



## A Restless Stone

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Gallstone ileus is an infrequent cause of mechanical small bowel obstruction. The mortality rate of gallstone ileus remains relatively high, since gallstone ileus usually presents on elderly patients with multiple underlying diseases. Typically, the way of gallstone migration to small bowel is through biliary-enteric fistula, which is a rare complication of chronic cholecystitis. Patients present with diffuse abdominal pain and vomiting when the gallstone lodges in distal small bowel. The goals of surgical intervention include release of the bowel obstruction and closure of biliary-enteric fistula.

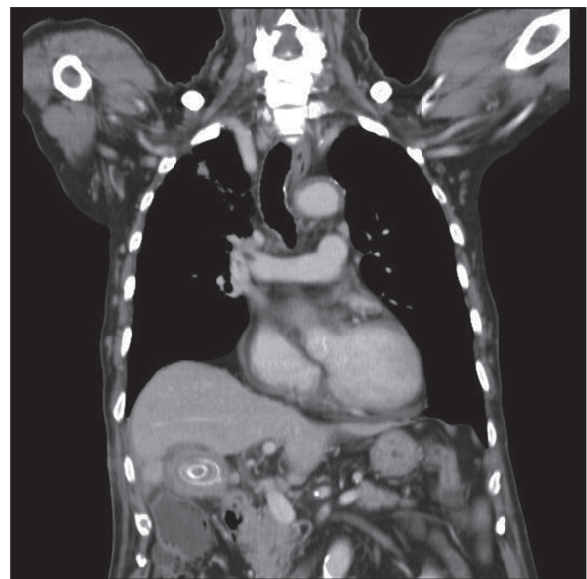
**Key words:** *gallstone ileus, cholecystitis, biliary-enteric fistula, enterolithotomy*

### Introduction

Gallstone ileus is an infrequent cause of mechanical small bowel obstruction. The mortality rate of gallstone ileus remains relatively high, since gallstone ileus usually presents on elderly patients with multiple underlying diseases. Typically, the way of gallstone migration to small bowel is through biliary-enteric fistula, which is a rare complication of chronic cholecystitis.

### Case Report

The 84-year-old man was referred to the emergency department because of progressive abdominal pain for 2 days. Associated symptoms included vomiting twice with bile-like content. He had a history of gallstone-related cholecystitis four months ago (Fig. 1). On arrival, his vital signs were stable. The abdomen was distended without obvious tenderness. The laboratory data revealed elevated white blood cell count and C-reactive protein level, hyperkalemia, and acute kidney injury. Diffuse cramping pain and vomiting episodes lead to the clinical impression



**Fig. 1.** Cholecystitis in previous computed tomography scan. Not the gallstone within the gallbladder.

of bowel obstruction. A kidney, ureter, and bladder (KUB) X-ray was performed initially (Fig.2), which disclosed the finding of small bowel obstruction and a radiopaque lesion over the right upper quadrant. The

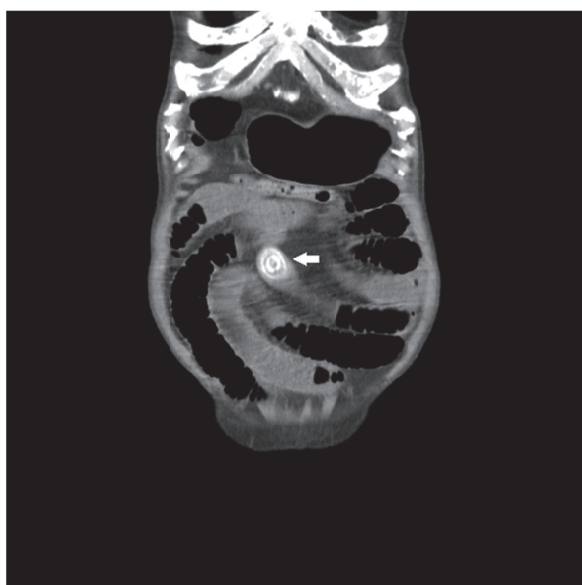
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non-contrast abdominal computed tomography (CT) scan was obtained to confirm this finding (Fig. 3). On admission, the patient underwent emergency entero-



**Fig. 2.** Small bowel obstruction was noted on kidney, ureter, and bladder (KUB). Not the radiopaque lesion over the leading point (arrow).



**Fig. 3.** Computed tomography scan showed small bowel obstruction and a leading point of a gallstone. Not the gallstone “leaved” from gallbladder.

lithotomy (Fig.4) and bowel decompression without intervention to the gallbladder. After the surgery, he was admitted to the surgical intensive care unit. There was a relatively smooth postoperative clinical course. He was discharged on the 12th day after admission.

## Discussion

Gallstone ileus is caused by gallstone impaction within the gastrointestinal tract. Less than 1% of mechanical bowel obstruction is caused by gallstones, and most cases are elderly patients with a concomitant medical condition.<sup>1</sup> The pathophysiology of gallstone ileus is the formation of a biliary–enteric fistula owing to chronic inflammation from cholecystitis. The gallstones pass from the gallbladder to the small bowel via this fistula, eventually causing small bowel obstruction. Most obstructing stones have a diameter larger than 2 cm. The symptoms and signs of gallstone ileus are mostly nonspecific. Imaging examinations with CT, plain film, or ultrasound can help in the preoperative diagnosis of 77% of patients with gallstone ileus.<sup>2</sup> The surgical treatment involves addressing three key elements: cholelithiasis, biliary–enteric fistula, and intestinal obstruction. In low risk patients, enterolithotomy and biliary procedure (including cholecystectomy and biliary-enteric fistula closure) can be performed concomitantly. However, in high risk patients, enterolithotomy alone is preferred.



**Fig. 4.** The gallstone was removed by emergency enterolithotomy.

## References

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