BJCR
BRAZILIAN JOURNAL
OF CASE REPORTS

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PUBLICAÇÕES CIENTÍFICAS
DE ACESSO ABERTO

Case Report

Atypical Presentation of Gallstone Ileus: A Case Report

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Abstract: Gallstone ileus is a rare complication of cholelithiasis, resulting from the impact of an ectopic gallstone within the gastrointestinal tract, leading to intestinal obstruction. Its clinical presentation is variable, with abdominal pain associated with obstructive symptoms being the most common presentation. In this report, we describe the case of a patient with an atypical presentation of gallstone ileus, with diarrhea as the initial manifestation and no evident signs of intestinal obstruction, who underwent laparoscopic surgical treatment for removal of the ectopic stone, followed by outpatient management of cholelithiasis.

Keywords: Gallstone ileus; Cholelithiasis; Atypical Presentation.

Citation: Santos EHM, Terasoto L, Barbosa NET, Stier SAG, Miranda AS, Terasoto RP, Ferreira RMS. Atypical Presentation of Gallstone Ileus: A Case Report. Brazilian Journal of Case Reports. 2026 Jan-Dec;06(1): bjcr184.

https://doi.org/10.52600/2163-583X.bjcr.2026.6.1.bjcr184

Received: 16 April 2025
Accepted: 10 April 2026
Published: 23 April 2026

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1. Introduction

Gallstone ileus is a rare complication of cholelithiasis, characterized by mechanical obstruction of the gastrointestinal tract due to the impaction of an ectopic gallstone originating from a fistula between the gallbladder and the gastrointestinal tract [1]. This condition is more frequent in elderly women and in patients with multiple comorbidities, contributing to a high mortality rate ranging from 12% to 27% [2].

The clinical presentation of gallstone ileus is variable and depends on the site of stone impaction within the gastrointestinal tract. Abdominal pain is the most common symptom, often associated with signs of intestinal obstruction such as distension, nausea, and vomiting. However, atypical presentations may occur and hinder early recognition of the disease. Initial episodes of diarrhea may mask the diagnosis by mimicking common conditions such as infectious gastroenteritis, ischemic colitis, or antibiotic-associated diarrhea, often leading to delayed diagnosis and increased morbidity associated with gallstone ileus. This diagnostic possibility should be especially considered in elderly patients with a history of cholelithiasis or previous biliary symptoms [3].

Additionally, the presence of biliodigestive fistulas may alter intestinal transit and favor episodes of diarrhea due to the direct passage of bile into the intestine, a phenomenon mainly described in cholecystocolonic or cholecystoduodenal fistulas. Therefore, imaging studies play a fundamental role in confirming the diagnosis in these nonspecific clinical scenarios [4,5]. Recent studies highlight that atypical clinical presentations may significantly contribute to delayed diagnosis in gallstone ileus, reinforcing the importance of a high index of clinical suspicion in elderly patients with nonspecific abdominal symptoms [1,3].

