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Gallstone Ileus in A Young Male: A Rare Case of Small Bowel Obstruction

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ABSTRAK

Pendahuluan: Ileus batu empedu merupakan penyebab obstruksi usus halus yang jarang namun penting, hanya mencakup 1–4% dari seluruh kasus dan biasanya terjadi pada wanita lanjut usia. Presentasi klinis yang tidak spesifik dan sensitivitas terbatas dari pemeriksaan pencitraan rutin seringkali menyebabkan keterlambatan diagnosis, sehingga meningkatkan morbiditas dan mortalitas.
Presentasi Kasus: Kami melaporkan kasus seorang pria berusia 38 tahun tanpa riwayat penyakit bilier yang diketahui, yang datang dengan distensi abdomen, konstipasi, dan nyeri epigastrium. Foto polos abdomen menunjukkan tanda-tanda obstruksi usus halus, sementara laparotomi eksplorasi memastikan diagnosis ileus batu empedu dengan ditemukannya dua batu empedu besar yang menyumbat ileum. Laparotomi yang berhasil mengatasi obstruksi, dan pasien menjalani pemulihan pascaoperasi tanpa masalah.
Kesimpulan: Laporan ini menekankan bahwa pengenalan dini dan intervensi bedah yang tepat tetap menjadi kunci untuk mengurangi morbiditas dan mortalitas, dan pentingnya mempertimbangkan ileus batu empedu dalam diagnosis banding obstruksi usus bahkan pada pasien muda.

Kata Kunci: gallstone ileus; small bowel obstruction; case report

ABSTRACT

Introduction: *Gallstone ileus is a rare but important cause of small bowel obstruction, accounting for only 1–4% of all cases and typically occurring in elderly women. The nonspecific clinical presentation and limited sensitivity of routine imaging studies often lead to delayed diagnosis, increasing morbidity and mortality.*
Case Presentation: *We report the case of a 38-year-old man without known history of biliary disease who presented with abdominal distension, constipation, and epigastric pain. A plain abdominal radiograph revealed signs of small bowel obstruction, while an exploratory laparotomy confirmed the diagnosis of gallstone ileus with the discovery of two large gallstones obstructing the ileum. A successful laparotomy relieved the obstruction, and the patient made an uneventful postoperative recovery.*
Conclusion: *This report emphasizes that early recognition and appropriate surgical intervention remain key to reducing morbidity and mortality, and the importance of considering gallstone ileus in the differential diagnosis of intestinal obstruction even in young patients.*

Keywords: gallstone ileus; small bowel obstruction; case report

INTRODUCTION

Gallstone ileus (GI) is a very rare cause of intestinal obstruction, accounting for only about 1 - 4% of all cases of obstructive ileus (Jakubauskas et al., 2019). This condition usually occurs due to the formation of a cholecystoduodenal fistula which allows gallstones to enter the intestinal lumen and

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cause obstruction (Nuño-Guzmán et al., 2016). Epidemiologically, GI usually occurs in elderly women over 65 years of age (De et al., 2018). Diagnosis is challenging because the clinical symptoms are less specific and the radiological picture of Rigler's triad is not always visible (González-Robles et al., 2024). Therefore, diagnosis is often late and results in mortality rates reaching 30% (Elghazar et al., 2025). Here we report a rare case of GI in a 38-year-old man with the aim to emphasize the importance of considering a GI diagnosis in patients with small bowel obstruction (SBO) even without classic risk factors.

CASE PRESENTATION

A 38-year-old man presented to the hospital emergency department in September 2024 with a chief complaint of abdominal bloating. The patient stated that the bloating had been present for two days prior to hospitalisation. He also reported difficulty passing gas and defecating as his last flatus was 12 hours prior to hospitalisation, and his last bowel movement occurred two days prior to hospitalisation. He had been experiencing intermittent heartburn for two months. He had sought treatment at the clinic, but his symptoms did not improve. He had also experienced nausea but no vomiting since two days prior to admission. The patient denied any history of diseases such as hypertension, diabetes mellitus, chronic lung disease, chronic kidney disease, liver disease, gastrointestinal disease, biliary disease, heart disease, stroke, cancer, and other systemic diseases. This case report clearly documents that informed consent was obtained from the patient.

Examination of the patient's vital signs showed blood pressure of 146/80 mmHg, pulse rate of 81 beats per minute without pulsus deficit, body temperature of 36.5 degrees Celsius, respiratory rate of 24 times per minute, oxygen saturation of 98% and visual analog scale of 5. From the patient's physical examination, it was found that the abdominal region appeared distended accompanied by visible indentations (darm contour) and intestinal peristaltic movements (darm steifung).

