Gallstone ileus. A case report

Maria Cristina Padilla Jimenez M.D.
Daniela Isabel Ramírez Jiménez M.D.

Chihuahua, Mexico

Case Report

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Background: Gallstone ileus is defined as a mechanical intestinal obstruction that occurs as a complication following the passage of a gallstone into the intestinal tract through a fistula. This fistula develops after a chronic inflammatory process of the gallbladder, creating a communication—most commonly, a cholecystoduodenal fistula. Its diagnosis requires a high index of suspicion, as it is a rare cause of intestinal obstruction. The typical clinical presentation is in older women with a history of biliary disease, characterized by sudden onset of abdominal distension and pain, vomiting, and constipation. Imaging studies, such as CT scans, can reveal signs like pneumobilia or ectopic gallstones. Management is always surgical to resolve the acute obstruction, typically through enterolithotomy. This procedure can be combined with or without specialized fistula management, depending on the patient's condition and the surgeon's judgment.

We present the case of a 64 year old male who presented with a typical intestinal obstruction and a history of cholelithiasis. Imaging identified the three criteria of Rigler's triad, which are only present in about 10% of gallstone ileus cases. This case was treated at our institution.

Keywords: Gallstone ileus, intestinal obstruction, cholelithiasis.

Gallstone ileus is defined by an intestinal obstruction secondary to a gallstone passing from the gallbladder or biliary ducts into the intestinal lumen through a fistula—the most common being a cholecystoduodenal fistula (1). The gallstone must be large enough to partially or completely occlude the intestinal lumen. It is considered a rare cause of intestinal obstruction, accounting for 1-3% of mechanical small bowel obstructions (2). The condition most commonly affects patients with longstanding biliary pathology, women, and the elderly (3).

Because gallstone ileus is an uncommon condition with nonspecific clinical signs of intestinal obstruction, it poses a diagnostic challenge, which can delay treatment and worsen the patient's condition. Documented mortality rates range from 12% to 27%, with morbidity reaching up to 50% (4).

Case report

A 64 year old male patient with a history of hypertension and a diagnosis of cholelithiasis confirmed by ultrasound six months prior presented with a two-day history of diffuse colicky abdominal pain, multiple episodes of fecaloid vomiting, and melena-like stool characteristics. His symptoms worsened with abdominal distension, absence of bowel movements, and no gas passage, prompting him to seek care. Physical examination revealed a distended abdomen, decreased peristalsis, and moderate tenderness on deep palpation with negative rebound.

Imaging studies, specifically a CT scan, showed dilated intestinal loops, air-fluid levels, pneumobilia, and a gallstone measuring 2.3 x 1.6 cm in the small intestine (Figure 1,2).

The diagnosis was a secondary acute abdomen due to probable gallstone ileus. The patient was taken to the operating room for exploratory laparotomy, revealing dilated intestinal loops and a gallstone measuring 2.5 x 2 cm located 180 cm from the ileocecal valve in the small intestine (Figure 3). An enterotomy was performed to extract the stone (Figure 4).

The patient progressed without incidents. On the second postoperative day, he evacuated stool and began a diet. By the fifth postoperative day, with no complications, he was discharged home and scheduled for outpatient follow-up.

Discussion

Gallstone ileus is a rare cause of intestinal obstruction. Its diagnosis requires a high degree of suspicion, especially since about 50% of cases are associated with a history of biliary disease (3), as was the case with our patient. The typical signs of intestinal obstruction such as sudden distension, vomiting, and constipation support the diagnosis.

