



# Gallstone Ileus: A Case Report in a 74-Year-Old Male



Dylan Smith (MS3), Dr. Farzad Amiri, and Dr. David Denning  
General Surgery, Marshall School of Medicine

## Background

Less than 1% of cholelithiasis cases present with complications.<sup>1</sup> A less prevalent complication is gallstone ileus: a gallstone that has eroded from the gallbladder to the duodenum via a cholecystocholeduodenal fistula and lodged in the small intestine causing an obstruction. The obstruction most often occurs at the terminal ileum and ileocecal valve.<sup>2,3</sup> In patients over the age of 65, gallstone ileus is more common in females than males with a ratio of 3.5-6.0:1.<sup>2</sup> Prompt diagnoses and treatment of gallstone ileus are critical to positive patient outcomes. Here we report a case of gallstone ileus in a 74-year-old male patient that was successfully managed by robotic-assisted enterotomy.

## Case Presentation

74-year-old male presented to the emergency department with nausea and vomiting, fatigue, and dizziness for two weeks. The patient reported that they did not have a bowel movement for that past 4 days but passed flatus. The patient had a past medical history of hypertension. His past surgical history only consisted of a L upper extremity open reduction and internal fixation (ORIF). The patient was vaccinated for COVID.

The patient's laboratory values were remarkable for glucose 144, BUN 46, serum creatine 3.8, sodium 133, calcium 8.2, WBC 21.6, and a hemoglobin and hematocrit of 11.5 and 37.1 respectively.

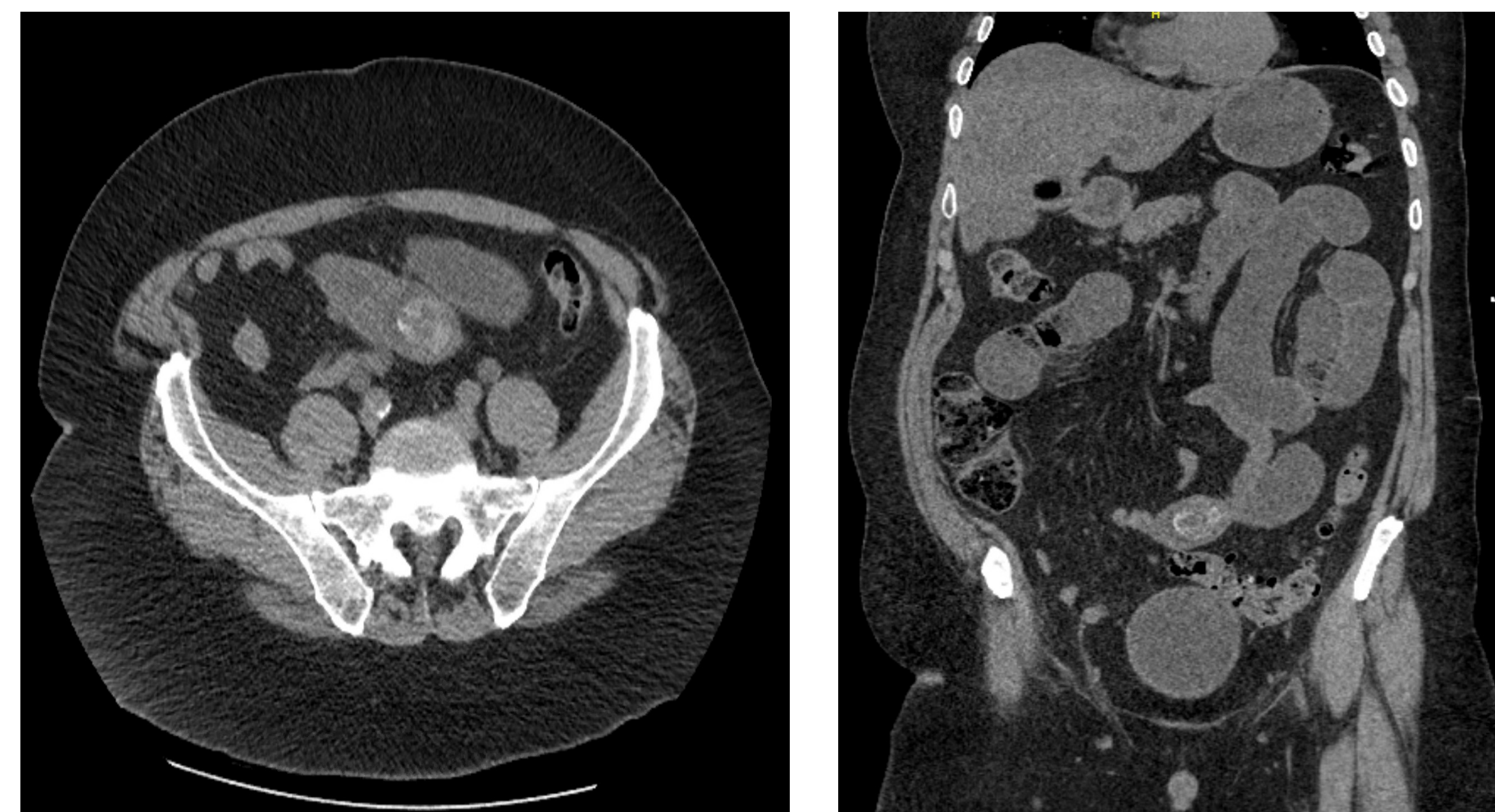
CT scans showed pneumobilia in the common bile duct, gallbladder wall thickening, a gallbladder-to-duodenum fistula, mild bilateral hydronephrosis, a dilated fluid filled small bowel with a 3.1cm calcification, and colonic diverticulosis. The patient was admitted to med/surg with anticipated surgical correction and was started on fluid resuscitation for AKI upon admission (Cr = 3.8), vancomycin/cefepime for WBC of 22, given pain medication as needed, and deep venous prophylaxis.