On auscultation, increased bowel sounds were heard accompanied by metallic sound. His abdomen felt tense with tenderness around the epigastric region. Following a radiological evaluation using a simple BNO 3-position radiograph, a radiological picture of SBO was acquired

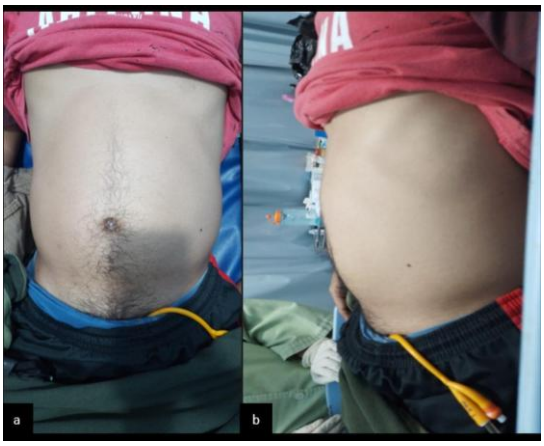


Figure 1. (a) Superior view revealing abdominal distension and (b) Left lateral view revealing abdominal distention.

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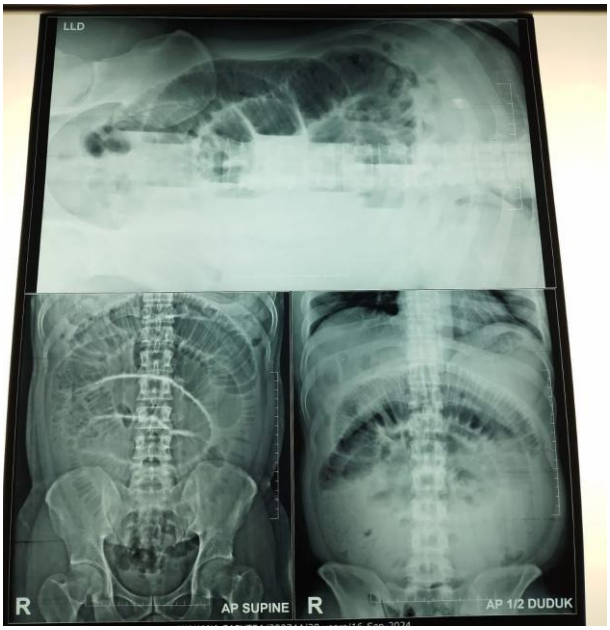


Figure 2. BNO 3-position (supine, left lateral decubitus, semi-erect) plain radiography revealing small bowel dilation suggesting an obstruction.

The patient then underwent initial management for SBO. He was fasted, rehydrated with crystalloid fluid, and given pharmacological therapies in the form of a 2 gram ceftriaxone injection, 1 ampule of lansoprazole injection, and 30 mg of ketorolac injection. He was given a nasogastric tube for bowel decompression and a urinary catheter was placed to evaluate urine output. He was then planned to undergo an exploratory laparotomy procedure.

Exploratory laparotomy revealed a mobile, hard intraluminal mass measuring approximately 6 x 5 x 4 cm, located 60 cm from the ileocecal junction. Dilation of the jejunum and proximal ileum was found with a bluish-red color. A transverse ileal incision was performed above the mass and two gallstones, measuring 5 x 4 x 3 cm and 2 x 2 x 2 cm, were found to be hard and smooth with a greenish-brown colour.

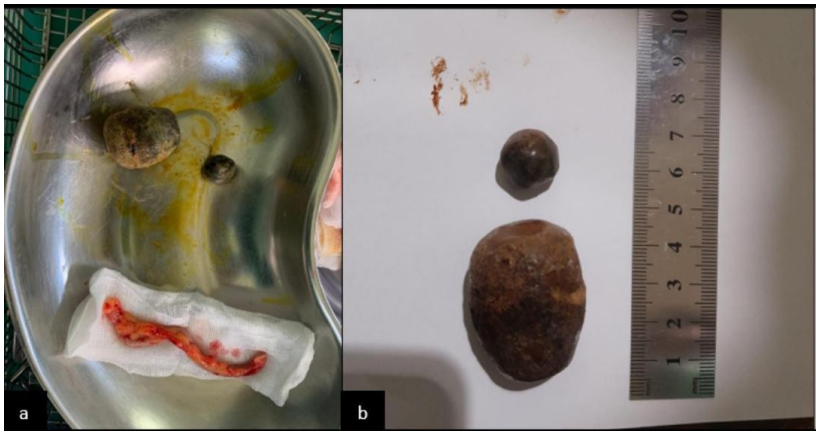


Figure 3. (a) Gallstone with greenish-brown colour and (b) Gallstone measuring 5 x 4 x 3 cm and 2 x 2 x 2 cm

After the exploratory laparotomy procedure was completed, the patient was hospitalised for post-operative evaluation and was scheduled for endoscopic retrograde cholangiopancreatography (ERCP) or magnetic resonance cholangiopancreatography (MRCP) 2-3 months after surgery. Informed consent was obtained from the patient prior to writing this case report.