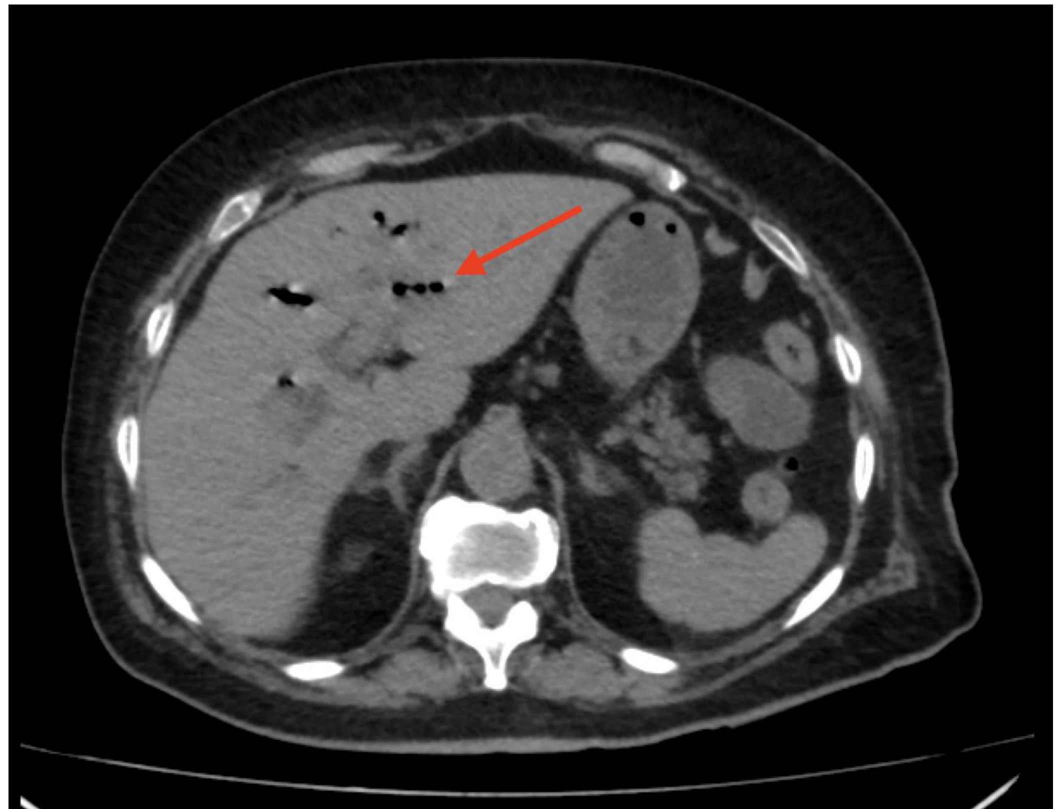
We present a case report of a patient with atypical gallstone ileus, presenting abdominal pain and diarrhea without intestinal obstruction, highlighting the diagnostic approach and treatment instituted, with the aim of reinforcing the need for a high index of

suspicion for the identification of this condition, especially in cases with atypical presentation.

2. Case Report

A 79-year-old female patient with a history of heart disease, diabetes, and hypertension was admitted to a tertiary hospital with diffuse abdominal pain, diarrhea, and vomiting for three days. On physical examination, she was hemodynamically stable, with a distended abdomen and tenderness on deep palpation, without signs of peritonitis. Laboratory tests revealed leukocytosis, elevated C-reactive protein levels, and a mild increase in cholestatic enzymes, with no other significant abnormalities. Abdominal computed tomography (CT) demonstrated dilation of the common bile duct (13 mm), intrahepatic aerobilia, and absence of a visible gallbladder, despite no prior history of abdominal surgery other than hysterectomy. CT also revealed mild fluid distension of jejunal loops in the left hypochondrium, slight thickening of a distal loop, and mild densification of the adjacent mesentery, suggesting an inflammatory process (Figure 1).

Figure 1. Abdominal computed tomography (axial view) demonstrating aerobilia, characterized by the presence of gas within the intrahepatic biliary tree (red arrow), a finding suggestive of a biliary-enteric fistula in the appropriate clinical context.



