

Case Report

Intestinal Obstruction from Gallstone Ileus: Radiographic Findings and a Case Report

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Received: 18.09.2025

Accepted: 13.11.2025

Published: 17.11.2025

Journal homepage:<https://www.easpublisher.com>**Quick Response Code**

Abstract: Gallstone ileus is a mechanical intestinal obstruction caused by passage of a large gallstone from the gallbladder into the gastrointestinal tract through a biliary-enteric fistula. Gallstone ileus is rare and accounts for less than 1% of intestinal obstruction. This is a 45-year-old man referred from a peripheral health facility for abdominal radiograph on account of sudden onset of abdominal distension, vomiting, restlessness, fever and weakness. The radiograph done in erect and supine views revealed a distended abdomen with extensive ground-glass appearance, paucity of bowel gas shadow with few air-fluid level, lucency around the region of the gall bladder (pneumobilia) and two near oval calcific density opacities above and lateral to the outline of the upper lobe of the right kidney, these opacities were noted to have descended inferiorly on the supine view; these are the Rigler's triad of gallstone ileus. A diagnosis of intestinal obstruction following gallstone ileus was made; the relations were advised to meet a surgeon for expertise management to save the life of the patient. We present a case of gallstone ileus with intestinal obstruction and perforation due to its rare nature and peculiar presentation.

Keywords: Intestine, Obstruction, Gallstone, Radiograph.

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INTRODUCTION

Gallstone ileus is a rare disease and accounts for about 1-4% of all cases of mechanical intestinal obstruction [1]. This has an incidence of about 30-50 cases/1000000 admissions over a forty-five year period and develops in 0.3-0.5% of patients with cholelithiasis [2-4].

Gallstone ileus is regarded as a rear and consequently serious complications of cholelithiasis, and appears more prevalent in females with a ratio of about 3.5-6.0:1 in favour of the female gender and about 25% of cases are seen in patients over 65-years of age [1-7].

Gallstone disease is symptomatic in about 20-30% of subjects, with biliary colic being the most frequent symptom, and associated with common complications which include acute cholecystitis, acute pancreatitis, choledocholithiasis with or without cholangitis and gangrenous gallbladder [1-8].

Gallstones enters the gastrointestinal tract through a fistulous tract (bilioenteric) between the gallbladder and duodenum in about 60% of cases [9, 10].

The presentation is often nonspecific and can be intermittent due to descend of the stone along the gastrointestinal tract [9-11].

The diagnosis of gallstone ileus is challenging, and most often half of the cases the diagnosis is intraoperative. The classical findings of pneumobilia, intestinal obstruction and changing gallstone location which are regarded as Rigler's triad are important plain radiographic findings; the presence of two of these signs is regarded as pathognomonic and seen in about 40-50% of cases [12, 13].

Gallstone ileus is associated with a high mortality rate of about 12-17%, this is most likely from delayed diagnosis due to non-specific symptoms, associated comorbidities and advanced age of the affected subjects [12-14].

Regarding gallstone ileus, treatment is often challenging but mainly surgical, this could either be a one-stage procedure or a two stage procedure [12]. The one-stage procedure involves enterolithotomy along with cholecystectomy and closure of the bilioenteric fistula,

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the two-stage procedure involves initial enterolithotomy to relieve the intestinal obstruction, subsequently a repair of the bilioenteric fistula in another surgery [12].

CASE REPORT

This is a 45-year-old man referred from a peripheral health facility for abdominal radiograph on account of sudden onset of abdominal distension, vomiting, restlessness, fever and weakness. The radiograph done in erect and supine views revealed a distended abdomen with extensive ground-glass appearance, paucity of bowel gas shadow with few air-fluid level, lucency around the region of the gall bladder (pneumobilia) and two near oval calcific density opacities above and lateral to the outline of the upper lobe of the right kidney, these opacities were noted to

have descended inferiorly on the supine view; these are the components of the Rigler's triad of gallstone ileus (seen in figure 1).

Complementary ultrasonography demonstrated fluid filled and distended bowel loops with turbid free intraperitoneal fluid with a thick-walled and contracted gallbladder.

A diagnosis of intestinal obstruction following gallstone ileus was made; the relations were advised to meet a surgeon for expertise management to save the life of the patient.

We present a case of gallstone ileus with intestinal obstruction and perforation due to its rare nature and peculiar presentation.