DISCUSSION

SBO is one of surgical emergency cases which accounts for about a half of emergency laparotomies with in-high hospital cost and morbidity (Amara et al., 2021). Post-operative or inflammatory adhesive disease, malignancy, and herniation are the most common causes of SBO (Detz et al., 2021). Among many other causes, mechanical intestinal blockage due to impaction of one or more gallstones within the gastrointestinal system can also lead to SBO. This rare condition is known as GI2. The main mechanism leading to GI is the formation of biliary-enteric fistula. An erosion of biliary wall triggered by gallstones leads to the formation of fistula. This fistulous connection between the necrotic gallbladder and the digestive tract allows gallstones to pass into the intestine. The common locations of gallstone impaction are ileocecal valve and terminal ileum owing to their anatomical characteristics (Kishimoto et al., 2021; Gaikwad & Marathe, 2023; Madrid et al., 2023). The majority of impacted gallstones are cholesterol-type and measure about 4 cm, falling within the minimum 2,5 cm range that is thought to be impaction prone (Inukai, 2019). The location of the gallstones found in this case is in line with the theory, approximately 60 cm proximal to the ileocecal junction. However, the size of the gallstones found was larger than the average size.

From a diagnostic perspective, abdominal computed tomography scan is currently considered the imaging modality of choice with a sensitivity and specificity of 93% and 100%, respectively, as it is able to demonstrate the location of obstruction, the size and number of stones, and the presence of bilioenteric fistula (Beji et al., 2023). In contrast, plain abdominal radiography has a lower sensitivity and generally only shows signs of SBO without detecting ectopic gallstones (Chang et al., 2018). Therefore, the diagnosis is often made during surgical exploration. In this case, the initial diagnosis of small bowel obstruction was made on a 3-position BNO radiograph, while the definitive diagnosis of GI was confirmed intraoperatively. This illustrates a real challenge in clinical practice, especially in facilities with limited access to advanced imaging.

The principles of initial GI management in this case are in accordance with the principles of SBO management in general, namely bowel rest, intravenous fluid rehydration, and nasogastric tube placement for decompression (Klingbeil et al., 2023). The definitive management of GI patients is gallstone extraction which can be done by several surgical approaches such as single enterolithotomy or laparotomy, one-stage surgery consisting of enterolithotomy, cholecystectomy, and closure of fistula; and two-stage surgery which consists of enterolithotomy and cholecystectomy with closure of fistula after about a month. Recent evidence suggests that enterolithotomy alone has lower mortality and morbidity, especially in patients with acute conditions or high surgical risk (Vera-Mansilla et al., 2022). In this case, laparotomy through an ileal incision successfully removed two large stones and resolved the obstruction, in accordance with evidence-based recommendations for acute situations.

The interesting aspect of this case is the unusual patient profile: a 38-year-old male without classic risk factors, and the presence of two large intraluminal stones, one greater than 4 cm in diameter, which significantly increases the risk of complete obstruction. The patient had an uncomplicated postoperative course and is scheduled for further evaluation using ERCP or MRCP to assess for residual bilioenteric fistula, in line with current literature recommendations for staged management. Thus, this report adds to the evidence that GI, although rare and associated with the elderly population, can also occur in young patients without typical risk factors. Awareness of this atypical presentation is crucial to prevent delays in diagnosis, enable timely surgical intervention, and reduce morbidity and mortality. Furthermore, this case also highlights the importance of a healthy lifestyle to prevent cholelithiasis, which can potentially lead to GI. Regular physical activity is known to reduce the risk of gallstone formation (Ye et al., 2024). Conversely, a higher body mass index is associated with an increased risk of gallstone formation (Baddam et al., 2023). Therefore, maintaining an ideal body weight is important.

CONCLUSION

GI is a rare cause of intestinal obstruction that typically occurs in elderly women. This case of a 38-year-old man demonstrates the possibility of presentations outside the classic risk group. Exploratory laparotomy successfully relieved the obstruction and underscores the importance of considering a GI diagnosis in patients with obstructive ileus.

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