Management of a rare cause of mechanical bowel obstruction in an urban community hospital: A case series.

M. Guevara-Kissel, MD[1], M. Paez, MD[1], S. Gumbs, MD[1], I. Chime, MD[1], J. Fontirroche, BA[3], N. Osti, MD[1], L. Callahan, MD[1], V. Whittaker, MD[1], E. Quinto, MD[2], A. Ojo, MD[2]

1.Dept of Surgery, Harlem Hospital/Columbia University, New York, New York
2.Dept of Surgery, Woodhull Hospital/NYCHHC, New York, New York
3.St. George's University School of Medicine, Grenada, WI

INTRODUCTION

Gallbladder affliction is among the most common indications for surgical intervention in the USA. Estimated that more than 700 thousand cholecystectomies are performed annually. Gallstone ileus constitutes a rare entity with an overall incidence of 0.3-0.5% from which 1-4% are the cause of mechanical bowel obstruction[1]. The condition arises when a gallstone migrates through a bilioenteric fistula, typically a cholecystoduodenal fistula, and becomes lodged in the intestinal lumen, most commonly at the terminal ileum.[1,5]Diagnosis is challenging due to its nonspecific symptoms, which often include abdominal pain, vomiting, and signs of bowel obstruction. Imaging modalities play a crucial role in diagnosis. The classical Rigler's triad—pneumobilia, bowel obstruction, and an ectopic gallstone—is best visualized on computed tomography (CT), which has a higher diagnostic accuracy compared to plain abdominal films and ultrasonography.[5,6] Due to the lack of prospective and retrospective studies, true incidence and key characteristics of this entity are difficult to find.

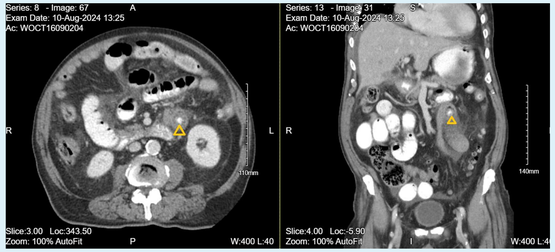
CASE PRESENTATION

This case series presents three distinct cases of gallstone ileus in elderly patients, providing insight into the varied clinical presentations and management strategies of this condition.

Case #1: 88-year-old male, presented with severe abdominal pain, vomiting, and signs of sepsis. Imaging revealed a calcified gallstone lodged in the small bowel, necessitating resection of 18 cm of bowel with primary anastomosis.

Case #2: 62-year-old female, exhibited signs of acute obstruction with pneumobilia and a calcified stone 100 cm from the ileocecal valve. Surgery involved an enterotomy and stone extraction, with a quick recovery.

IMAGES



(Fig, 1) Case 1: Computed tomography scan of the abdomen revealing an intraluminal hyperdense stone at the jejunum (arrowhead) resulting in dilatation of the proximal bowel.



. (Fig. 2) Case 1: Single gallstone impacting the jejunum.



(Fig. 3) Case 3: Large gallstone inside the ileum 50 centimeters from the ileocecal valve.

CASE PRESENTATION:

Case #3: 92-year-old female, presented with a more gradual onset of symptoms and was found to have a large calcified stone in the ileum, with a possible cholecystoduodenal fistula. Surgical removal of the stone was performed, followed by an uneventful recovery.

