



## A Case of a Large/Giant Gallbladder Stone Retrieved During Cholecystectomy at a Tertiary Care Centre in North India with Review of Literature

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**Abstract: Background:** Gallbladder stone disease is a very common problem encountered by general surgeons thereby making cholecystectomy one of the most frequently surgical operations performed across the globe. The size of stone may vary from few millimetres to as large as the size of a golf ball. The size of the stone can pose technical challenges to the surgeon especially during laparoscopic cholecystectomy. **Case Report:** A 63 years old male presented to our OPD with chief complaints of recurrent right upper abdominal pain & dyspepsia for 6 months. An ultrasound of whole abdomen was suggestive of single gallbladder stone of approximately 5cm size. Laparoscopic converted to open cholecystectomy was done. The stone retrieved from the gallbladder had almost replaced whole of the gallbladder and was found to be approximately of the size of 7x2.5 cm, making it one the largest gallbladder stones reported in literature. **Conclusion:** Gallbladder stone disease is a very common entity. Incidence of very large gallstones is rare especially >5 cm. Larger the size of the stone; higher the risk of complications. Laparoscopic cholecystectomy is a standard treatment for gallstone disease, however in case of large stones laparoscopic cholecystectomy may be limited by technical factors including grasping gallbladder wall, obscured Calot's triangle anatomy, dissection and delivery of gallbladder specimen at the end of the procedure.

**Keywords:** Gallbladder stone, Laparoscopic cholecystectomy, Open cholecystectomy.

### INTRODUCTION

Gallstone is by far the most common disease involving the gallbladder and biliary tree (Courteny, M. *et al.*, 2018). Prevalence of gallstones is highest in people of northern European descent, and in Hispanic populations and Native American populations (Shaffer, E.A. 2005). Prevalence of gallstones in India was found to be 6.12% in the adult population (Khuroo, M.S. *et al.*, 1989). The standard surgical treatment of symptomatic gallstones is cholecystectomy. The size of a gallstone may vary and is important as more complications have been reported with larger size stones besides higher technical difficulties during laparoscopic

cholecystectomy (Dalal, S. *et al.*, 2014). The larger size of gallstones more than 3 cm in size have higher associated risk of gallbladder cancer (Ekici, Y. *et al.*, 2007).

### CASE REPORT

A 63 years old male with no co-morbidities presented to our OPD with chief complaints of recurrent right upper abdominal pain and dyspepsia for 6 months. There was no other significant complaint. His past medical, surgical and family history was insignificant. On examination, he was hemodynamically stable. His general physical and abdominal examinations did not reveal any positive findings. An ultrasound of whole abdomen was advised which was suggestive of distended gallbladder with single large stone of approximately 5cm size in the lumen and normal calibre common bile duct. Wall thickness of gallbladder was reported as normal (Figure 1). There was no evidence of pericholecystic fluid/ edema. His baseline biochemical parameters including liver function panel was within the normal limits. Patient was diagnosed as a case of chronic cholecystitis and was taken up for elective laparoscopic cholecystectomy. Intraoperatively it was found that whole of the gallbladder has been replaced by the stone in the gallbladder. Due to difficult intraoperative handling of the gallbladder and obscured Calot's triangle anatomy due to large size of the stone, conversion to open cholecystectomy was done via right subcostal incision (Figure 2). Cholecystectomy was performed with removal of gallbladder en mass without any perforation/spillage by fundus first approach. The stone retrieved from the gallbladder had almost replaced whole of the gallbladder and was measured 7x2.5 cm in size, making it one of the largest gallbladder stones reported in literature (Figures 3&4). Patient was discharged on day 2 and follow up biopsy was suggestive of chronic cholecystitis.



**Figure 1.** USG showing large GB stone



**Figure 2.** Intraoperative image showing large GB stone



**Figure 3.** Length approx. 7cm



**Figure 4.** Breadth approx. 2.5 cm

## DISCUSSION AND REVIEW OF LITERATURE

The gallstone disease may be asymptomatic or symptomatic. The symptomatic gallstones may have varied presentations such as biliary pain, cholecystitis, or biliary obstruction depending on location (Gibnev. F. J. 1990). The standard treatment for gallstones is laparoscopic cholecystectomy which is successful in 96% of the cases; the rate of conversion to open cholecystectomy is about 4%-5% (Singh, Y. *et al.*, 2020). The size of gallstones over 5 cm is very rare and hence are very difficult to operate successfully by laparoscopy in view of various technical reasons especially in the hands of a surgeon having limited experience in laparoscopic cholecystectomies. Many surgeons consider a giant gallstone an indication for a classical open cholecystectomy (Dalal, S. *et al.*, 2014). Large sized gallstones in different ways may lead to conversion from laparoscopic to open. Due to inflammation the gallbladder wall may be thickened which has been shown to correlate with increased rates of conversion to open surgery (Raman. S. R. *et al.*, 2012). Additionally, a thickened gallbladder wall with a large stone inside may pose difficulty in exposing the Calot's triangle properly leading to increased rate of complications. In our case, the procedure was started with standard 4 port laparoscopic dissection. After adhesiolysis, it was found to be difficult to grasp the gallbladder wall with laparoscopic instruments besides inadequate exposure of the Calot's triangle and hence conversion to open was done via a right subcostal incision and cholecystectomy completed by fundus first approach without any bile spillage or perforation of gallbladder.

Xu *et al.* reported the laparoscopic retrieval of a 9.5-cm gallstone & Becerra *et al.* reported removal of a 16.8-cm long gallstone via classical cholecystectomy in the emergency setting (Becerra, P. *et al.*, 2011; & Xu, X. *et al.*, 2013). S Yardesh *et al.*, reported a case of largest gallstone (14x7cm) removed in the world laparoscopically (Singh, Y. *et al.*, 2020). To the best of our knowledge, the gallstone retrieved by us is one of the largest retrieved till date in north India. The term giant or large gallstone is yet to be defined and is a matter of debate (Igwe, P. O., & Diri, O. N. 2020). However, some researchers have defined giant/large gallstones having a diameter of more than 5 cm or weighing above 70gm (Dalal, S. *et al.*, 2014).

Further, it is emphasized that the large size of a gallstone is not an absolute indication for open cholecystectomy. In experienced hands, laparoscopy is a very useful (Igwe, P. O., & Diri, O. N. 2020).

## CONCLUSION

Gallbladder stone disease is a very common entity. Incidence of very large gallstones is rare especially >5 cm. Larger the size of the stone; higher risk of complications. Gallbladder stones greater the 3 cm in size should be removed even if asymptomatic because of increased risk of development of gallbladder cancer. Without any doubt, laparoscopic cholecystectomy is a standard treatment for gallstone disease, however in case of large stones laparoscopic cholecystectomy may be limited by technical factors including grasping gallbladder wall, obscured Calot's triangle anatomy, dissection and delivery of

gallbladder specimen at the end of the procedure. Laparoscopic cholecystectomy in such cases should be done by an experienced surgeon and early conversion to open should be done if the surgeon is facing any extreme difficulty in handling the gallbladder to avoid any complications leading to increased unacceptable morbidity.

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**Consent of the patient:** Not applicable

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