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GALLSTONE ILEUS IN AN ELDERLY FEMALE: A RARE SURGICAL EMERGENCY – A CASE REPORT

General Surgery

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ABSTRACT

Gallstone ileus is a rare but important cause of mechanical intestinal obstruction, predominantly affecting elderly females with long-standing gallstone disease. It occurs due to migration of gallstones into the gastrointestinal tract through a biliary-enteric fistula, most commonly a cholecystoduodenal fistula, resulting in bowel obstruction. Early diagnosis remains challenging because of nonspecific clinical presentation and intermittent symptoms. We report a case of a 75-year-old hypertensive female who presented with abdominal pain for five days and vomiting for one day. She had a history of recurrent similar episodes treated conservatively four months earlier. Clinical examination revealed mild abdominal distension, tenderness over the right hypochondrium, and sluggish bowel sounds. Contrast-enhanced computed tomography (CECT) abdomen and pelvis demonstrated irregular gallbladder wall thickening with pneumobilia, pericholecystic inflammatory changes, suspected cholecystoduodenal fistula, and an ectopic hyperdense gallstone within the distal ileum causing small bowel obstruction with proximal bowel dilatation and multiple air-fluid levels.In view of the radiological findings and clinical deterioration, emergency exploratory laparotomy was performed. Intraoperatively, a single large gallstone impacted within the distal ileum causing intestinal obstruction was identified. Enterotomy was performed, and the impacted stone along with multiple smaller intraluminal gallstones was successfully retrieved without bowel resection. The postoperative period was uneventful, and the patient recovered well with gradual return of bowel function. She was discharged in stable condition on postoperative day 12. Gallstone ileus should be considered in elderly females presenting with recurrent abdominal pain and features of intestinal obstruction. CECT plays a crucial role in early diagnosis by demonstrating Rigler's triad and associated biliary-enteric fistula. Prompt surgical intervention with enterolithotomy remains the preferred treatment approach in elderly patients and is associated with favorable outcomes when performed early.

KEYWORDS

Gallstone Ileus, Small Bowel Obstruction, Cholecystoduodenal Fistula, Enterolithotomy, Gallstone Migration, Elderly Female.

INTRODUCTION

Gallstone ileus is an uncommon but important cause of mechanical intestinal obstruction, predominantly affecting elderly females with long-standing cholelithiasis. Despite the term "ileus," the condition represents a true mechanical obstruction caused by the migration of one or more gallstones into the gastrointestinal tract through a biliary-enteric fistula, most commonly a cholecystoduodenal fistula. The migrated stone subsequently becomes impacted within the intestinal lumen, usually at the terminal ileum due to its relatively narrow diameter and reduced peristaltic activity. Although gallstone disease is common, gallstone ileus accounts for only 1–4% of all cases of intestinal obstruction, but the incidence may rise to nearly 25% among elderly patients presenting with non-strangulating small bowel obstruction.

The condition predominantly occurs in elderly patients with multiple comorbidities, making diagnosis and management challenging. Clinical presentation is often nonspecific and may include intermittent abdominal pain, nausea, vomiting, abdominal distension, and features of subacute or acute intestinal obstruction. Recurrent episodes of abdominal pain or prior conservative admissions are not uncommon because transient obstruction may occur before complete luminal impaction. Delayed diagnosis contributes significantly to morbidity and mortality, especially in geriatric patients.

Radiological imaging plays a crucial role in diagnosis. Contrast-enhanced computed tomography (CECT) of the abdomen is considered the investigation of choice due to its high sensitivity and specificity. Classical imaging findings include pneumobilia, evidence of intestinal obstruction, and ectopic gallstones, collectively known as Rigler's triad. Prompt identification allows timely surgical intervention and reduces the risk of bowel ischemia, perforation, and sepsis.

Surgical treatment remains the cornerstone of management. The commonly performed procedure is enterolithotomy with extraction of the obstructing gallstone, particularly in elderly or high-risk patients where definitive biliary surgery may increase operative morbidity. Early intervention generally results in favorable outcomes and reduced postoperative complications. Here, we report a rare case of gallstone ileus in a 75-year-old hypertensive female who presented with recurrent right upper abdominal pain and vomiting, eventually developing intestinal obstruction due to multiple migrated gallstones. The patient was successfully managed with emergency exploratory laparotomy and enterotomy with retrieval of multiple gallstones, followed by an uneventful postoperative recovery.

Case Presentation

A 75-year-old female presented to the emergency department with complaints of abdominal pain for five days and vomiting for one day. The abdominal pain was localized to the right upper quadrant, insidious in onset, and gradually progressive in nature. It was associated with nausea and multiple episodes of vomiting. She had a history of a similar episode four months earlier, during which she was admitted and diagnosed with acute calculous cholecystitis. At that time, she was managed conservatively and experienced symptomatic improvement before discharge.

The patient was a known hypertensive for the past ten years and was on regular antihypertensive treatment. There was no history of diabetes mellitus, tuberculosis, or prior abdominal surgery.