DISCUSSION

The clinical presentation of gallstone ileus remains variable and includes abdominal pain, vomiting, and signs of bowel obstruction. Radiographic findings, known as Rigler's triad, include pneumobilia, intestinal obstruction, and an ectopic gallstone.[2-4] Early diagnosis is essential given the condition's high mortality rate, seen as high as 27%.[3][7]

The preferred management of gallstone ileus remains debatable. Treatment options include an enterotomy with stone extraction or a more comprehensive one-stage procedure involving enterolithotomy, cholecystectomy, and fistula repair. Evidence suggests that enterotomy with stone extraction alone can be associated with lower morbidity compared to more invasive procedures, making this the preferred approach taking into account patient with multiple comorbidities.[6][8][9] In stable patients without significant comorbidities, a one-stage procedure can be considered to prevent recurrent episodes of ileus, cholangitis, and cholecystitis by addressing it via a single operation.[8][9]

CONCLUSION

Gallstone ileus is a rare condition predominantly affecting the elderly female population. Enterotomy with stone extraction alone is the consensus treatment of choice due to lower complication rates, while a one-stage procedure may be appropriate for selected patients who are stable and can tolerate a more extensive surgery. Early diagnosis and individualized treatment plans are essential to improve patient outcomes.[3][7][8]

REFERENCES

1. Alemi F, Seiser N, Ayloo S. Gallstone Disease: Cholecystitis, Mirizzi Syndrome, Bouveret Syndrome, Gallstone Ileus. Surg Clin North Am. 2019 Apr;99(2):231-244. doi: 10.1016/j.suc.2018.12.006. PMID: 30846032.

2. Alzerwi, Nasser A. N., Idrees, Bandar, Alsareii, Saeed, Aldebasi, Yaser, Alsultan, Afnan. The Regularity of the Site of Impaction in Recurrent Gallstone Ileus: A Systematic Review and Meta-Analysis of Reported Cases, *Canadian Journal of Gastroenterology and Hepatology*, 2021, 5539789, 10 pages, 2021. https://doi.org/10.1155/2021/5539789

3. Dai XZ, Li GQ, Zhang F, Wang XH, Zhang CY. Gallstone ileus: case report and literature review. World J Gastroenterol. 2013 Sep 7;19(33):5586-9. doi: 10.3748/wjg.v19.i33.5586. PMID: 24023505; PMCID: PMC3761115.

4. Halabi, Wissam J. MD*; Kang, Celeste Y. MD*; Ketana, Noor BS*; Lafaro, Kelly J. MD*; Nguyen, Vinh Q. PhD†; Stamos, Michael J. MD*; Imagawa, David K. MD, PhD*; Demirjian, Aram N. MD*. Surgery for Gallstone Ileus: A Nationwide Comparison of Trends and Outcomes. Annals of Surgery 259(2):p 329-335, February 2014. | DOI: 10.1097/SLA.0b013e31827eefed

5. Townsend, J. C. M., Beauchamp, R. D., Evers, B. M., & Mattox, K. L. (2016). *Sabiston textbook of surgery* (20th ed.). Elsevier - Health Sciences Division.

6. Wang L, Dong P, Zhang Y, Tian B. Gallstone Ileus Displaying the Typical Rigler Triad and an Occult Second Ectopic Stone: A Case Report. Medicine. 2017;96(45):e8541. doi:10.1097/MD.0000000000008541.

7. Pavlidis TE, Atmatzidis KS, Papaziogas BT, Papaziogas TB. Management of Gallstone Ileus. Journal of Hepato-Biliary-Pancreatic Surgery. 2003;10(4):299-302. doi:10.1007/s00534-002-0806-7.

8. Khurshid MH, Hejazi O, Spencer AL, et al. A Little Goes a Long Way: A Comparison of Enterolithotomy Versus Single-Stage Cholecystectomy in the Management of Gallstone Ileus. The Journal of Trauma and Acute Care Surgery. 2024;:01586154-990000000-00850. doi:10.1097/TA.0000000000004497.

9. Chou JW, Hsu CH, Liao KF, et al. Gallstone Ileus: Report of Two Cases and Review of the Literature. World Journal of Gastroenterology. 2007;13(8):1295-8. doi:10.3748/wjg.v13.i8.1295.

10. Ayantunde AA, Agrawal A. Gallstone Ileus: Diagnosis and Management. World Journal of Surgery. 2007;31(6):1292-7. doi:10.1007/s00268-007-9011-9.

www.PosterPresentations.com