

A Fatal Miss: Death by Gallstone Ileus

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INTRODUCTION

Gallstone ileus is a surgical emergency. It is caused by large gallstones (usually >2 cm) traveling through a biliary-enteric fistula, becoming impacted, and causing a mechanical bowel obstruction. Biliary-enteric fistulae occur in 2-3% of patients who have had cholecystitis. Gallstone ileus occurs in <0.5% of patients presenting with small bowel obstruction and should be suspected in older adult patients with a history of biliary disease. Though sometimes diagnosed at the time of surgery, it is often discovered preoperatively with computed tomography (CT), plain film, or ultrasound. Findings on CT include gallbladder wall thickening, pneumobilia, and intestinal obstruction with visible calcified gallstones at the site of obstruction. The primary treatment is surgical removal of the obstructing stones after resuscitation of the patient. Mortality rates for gallstone ileus are quite high, ranging from 5.5 to 6.7%, and are 5-10x higher than other causes of mechanical small bowel obstruction, though these rates are likely influenced by comorbidities as the patients are generally older adults.

CLINICAL HISTORY

A 43 year old woman with a recent history of cholecystectomy with cholecystoduodenal fistula repair presented to the emergency room with abdominal pain, nausea, and vomiting. A CT scan showed a distal small bowel obstruction and she was admitted for medical management with nasogastric (NG) tube decompression and intravenous fluid resuscitation. She appeared to be improving over the next few days, even passing a little gas and small bowel movements. The NG tube was removed and she was trialed on an oral diet. She had increasing abdominal pain and the plan was made for CT enterography. However, the night before the study, she had an episode of massive emesis with aspiration and became unconscious. A code blue was called and she was found bradycardic on the monitor with no palpable pulse. Resuscitative efforts were unsuccessful and she was declared dead.

METHODS

A full autopsy including thorough review of the decedent's medical chart was performed at University of Maryland Medical Center per the family's request after the medical examiner's office declined the case.

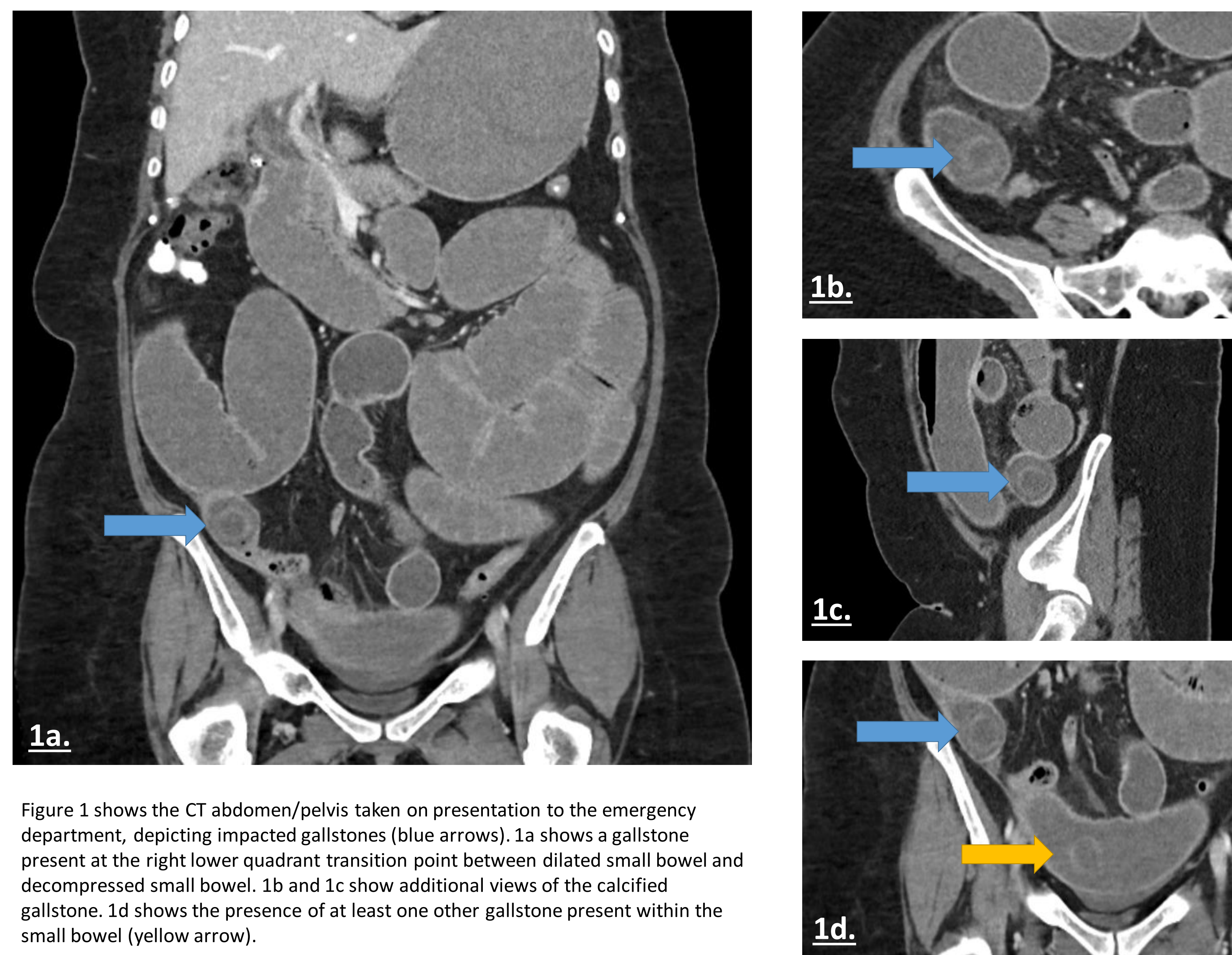


Figure 1 shows the CT abdomen/pelvis taken on presentation to the emergency department, depicting impacted gallstones (blue arrows). 1a shows a gallstone present at the right lower quadrant transition point between dilated small bowel and decompressed small bowel. 1b and 1c show additional views of the calcified gallstone. 1d shows the presence of at least one other gallstone present within the small bowel (yellow arrow).