The surgeon elected to perform a 3 port robotic stone retrieval using upper abdominal port placement. Patient was placed in slight trendelenburg positioning. The stone was found near the terminal ileum with dilation proximal. The stone was milked retrograde to a healthy portion of ileum and small bowel was opened longitudinally. The stone was retrieved, and the bowel was closed transversely in a 2-layer closure. Patient tolerated procedure well and discharged on hospital day #3.

Pt presentation to ED  
-N/V and constipation for 2 weeks

Lab	Value
BUN	46
Creatine	3.8
Sodium	133
Calcium	8.2
WBC	21.6
Hemoglobin	11.5
Hematocrit	37.1

Imaging



Enterotomy and discharge on hospital day 3

## Discussion

Gallstone ileus is a rare complication of cholelithiasis, with an estimated prevalence of 0.3%-0.5% in patients with gallstones.<sup>4</sup> Gallstone ileus presents more frequently in female patients over the age of 70 with a history of cholelithiasis.<sup>4-6</sup> In this case, the patient was a male and had no prior history of cholelithiasis. Gallstone ileus occurs most commonly from a fistula that is created from the gallbladder to the duodenum, as seen in our patient.<sup>7</sup> Due to the stone, the gallbladder becomes inflamed and adheres to the duodenum due to their proximity. Necrotic inflammatory effects cause the stone to erode through the gallbladder and into the duodenum via a fistula.<sup>8</sup> As the gallstone travels through the small bowel, it becomes impacted, usually in the ileum or the ileocecal junction, where the intestinal lumen starts to narrow.<sup>2,3</sup> In this study, the patient's small bowel obstruction was in the ileum. According to Hussain et al<sup>3</sup>, a gallstone must be at least 2.5cm in diameter to cause gallstone ileus. In the case of our patient, the stone measured approximately 3.1cm in diameter.

- Three main surgical treatment modalities exist for treating gallstone ileus.
  - Enterotomy alone
  - One stage procedure that includes stone extraction via enterotomy fistula repair with or without a cholecystectomy
  - Two-stage procedure, where enterotomy is performed first with fistula repair as a second surgery later.
- While the literature provides evidence for all surgical treatments, enterotomy alone remains the mainstay treatment for most patients due to their lower mortality rates and reduced postoperative complications.<sup>2,4,9,10</sup>
- Most fistulas will close spontaneously on their own without surgical intervention. Due to the patient not having any indications for a one stage procedure, an enterotomy alone was the best indicated surgical treatment and therefore performed on this patient.

## References

1. Abou-Saif A, Al-Kawas FH. Complications of gallstone disease: Mirizzi syndrome, cholecystocholedochal fistula, and gallstone ileus. *The American journal of gastroenterology*. 2002;97(2):249-254.
2. Reisner RM, Cohen JR. Gallstone ileus: a review of 1001 reported cases. *The American surgeon*. 1994;60(6):441-446.
3. Hussain Z, Ahmed M, Alexander D, Miller G, Chintapala S. Recurrent recurrent gallstone ileus. *The Annals of The Royal College of Surgeons of England*. 2010;92(5):e4-e6.
4. Halabi WJ, Kang CY, Ketana N, et al. Surgery for gallstone ileus: a nationwide comparison of trends and outcomes. *Annals of surgery*. 2014;259(2):329-335.
5. Ayantunde A, Agrawal A. Gallstone ileus: diagnosis and management. *World journal of surgery*. 2007;31(6):1294-1299.
6. Muthukumarasamy G, Venkata SP, Shaikh IA, Somani BK, Ravindran R. Gallstone ileus: surgical strategies and clinical outcome. *Journal of digestive diseases*. 2008;9(3):156-161.
7. Masannat Y, Shatnawei A. Gallstone ileus: a review. *The Mount Sinai Journal of Medicine, New York*. 2006;73(8):1132-1134.
8. Takahashi K, Kashimura H, Konno N, et al. Gallstone ileus with spontaneous evacuation: A case report. *Journal of general and family medicine*. 2018;19(5):173-175.
9. Ravikumar R, Williams JG. The operative management of gallstone ileus. *The Annals of The Royal College of Surgeons of England*. 2010;92(4):279-281.
10. Doko M, Zovak M, Kopljar M, Glavan E, Ljubicic N, Hochstädter H. Comparison of surgical treatments of gallstone ileus: preliminary report. *World journal of surgery*. 2003;27(4):400-404.
11. Clavien P, Richon J, Burgan S, Rohner A. Gallstone ileus. *Journal of British Surgery*. 1990;77(7):737-742.