American Journal of Surgery Case Reports

Case Report

Laparoscopic Approach for Large/Giant Gallstones: Case Report

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Abstract

Introduction: Gallstone disease is very common, but gallstone bigger than 5 cm in diameter is very rare and uncommon. It is very challenging to be removed by Laparoscopic Approach.

Case presentation: A 39-year-old female presented to the surgical outpatient department at our center with a history of intermittent right upper quadrant colicky pain for 5 months which was related to fatty food, radiating to the back, and not associated with fever or jaundice. On examination, vital signs and abdominal examination were normal, the laboratory parameters were normal. Ultrasound of the abdomen showed a large gallbladder stone or gallbladder wall calcification.

Discussion: Gallstone over 5 cm in diameter is rare and unique. The laparoscopic approach is very difficult for these cases however, be safely performed in an experienced surgeon's hands We have proven that for the rare giant gallstone about 10.5 cm in size, Laparoscopic cholecystectomy is a feasible option if the anatomy of the Calot's triangle can be exposed; otherwise, open cholecystectomy is a safe choice.

Conclusion: Laparoscopic cholecystectomy can be performed safely and effectively for huge gallstones with careful dissection, the use of appropriate instruments, and skilled manipulation of the gallbladder. While open cholecystectomy may be considered in certain cases, laparoscopic cholecystectomy should remain the preferred approach for giant gallstones, unless there are technical difficulties or an inability to expose the anatomy. Early referral for surgical intervention is crucial to avoid complications such as cholangitis, pancreatitis, and biliary obstruction.

Keywords: Large; Giant; Gallstone; Cholecystectomy; Laparoscopic

Introduction

Gall stones disease is very common in developed countries but in the last decades, its incidence increases significantly in Saudi Arabia. Usually, this disease is common in adult females. The exact etiology is not known but it is suggested that supersaturation of bile because of defect in lipid metabolism is the main factor. The size of the stone is usually less than 5 cm and the gold standard treatment of such stone is the laparoscopic Approach. A gallstone with a size of more than 5 cm may cause difficulty when it removes laparoscopically [1]. Gallstones larger than 5 cm are a minority in gallstone disease; literature suggests this condition as an indication for open cholecystectomy [2].

In our case, we will present our center experience in the Laparoscopic approach for a case of a 10.5 cm giant gallstone that was removed laparoscopically.

Case Presentation

A 39-year-old female presented to the surgical outpatient department at our institution with a history of intermittent right upper quadrant colicky pain for 5 months which was related to fatty food, radiating, and not associated with fever or jaundice. On examination, vital signs and abdominal examination were normal and laboratory tests were all within normal range. Ultrasound of the abdomen showed a large gallbladder stone or gallbladder wall calcification measuring around 10 cm and CT showed a large calcified gallbladder stone (Figure 1). To the best of our knowledge; this is one of the biggest gallstone approaches laparoscopically. The gallbladder containing a large size of stone was retrieved by extending the epigastric incision.

Intra-operative approach and findings

A 12 mm trocar was placed through the supra-umbilical incision using the open Hasson technique to approach the intraperitoneal cavity. A pneumoperitoneum was made by insufflation of carbon dioxide. The table was kept in reverse Trendelenburg position with the right side up. A 0° telescope was introduced through the umbilical port for diagnostic laparoscopy was done. Another 3 trocars placement

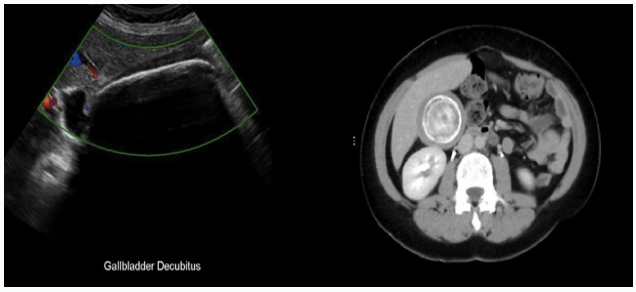

Figure 1: CT Scan Gallbladder Decubitus.