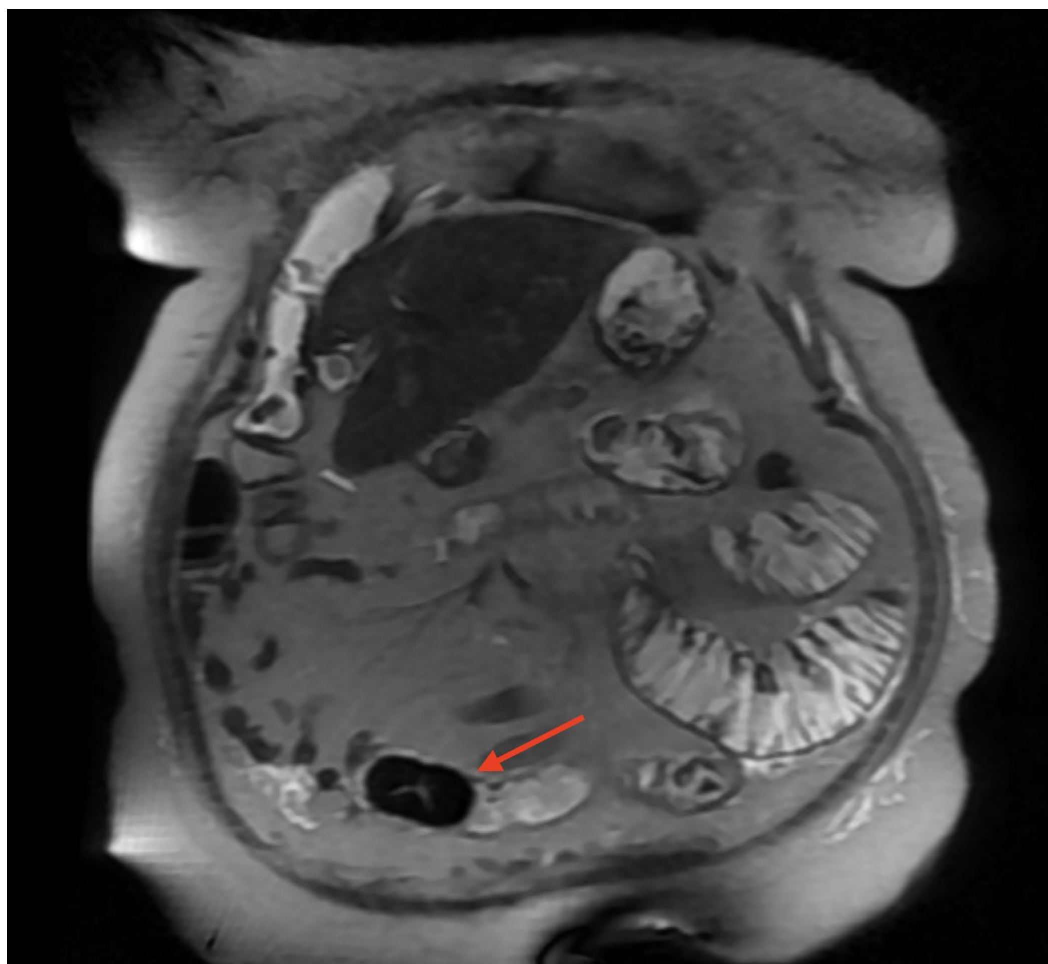
Considering that diarrhea was the predominant initial symptom, infectious gastroenteritis was also considered as a diagnostic hypothesis. Stool tests were requested for microbiological investigation, including stool culture and parasitological examination. However, the patient was unable to provide an adequate sample for analysis during the initial period of hospitalization. Despite empirical antibiotic therapy, there was no improvement in the diarrheal condition, which prompted further diagnostic investigation through imaging methods.

Although computed tomography demonstrated findings suggestive of the disease, including aerobilia and inflammatory intestinal changes, the examination that allowed definitive diagnostic confirmation was magnetic resonance cholangiopancreatography

(MRCP), which clearly demonstrated the presence of an ectopic stone in the jejunum associated with a cholecystoduodenal fistula. Therefore, MRCP was considered the definitive diagnostic modality in this case, as described below.

MRCP of the biliary tract and upper abdomen identified a small, poorly defined gallbladder with diffusely thickened walls, communicating with the lateral aspect of the transition between the first and second portions of the duodenum. The distal ascending colon appeared retracted toward the gallbladder, with no clear cleavage plane between them. An oval-shaped image, markedly hypointense on T2-weighted sequences, measuring approximately 5 cm in its greatest axis, was visualized within the jejunal region (midline/right paramedian region of the upper hypogastrium), suggestive of an ectopic gallstone. There was mild to moderate dilation of the jejunal loops proximal to the stone, while the ileal loops distal to it contained a small amount of content (Figure 2).