On general examination, the patient was conscious, oriented, and moderately built with fair general condition. Her vital parameters were stable. There was no pallor, icterus, cyanosis, clubbing, lymphadenopathy, or pedal edema. Abdominal examination revealed a soft and mildly distended abdomen with tenderness over the right hypochondrium. Murphy's sign was negative. There was no guarding or rigidity. Bowel sounds were sluggish on auscultation.

Radiological Findings (CECT Abdomen and Pelvis)

Routine hematological and biochemical investigations were

performed. Ultrasonography and contrast-enhanced computed tomography (CECT) of the abdomen and pelvis revealed a contracted gallbladder with multiple hyperechoic foci around it. The gallbladder wall was irregularly thickened, measuring up to 5 mm, with multiple air foci noted within the wall and extending into the adjacent pericholecystic space. Pericholecystic fat stranding was also present. The gallbladder was found closely abutting the first part of the duodenum, suggestive of a possible cholecystoduodenal fistulous communication.

A rim hyperdense oval calculus-like structure was identified within the distal ileum, causing proximal bowel loop dilatation with multiple air-fluid levels, with the maximum bowel caliber measuring approximately 2.7 cm. These findings were suggestive of gallstone ileus causing mechanical small bowel obstruction.

Additional findings included bilateral increased renal cortical echogenicity with maintained corticomedullary differentiation, a large exophytic cortical cyst in the lower pole of the right kidney measuring 6 × 4.3 cm, and mild left hydroureteronephrosis.

The overall radiological impression was suggestive of gallstone ileus secondary to fistulous communication between the gallbladder and duodenum with migration of gallstones into the distal ileum leading to intestinal obstruction.

Operative Findings

In view of the clinical and radiological findings, emergency surgical intervention was planned. On 11/04/2026, the patient underwent emergency exploratory laparotomy under general anaesthesia. Intraoperatively, dilated proximal bowel loops were identified with a single large gallstone impacted within the distal ileum causing mechanical intestinal obstruction. Enterotomy was performed, and the impacted stone along with multiple smaller intraluminal gallstones was successfully retrieved. No bowel gangrene or perforation was noted intraoperatively. The procedure was completed uneventfully.

Postoperative Course

Postoperatively, the patient was managed with intravenous fluids, antibiotics, analgesics, and supportive care. Gradual return of bowel activity was noted, following which oral feeds were initiated and tolerated well. The postoperative period remained uneventful, and the patient showed satisfactory clinical improvement. She was discharged in stable condition on postoperative day 12 with advice for regular follow-up.

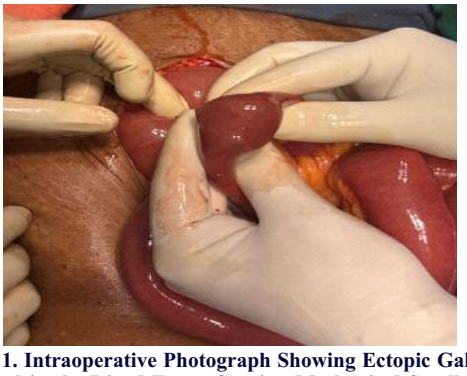

Figure 1. Intraoperative Photograph Showing Ectopic Gallstone Impacted in the Distal Ileum Causing Mechanical Small Bowel Obstruction

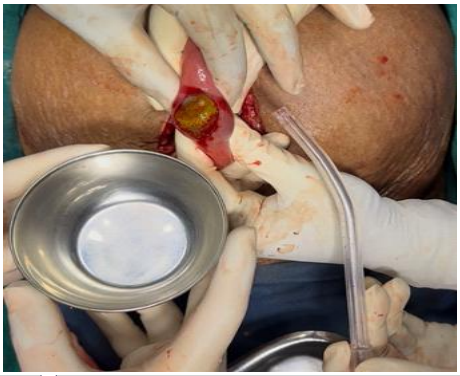

Figure 2. Enterolithotomy Procedure Demonstrating Surgical Extraction of the Impacted Gallstone Through a Longitudinal Enterotomy

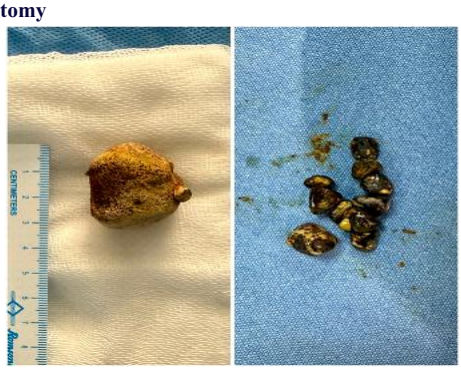

Figure 3. Gross Specimen of Retrieved Gallstones Following Enterotomy, Including the Large Obstructing Stone and Multiple Additional Enteric Gallstones