Citation: Al-Darwish AS, AlShammari W, AlaSheikh M, ALNujaidi M. Laparoscopic Approach for Large/Giant Gallstones: Case Report. Am J Surg Case Rep. 2023;4(8):1085.

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Publisher Name: Medtext Publications LLC

Manuscript compiled: Aug 03rd, 2023

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(subxiphoid × 1, and right subcostal × 2) all within direct vision, the gallbladder was retracted over the liver to expose the calot's triangle. However, the gallbladder could not be retracted in the usual fashion. It was retracted towards the right shoulder, but the very presence of a huge gallstone did not allow a clear view of the calot's triangle. After dissection in this area, it was decided to dissect the gallbladder from the liver bed retrogradely. The manipulation of the gallbladder was carried out using the close jaws of a grasper after careful dissection was carried out to achieve a critical view of safety. This view is defined as the clearance of fibrous and fatty tissue from the calot's triangle, the presence of only two tubular structures entering into the gallbladder, and the separation of one-third of the gallbladder from the liver to see the cystic plate. Then separate the cystic duct and cystic artery. Both structures were carefully clipped and cut using a 3:1 manner. Bovie was used to separate the gallbladder from the liver bed. The gallbladder was removed from the abdomen using an endo bag after extending the epigastric incision. All trocars were removed under direct vision. A laparoscopic approach was performed successfully and the patient had an uneventful recovery. The patient's postoperative recovery was fine, and she was discharged on the same day.

Discussion

Gallstone disease is one of the commonest surgical problems, with women being affected more commonly than men [2]. Laparoscopy has become the gold standard for the treatment of symptomatic gallstones and can be performed in 96% of cases. The rate of conversion from the laparoscopic approach to open is about 4%-5% [3]. Gallstones with a diameter of over 5 cm are uncommon [1].

Such cases are difficult for the laparoscopic approach, it will be easier in elective cases rather than in an emergency situation .majority of the surgeons may consider a huge and large gallstone an indication for open surgery [4]. The risk of conversion and the rate depends on the surgeon's experiences, patient condition, and availability of the right equipment [5]. In our case, 30 degrees telescope was not available.

Singh et al. [6] has reported a successful retrieval of a 13 cm gallstone laparoscopically. Xu et al. [7] reported the laparoscopic extraction of a 9.5 cm gallstone, and Becerra et al. [8] reported the removal of a 16.8 cm long gallstone *via* classical cholecystectomy. However, even with large gallstones, a laparoscopic approach performed by a skilled laparoscopic surgeon is the best to proceed with it, unless the surgeon suffers to manage it or an inability to expose the anatomy led to conversion to open cholecystectomy. The author was able to perform a safe laparoscopic approach without any conversion. Similar case reports with the experiences of other surgeons have been reported in other published case reports in the peer-reviewed literature [6,7]. Different-sized large gallstones have been reported in the literature, and most of them are solitary. Igwe and Diri [9] in their report of two cases operated laparoscopically had a solitary gallbladder calculus measuring 8.2 cm × 4.5 cm × 4.4 cm and 7.5 cm × 4.2 cm × 4.0 cm respectively [9]. The size of the gallstone in the current case is one of the largest reported in the literature so far (Figure 2).

Figure 2: Size of the gallstone in the current case.

Conclusion

Laparoscopic cholecystectomy can be performed safely and effectively for giant gallstones with careful dissection, the use of appropriate instruments, and skilled manipulation of the gallbladder. While open cholecystectomy may be considered in certain cases, laparoscopic cholecystectomy should remain the preferred approach for giant gallstones, unless there are technical difficulties or an inability to expose the anatomy. Early referral for surgical intervention is crucial to avoid complications such as cholecystitis, cholangitis, pancreatitis, and biliary obstruction.

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