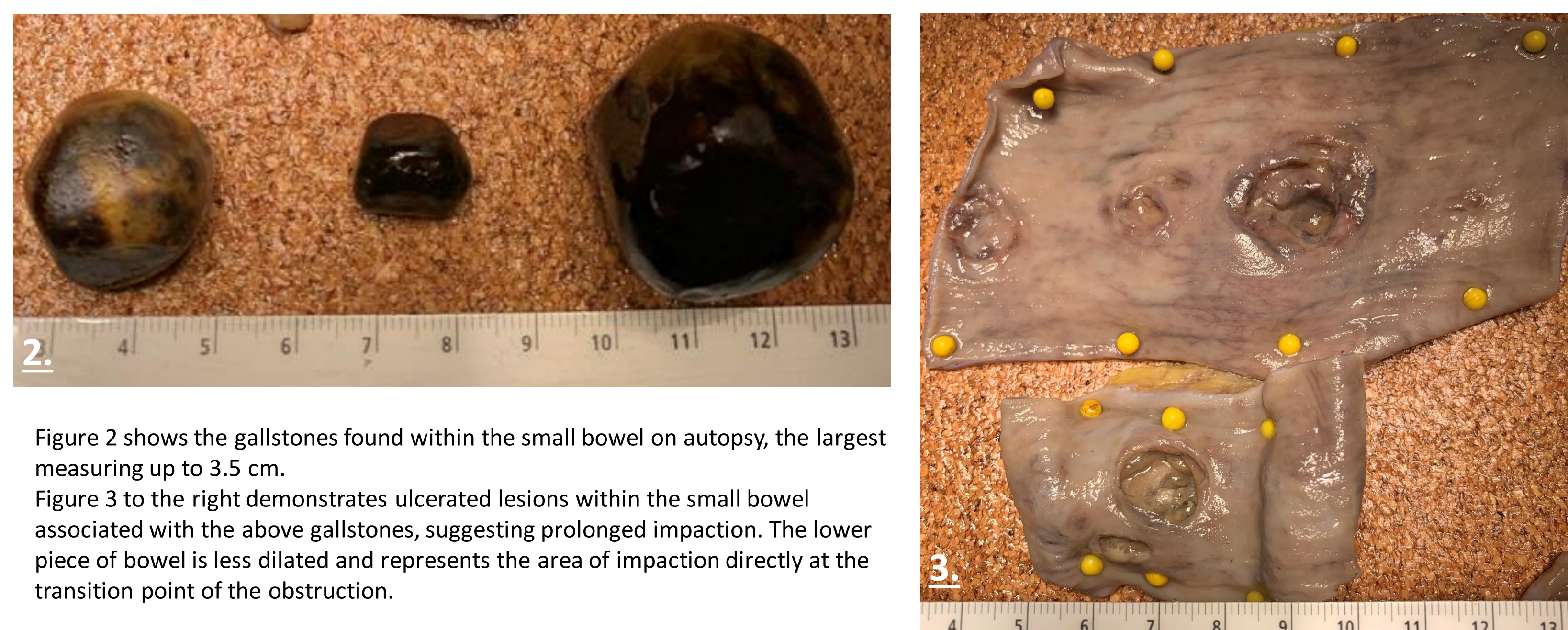


Figure 2 shows the gallstones found within the small bowel on autopsy, the largest measuring up to 3.5 cm. Figure 3 to the right demonstrates ulcerated lesions within the small bowel associated with the above gallstones, suggesting prolonged impaction. The lower piece of bowel is less dilated and represents the area of impaction directly at the transition point of the obstruction.

RESULTS

A review of the medical records and imaging studies revealed the visible presence of gallstones impacted in the small bowel on the CT abdomen/pelvis performed on presentation to the emergency room (Fig. 1).

External examination was notable for a distended abdomen and right upper quadrant 11.1 cm surgical wound. Internal examination was notable for distended stomach and small bowel with a transition point in the distal ileum. Opening the bowel revealed three gallstones (Fig. 2) within the ileum with the largest (3.5 x 3.0 x 3.0 cm) impacted at the transition point. Associated with these gallstones were multiple jejunal and ileal ulcerations, indicating prolonged impaction (Fig. 3).

CONCLUSIONS

The cause of death was determined to be complications of gallstone ileus. The mechanical obstruction was likely a partial obstruction, as the decedent had been passing small amounts of gas and stool. However, much like a clogged sink, though a little may pass at a time, when exposed to a higher volume, it backs up. With the advancement of her diet and the removal of the NG tube, the decedent unfortunately experienced an episode of large-volume emesis, went into respiratory failure likely due to aspiration, and was unable to be resuscitated.

At no point in her hospitalization was gallstone ileus brought up in the differential, despite the known recent history of a cholecystoduodenal fistula. The CT abdomen/pelvis performed in the emergency department shows calcified objects present at the transition point between dilated and decompressed small bowel. These were not mentioned in the CT results, but, combined with the signs and symptoms of small bowel obstruction, are diagnostic of gallstone ileus.

The patient was young and without significant comorbidities. Had gallstone ileus been recognized at the time of presentation, she would have been taken to surgery and likely would have survived.

This case highlights the importance of imaging in the context of autopsy. With the rise of CT availability in the autopsy setting and the readily viewable hospital record imaging studies, it is increasingly clear that the ability to read these studies will need to become an important tool in the pathologist's skillset.

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