Figure 2. Abdominal computed tomography demonstrating an oval-shaped hyperdense image within a distal jejunal loop (red arrow), consistent with an ectopic gallstone, a finding suggestive of gallstone ileus in the appropriate clinical context.



Following these MRCP findings and confirmation of the diagnosis of gallstone ileus, an urgent laparoscopic procedure was performed on the tenth day of hospitalization. During the diagnostic workup, the patient was evaluated by the anesthesiology team and classified as ASA III. Intraoperatively, a 5 cm gallstone was identified impacted in the distal jejunum, approximately 2.5 meters from the ileocecal valve, causing obstruction. The presence of a cholecystoduodenal fistula was confirmed, with no evidence of a cholecystocolonic fistula. The stone was removed through a 5 cm enterotomy on the an-

timesenteric border, followed by primary closure, without the need for segmental enterectomy (Figures 3 and 4). Cholecystectomy and fistula repair were not performed during the same surgical procedure due to the patient's hemodynamic instability.

Figure 3. Imagem intraoperatória demonstrando extração de cálculo biliar ectópico por meio de enterotomia realizada na borda antimesentérica de alça de intestino delgado.

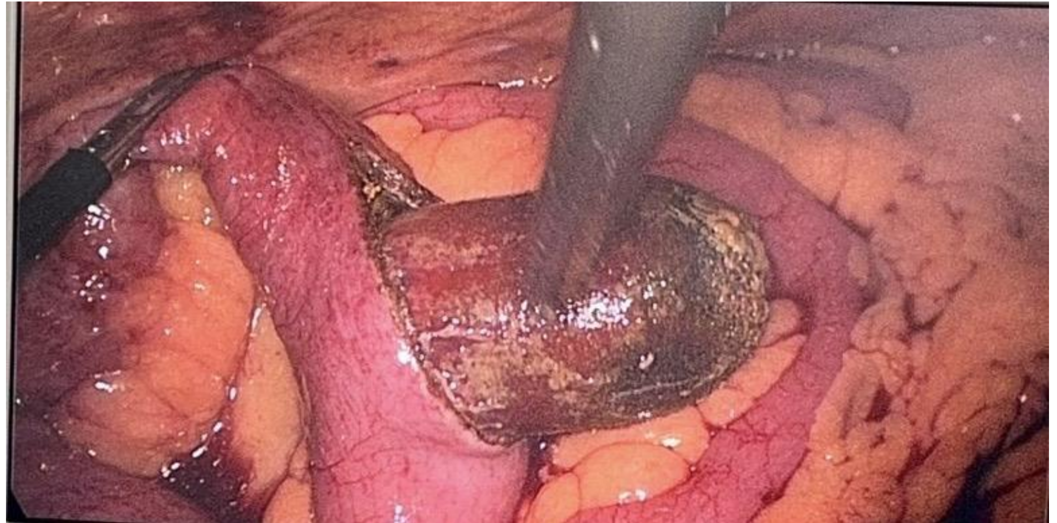
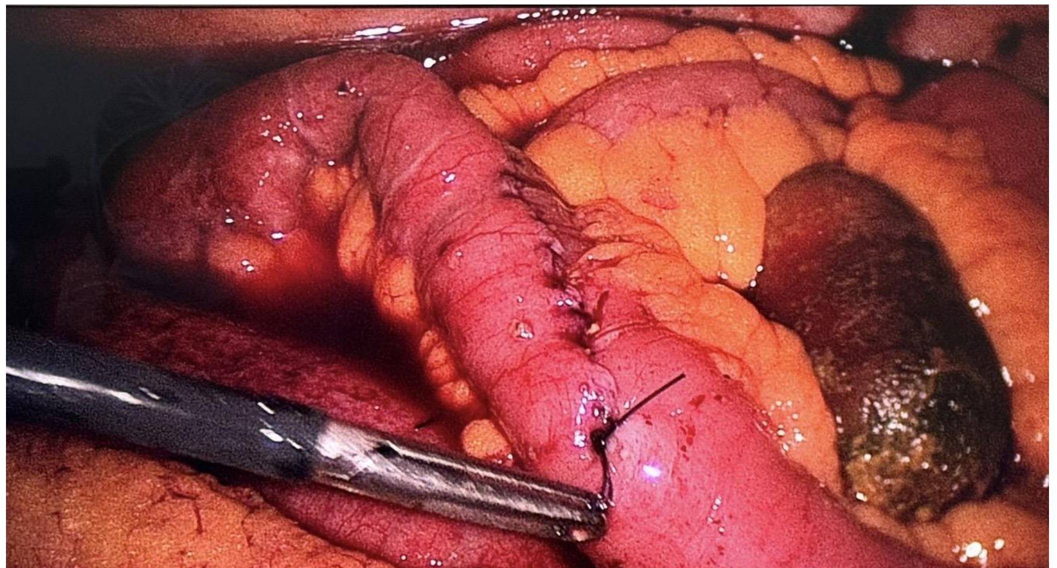


