Gallstone Ileus with Persistent Cholelithiasis and Choledocholithiasis

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Introduction

Gallstone ileus is a rare pathology but well described in literature. The natural history of the disease is thought to involve long-standing inflammation of the gallbladder secondary to multiple episodes of cholecystitis. Eventually, a fistula is formed between the gallbladder and the enteral tract, allowing gallstones to escape and become lodged in the intestinal tract. Although previous studies have indicated that enterolithotomy alone was preferred approach due to low morality rate, there is high recurrence rate. The questions is whether the patient is better served with a one or two staged operation.

Case

- 73-year-old female with history of atrial fibrillation on anticoagulation, chronic kidney disease, and cholelithiasis who presented to the ED for nausea, vomiting and crampy abdominal pain. CT revealed dilated loops of small bowel with a transition point in the terminal ileum associated with a gallstone. An additional 1.4 cm gallstone and air were noted in the gallbladder lumen. Initially, patient was hypotensive but responded to fluid resuscitation. A nasogastric tube was placed and managed with supportive care.

- On hospital day 2, patient underwent exploratory laparotomy, enterolithotomy, cholecystectomy, cholecystoduodenal fistula repair, cholangioscopy using the Spyglass Discover cholangioscope with strone extraction. The site of obstruction was found in the distal jejunum/proximal ileum. A proximal enterotomy was made and stone was extracted. The enterotomy was closed with a stapler. The gallbladder was inspected and fistula was discovered between the gallbladder and the duodenum. This was taken down and repaired with two layers of 4-0 PDS suture and reinforced with 2-0 silk sutures. The gallbladder was opened and stones were evacuated. Cholangioscopy was performed and choledocholithiasis was noted at the distal common bile duct. The stones were retrieved using an EndoBasket through the cholangioscope and a final inspection of the bile duct ampulla and duodenum proved to have no obstruction. The infundibulum was oversewn with 4-0 PDS suture and a drain was placed.

Case

- Immediately after the operation, patient required vasoactive support however was improving on post-operative day 1. On post-operative day 3, patient's NGT was removed and clear liquid diet was initiated. She had return of bowel function that evening. Patient fully recovered and was discharged home on post-operative day 6. She was seen in clinic for follow up and remaining drain was removed.

Imaging

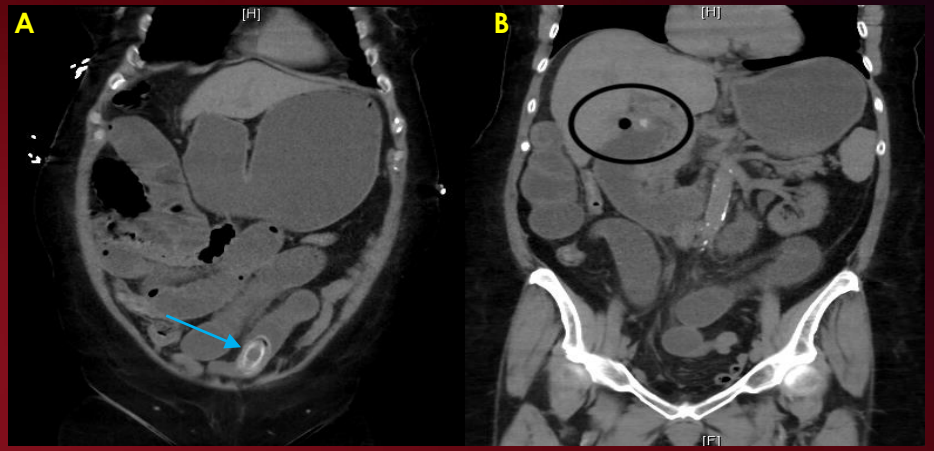

Figure 1A. CT demonstrating small bowel obstruction for gallstone. 1B. CT demonstrating cholecystoduodenal fistula.

Figure 2. Gallstone removed from the small bowel.

Discussion

In selected patients, it is safe to manage gallstone ileus and underlying biliary problem in a one stage procedure. In the management of gallstone ileus, it is important to consider other complications of cholelithiasis such as choledocholithiasis. The approach outlined in this case report afforded the opportunity to avoid likely recurrent gallstone ileus or biliary obstruction. Given the size of the retained stones, this also avoided future complications such as cholangitis had the choledocholiathisis has been missed.

Conclusion

The management of gallstone ileus continues to change as surgical expertise and technology evolve. Consensus is lacking with regard to surgical management of gallstone ileus. Study of the approach is difficult given the rare nature of the disease and the multiple differences among cases. As time goes on this body of literature will continue to grow. In instances of continued cholelithiasis in the setting of gallstone ileus, addressing the biliary problem is helpful in preventing recurrent gallstone ileus and reoperation.

References

1. Emily Doole, A case of recurrent gallstone ileus within 1 week post enterolithotomy, Journal of Surgical Case Reports, Volume 2022, Issue 3, March 2022, rjac057, https://doi.org/10.1093/jscr/rjac057
2. Vasilescu AM, Tarcoveanu E, Bradea C, Lupascu C, Stagniti F. Gallstone Ileus. What therapeutic options are there? Annali Italiani di Chirurgia. 2022 Jan;11. PMID: 35122424.
3. Turner AR, Sharma B, Mukherjee S. Gallstone Ileus. [Updated 2021 Sep 27]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK430834/
4. Ploneda-Valencia CF, Gallo-Morales M, Rinchon C, Navarro-Muñiz E, Bautista-López CA, de la Cerda-Trujillo LF, Rea-Azpeitia LA, López-Lizarraga CR. Gallstone ileus: An overview of the literature. Rev Gastroenterol Mex. 2017 Jul-Sep;82(3):248-254. English, Spanish. doi: 10.1016/j.rgmx.2016.07.006. Epub 2017 Apr 19. PMID: 28433486.
5. RM Reisner, JR Cohen Gallstone ileus: a review of 1001 reported cases. The American surgeon, 1994 - europepmc.org