laparoscopic cholecystectomy for giant gallstones.

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