Figure 4. Imagem intraoperatória evidenciando rafia primária da enterotomia em alça de intestino delgado após extração do cálculo biliar ectópico.



After surgery, the patient was transferred to the ICU extubated and without the need for vasoactive drugs, remaining there for two days for hemodynamic stabilization, with no requirement for prolonged intubation or vasopressor support. During the first two days in the ICU, she remained stable but presented episodes of hypertension, tachycardia, and signs of hypovolemia, which were managed by the intensive care team. On the second postoperative day, a restricted liquid diet was initiated, with gradual progression to a regular diet by the fifth day, without complications. Antibiotic therapy (ceftriaxone and metronidazole) was discontinued on the sixth postoperative day, with maintained clinical and laboratory stability. Additionally, the patient showed improvement in diarrhea in the postoperative period.

The patient was discharged on the eighth postoperative day after optimization of medications for heart failure management by the cardiology team. During initial outpatient follow-up, one month after hospital discharge, the patient remained asymptomatic, with good dietary tolerance and normalization of bowel habits. Diarrhea completely resolved after the surgical procedure, reinforcing the relationship between the initial clinical presentation and the biliodigestive pathology. Outpatient follow-up was scheduled with the digestive surgery team for clinical monitoring of the cholecystoduodenal fistula and evaluation of the need for delayed surgical intervention. The patient was followed for six months, remaining asymptomatic and without new complications.

3. Discussion

Gallstone ileus results from the migration of a gallstone into the gastrointestinal tract through a biliodigestive fistula, usually formed due to chronic inflammation or ischemia of the gallbladder wall caused by pressure from the stone [1]. The cholecystoduodenal fistula is the most common, present in approximately 68% of cases, followed by cholecystocolonic and cholecystoduodenocolonic fistulas [2]. Once in the gastrointestinal tract, the stone may be spontaneously expelled or become impacted, causing obstruction, especially in narrow lumen regions such as the pylorus, terminal ileum, and ileocecal valve. Stone size is a critical factor: stones smaller than 2.5 cm tend to pass spontaneously, whereas larger ones are more likely to become impacted. Conditions such as diverticula, neoplasms, and strictures increase the risk of impaction, which may lead to complications such as ischemia, necrosis, perforation, and peritonitis [3]. When impacted, the ectopic gallstone may cause gastrointestinal obstruction in an acute, intermittent, or chronic manner. Abdominal pain occurs in 71% of cases and is frequently accompanied by nausea and vomiting (86%). Physical examination findings are usually nonspecific, with abdominal distension and signs of dehydration [3,6,7].