Obstruction occurs secondary to the passage of a gallstone into the gastrointestinal tract through a

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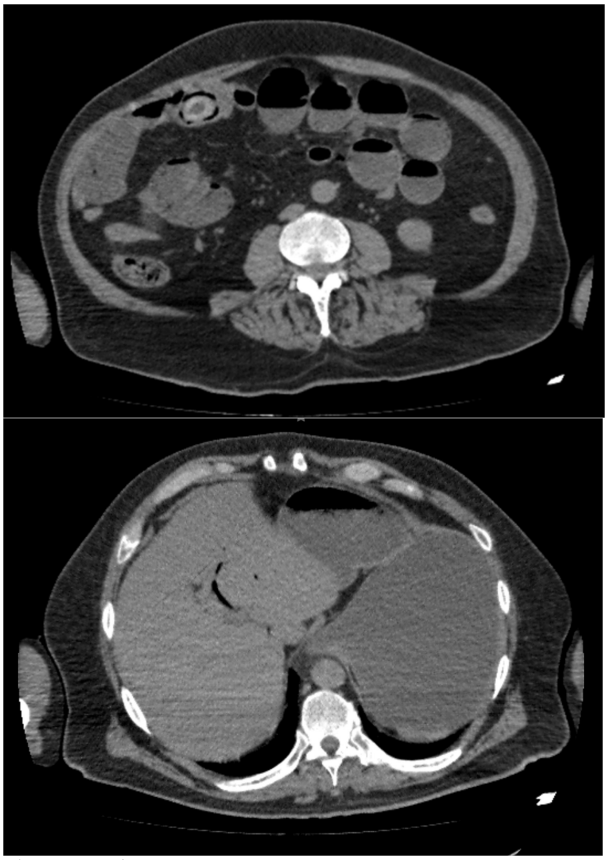

Figure 1 and 2. CT scan with distension of intestinal loops and ectopic biliary stone. (Lower): pneumobilia

biliary enteric fistula most commonly, a communication between the gallbladder and duodenum. These fistulas result from chronic inflammatory processes (5) and are quite rare, with an incidence of approximately 2%. As the stone advances through the tract, it enlarges, and once causing obstruction, it usually measures around 2.5 cm and is typically located in the distal ileum (3), consistent with the measurements in our case.

Clinically, gallstone ileus presents as a mechanical bowel obstruction, which can be acute with sudden distention, vomiting, and constipation; subacute, with absence of bowel movements but continued gas passage; or chronic, with recurrent episodes of pain leading to complete obstruction and alternating asymptomatic periods (5).

Imaging, particularly CT, can reveal the classic Rigler's triad: intestinal obstruction, pneumobilia (figure 2), and an ectopic gallstone—though this triad appears in only about 10% of cases (5). Identification of these three criteria allows for a confident preoperative diagnosis.

Treatment is surgical, typically through an enterolithotomy alone or combined with a procedure to resolve the fistula (4). Usually, only an enterolithotomy is performed since this achieves the main goal of resolving the obstruction. Comparative

Figure 3 and 4. Gallstone located 180 cm from the ileocecal valve. (Lower): Enterolithotomy.

studies have shown a higher mortality rate in patients who undergo both an enterolithotomy and cholecystectomy, at 16.9%, compared to 11.7% in those who only had an enterolithotomy (5). The recurrence rate of gallstone ileus is approximately 5% (5). Other literature comparing solitary enterolithotomy versus combined with cholecystectomy recommends performing only an enterolithotomy in older patients, those with comorbidities, and risk factors, as adding a cholecystectomy or other procedures to address the fistula may increase morbidity and mortality, given the low recurrence rate with just an enterolithotomy (6).

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In the presented case of a 64-year-old patient with a history of hypertension, a management approach was chosen that addressed the surgical emergency with an enterolithotomy alone, avoiding greater surgical risk as recommended by the literature.

Conclusion

Gallstone ileus is considered a rare cause of intestinal obstruction. Therefore, a high index of suspicion is necessary for diagnosis, especially considering elements such as a history of biliary pathology, particularly in women and the elderly. Imaging studies should be used in conjunction, as this is an emergency surgical condition that can be better managed with an accurate preoperative diagnosis, allowing the surgeon to decide the most appropriate procedure with better outcomes for the patient.

Conflicts of interests

It is declared that there are no conflicts of interest related to the publication of this work.

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Maria Cristina Padilla Jimenez
Department of surgery
Hospital General Regional no 1
Chihuahua, México.

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