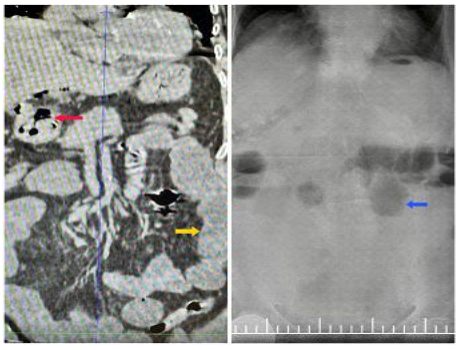

Figure 4. Radiological Demonstration of Rigler's Triad on Imaging Showing Pneumobilia (Red Arrow), Intestinal Obstruction with Dilated Bowel Loops (Yellow Arrow), and Ectopic Gallstone within the Intestinal Lumen (Blue Arrow), Diagnostic of Gallstone Ileus

DISCUSSION

Gallstone ileus is a rare complication of cholelithiasis accounting for approximately 1–4% of all cases of mechanical intestinal obstruction, with the incidence increasing up to 25% in elderly patients above 65 years of age presenting with non-strangulating bowel obstruction.[1] The disease predominantly affects elderly females, with a reported female-to-male ratio ranging from 3.5:1 to 6:1.[2] Our patient was a 75-year-old female, which correlates with the demographic profile described in the literature.

Gallstone ileus develops secondary to chronic inflammation of the gallbladder leading to adhesion formation and biliary-enteric fistula formation. Cholecystoduodenal fistula accounts for nearly 70–85% of all biliary-enteric fistulas.[4] The terminal ileum is the most common site of obstruction, reported in approximately 50–70% of cases due to its narrow lumen and relatively poor peristalsis.[3] In the present case, radiological imaging demonstrated suspected cholecystoduodenal fistulous communication with an ectopic gallstone lodged within the distal ileum causing small bowel obstruction. Clinical presentation is often nonspecific and intermittent, resulting in delayed diagnosis. Tsang et al. reported that many patients experience recurrent episodes of abdominal pain before developing complete obstruction.[2] Similarly, our patient had previous admissions for similar complaints four months earlier and was treated conservatively before presenting with acute intestinal obstruction. The presenting symptoms in most reported cases include abdominal pain (approximately 90%), vomiting (60–80%), abdominal distension, and constipation.[1,2] Our patient presented with progressive right upper quadrant pain associated with multiple episodes of vomiting and mild abdominal distension.

Radiological evaluation plays a critical role in diagnosis. Rigler's triad consisting of pneumobilia, small bowel obstruction, and ectopic gallstone is considered characteristic of gallstone ileus and is visualized on CT imaging in nearly 77% of patients.[3] In our case, CECT abdomen demonstrated irregular gallbladder wall thickening up to 5 mm, pneumobilia, pericholecystic inflammatory changes, bowel dilatation with air-fluid levels, and a hyperdense calculus within the

distal ileum. The maximum bowel caliber measured approximately 2.7 cm. These findings were highly suggestive of gallstone ileus secondary to cholecystoduodenal fistula formation.

Computed tomography is considered the gold standard imaging modality with a sensitivity of approximately 93%, specificity approaching 100%, and diagnostic accuracy of nearly 99% in gallstone ileus.[3] Segundo et al. emphasized that CT imaging not only confirms intestinal obstruction but also accurately identifies the fistulous tract and ectopic gallstone, thereby facilitating early surgical planning.[3] Similar diagnostic utility was observed in our patient, where preoperative CECT enabled timely operative intervention.

Surgical management remains the definitive treatment for gallstone ileus. Enterolithotomy alone is the most commonly performed procedure in elderly patients because it is associated with lower operative morbidity and mortality compared to one-stage surgery involving fistula repair and cholecystectomy.[1,7] Reported mortality rates for enterolithotomy alone range from 5–12%, whereas combined procedures may carry mortality rates up to 16–20% in elderly high-risk patients.[7] In the present case, emergency exploratory laparotomy with enterotomy and retrieval of multiple gallstones was performed successfully without bowel resection or fistula repair. No bowel gangrene or perforation was identified intraoperatively.

Multiple gallstones causing intestinal obstruction are relatively uncommon and may predispose to recurrent obstruction if residual stones remain unnoticed. Arian et al. highlighted the importance of careful intraoperative examination of the bowel because nearly 3–16% of patients may harbor multiple enteric stones.[6] In our patient, multiple gallstones were retrieved successfully during enterotomy, thereby minimizing the possibility of recurrent obstruction. Operative images in our case demonstrated markedly dilated bowel loops and multiple extracted gallstones correlating with both clinical and radiological findings.

Postoperative recovery in gallstone ileus depends on early diagnosis, timely surgery, and the patient's baseline physiological status. Despite the traditionally reported mortality rate of 12–27% in elderly patients, early intervention significantly improves outcomes.[1,6] Our patient had an uneventful postoperative recovery with gradual return of bowel function and was discharged in stable condition on postoperative day 12.

This case highlights the importance of maintaining a high index of suspicion for gallstone ileus in elderly females presenting with recurrent abdominal pain and features of intestinal obstruction. Prompt radiological evaluation with CECT and early surgical intervention can reduce morbidity, prevent bowel ischemia, and improve postoperative outcomes.

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