Unlike most reported cases, which are characterized by intestinal obstruction, the highlight of this case was the presentation with acute diarrhea, initially suggestive of gastroenteritis. With this differential diagnosis in mind, stool tests were requested from the first day of hospitalization; however, the patient did not provide a sample. Despite empirical antibiotic therapy, there was no improvement in diarrhea. In this context, imaging studies such as computed tomography and magnetic resonance cholangiopancreatography were crucial for diagnosis. MRCP demonstrated Rigler's triad: aerobilia, signs of proximal jejunal obstruction, and a 5 cm ectopic gallstone in the distal jejunum. These findings, described as pathognomonic of gallstone ileus since 1941, enabled accurate diagnosis [3,6,8]. Three case reports of gallstone ileus presenting with diarrhea were identified in PubMed and SciELO over the past 20 years, all associated with cholecystocolonic or cholecystoduodenal fistulas [9–11]. In the present case, magnetic resonance imaging identified a cholecystoduodenal fistula, the most common route for stone passage, and contact with the ascending colon without clear evidence of fistulous communication.

Treatment primarily consists of relieving intestinal obstruction by removing the ectopic stone through enterolithotomy. In some cases, resection of the affected bowel segment is necessary due to signs of ischemia or necrosis. The surgical approach may be performed in a single stage, including cholecystectomy and fistula repair, or in two stages, deferring these procedures. The one-stage approach remains controversial and is associated with a higher risk of postoperative complications, particularly in high-risk patients. In most reported cases, stone extraction is performed via laparotomy [6,12]. The laparoscopic approach is not yet widely adopted but has shown favorable outcomes in selected low-risk patients [13–17].

The decision to perform isolated enterolithotomy in this patient was based on her clinical condition, including multiple comorbidities and an ASA III classification. In elderly or high-risk patients, several studies suggest that isolated enterolithotomy is associated with lower morbidity and mortality compared to a one-stage procedure including cholecystectomy and fistula repair [18,19]. Additionally, the patient experienced transient

hemodynamic instability during anesthetic induction, further supporting the decision to limit the procedure to relief of intestinal obstruction. The literature indicates that most biliodigestive fistulas may remain asymptomatic after resolution of the obstruction, allowing for conservative management with clinical follow-up [18,19].

The laparoscopic enterolithotomy resulted in early recovery and reduced postoperative complications. Cholecystectomy was deferred due to the patient's high surgical risk, with outpatient follow-up planned to monitor symptom recurrence. The need for delayed cholecystectomy depends on the persistence of cholelithiasis-related symptoms, and conservative management with elective surgery may be considered when symptoms persist [18,19]. The complete resolution of diarrhea after removal of the ectopic stone strongly suggests that the initial symptom was related to the pathophysiology of gallstone ileus. The abnormal passage of bile directly into the intestine through biliodigestive fistulas may alter intestinal transit and trigger diarrhea, a phenomenon mainly described in cases associated with cholecystocolonic or cholecystoduodenal fistulas. Although rare, this mechanism should be considered in patients with nonspecific gastrointestinal symptoms and a history of cholelithiasis [20].

During postoperative outpatient follow-up, the patient did not report symptoms related to cholelithiasis. In this context, the team opted not to perform surgical treatment of the gallbladder or the cholecystoduodenal fistula, maintaining clinical follow-up. Over six months, the patient remained asymptomatic, with no new abdominal complaints, supporting the decision for conservative management.

4. Conclusion

This case report aims to highlight that, in some cases, gallstone ileus may present with diarrhea in the absence of intestinal obstruction, emphasizing the importance of complementary diagnostic tests and a high index of clinical suspicion, particularly in elderly women with a prior history of cholelithiasis who frequently seek medical care for biliary complaints. Furthermore, this case underscores the effectiveness and safety of laparoscopic management in the individualized treatment of this condition, especially in patients with significant comorbidities, with removal of the ectopic stone being the primary therapeutic goal.

Funding: None.

Research Ethics Committee Approval: The patient provided written informed consent to participate, and the study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Acknowledgments: None.

Conflicts of Interest: All other authors declare no conflicts of interest.

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