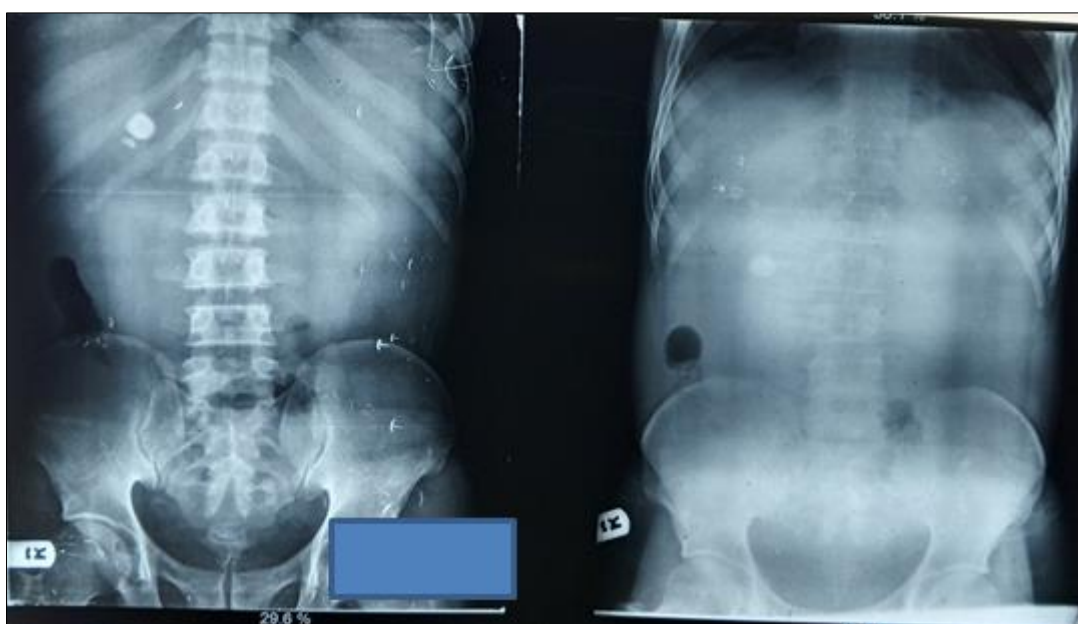


Figure 1: Plain radiographs of the abdomen demonstrating lucency along the gallbladder region; pneumobilia, two-oval opacities of calcific density above and lateral to the shadow of the upper lobe of the right kidney; gallstones (image on the left), these are noted to descend inferiorly changing location on the right image, ground-glass opacity with paucity of bowel loops raising a suspicion of bowel perforation. These features are components of the Rigler's triad of gallstone ileus

DISCUSSION

Gallstone ileus is regarded as a rare and consequently serious complications of cholelithiasis, and appears more prevalent in females with a ratio of about 3.5-6.0:1 in favour of the female gender and about 25% of cases are seen in patients over 65-years of age [1-7]. The patient under review has features suspicious of cholelithiasis, a male and about 45-years of age.

Gallstone disease is symptomatic in about 20-30% of subjects, with biliary colic being the most frequent symptom, and associated with common complications which include acute cholecystitis, acute pancreatitis, choledocholithiasis with or without cholangitis and gangrenous gallbladder [1-8]. The

patient under review presented with some symptoms, some of which were vomiting, right hypochondrial pain, restlessness and tachycardia, he also had features of acute cholecystitis following complementary ultrasonography, thereby agreeing with these literatures.

Gallstones enter the gastrointestinal tract through a fistulous tract (bilioenteric) between the gallbladder and duodenum in about 60% of cases [9, 10]. The case under review may also have a similar recurrence with the gallstones seen changing position and descending most likely from a bilioenteric fistula, thereby conforming to these literatures.

The classical findings of pneumobilia, intestinal obstruction and changing gallstone location which are

regarded as Rigler's triad are important plain radiographic findings; the presence of two of these signs is regarded as pathognomonic and seen in about 40-50% of cases [12, 13]. The case under review had plain abdominal radiographs following which all the components of Rigler's triad; gallstones and changing location, pneumobilia and features of intestinal obstruction with perforation were demonstrated, thereby conforming to these literatures.

Gallstone ileus is associated with a high mortality rate of about 12-17%, this is most likely from delayed diagnosis due to non-specific symptoms, associated comorbidities and advanced age of the affected subjects [12-14]. The case under review was diagnosed promptly due to the presenting symptoms and plain radiographic findings and had no associated comorbidity, and also within the middle age group; 45-year-old.

Regarding gallstone ileus, treatment is often challenging but mainly surgical, this could either be a one-stage procedure or a two stage procedure [12]. The case presented will also have a surgical management to relieve the intestinal obstruction, close the bilioenteric fistula and remove the gallstones (advised to see the surgeon/gastroenterologist as at the time of this report).

CONCLUSION

Plain abdominal radiographs with clinical evaluation are important in demonstrating the components of Rigler's triad in suspected cases of gallstone ileus, thereby aiding in prompt diagnosis to reduce associated morbidities and mortality in these patients.

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Cite This Article: Shamaki AMB, Sule MB, Erinle SA, Gele IH, Shafiu H (2025). Intestinal Obstruction from Gallstone Ileus: Radiographic Findings and a Case Report. *EAS J Radiol Imaging Technol*, 7(6), 199-201.
