Bosphorus Medical Journal
Boğaziçi Tıp Dergisi

Case Report

DOI: 10.14744/bmj.2025.20591

Bosphorus Med J 2025;12(1):29–31

Gallstone Ileus: A Case Report

Safra Taşı İleusu: Vaka Sunumu

Süleyman Atalay, Adem Akçakaya

ABSTRACT

Gallstone ileus is a rare cause of mechanical ileus that often presents with delayed symptoms and nonspecific features. It should be considered in patients with chronic cholecystolithiasis presenting with symptoms of mechanical obstruction. Surgical removal of the gallstone to relieve intestinal blockage—typically resulting from a cholecystoduodenal fistula—is the mainstay of treatment. A 60-year-old man with a four-year history of cholecystolithiasis presented with signs of mechanical intestinal obstruction. Abdominal computed tomography (CT) imaging revealed a cholecystoduodenal fistula and small bowel obstruction suggestive of gallstone ileus. The patient underwent laparotomy. Cholecystectomy, cholecystoduodenal fistula repair, and gallstone removal by enterotomy were performed. The patient was discharged on the seventh postoperative day without complications.

Keywords: Cholecystoduodenal fistula; cholecystolithiasis; gallstone; ileus.

ÖZET

Safra taşı ileusu, genellikle gecikmiş prezentasyon ve nonspesifik semptomlarla seyreden nadir bir mekanik ileus nedenidir. Mekanik ileus semptomlarıyla başvuran kronik kolesistolitiyazisli hastalarda akılda bulundurulmalıdır. Tipik olarak kolesistoduodenal fistül oluşumuna bağlı gelişen bağırsak tıkanıklığını gidermek amacıyla safra taşının cerrahi olarak çıkarılması, tedavinin temelini oluşturur. Dört yıllık kolesistolitiyazis öyküsü olan 60 yaşındaki erkek hasta, mekanik bağırsak tıkanıklığı belirtileriyle başvurdu. Abdominal görüntülemede kolesistoduodenal fistül ve safra taşı ileusunu düşündüren ince bağırsak obstrüksiyonu saptandı. Hastaya laparotomi uygulandı. Kolesistektomi, kolesistoduodenal fistül onarımı ve enterotomi ile safra taşı çıkarılması gerçekleştirildi. Hasta, postoperatif yedinci günde sorunsuz bir şekilde taburcu edildi.

Anahtar sözcükler: Kolesistoduodenal fistül; kolesistolitiyazis; safra taşı; ileus.

Gallstone ileus is a mechanical intestinal obstruction, a rare complication of chronic cholecystolithiasis.[1] It occurs when a stone in the gallbladder passes into the small intestine through a fistula formed between the gallbladder and duodenum, obstructing the intestinal lumen. It is frequently observed in elderly patients.[2] Gallstone ileus should be suspected in patients with chronic cholecystolithiasis and signs of mechanical intestinal obstruction. In this study, we present a case of gallstone ileus in a patient who had a known gallbladder stone for four years, and underwent gallstone removal by enterotomy, cholecystectomy, and cholecystoduodenal fistula repair.

Case Report

A 60-year-old male patient presented with complaints of abdominal pain for four days, inability to pass gas, inability to defecate, and nausea and vomiting for one day. It was learnt that the patient, who had a known gallbladder stone for four years, was followed up incidentally but did not continue follow-up due to the absence of biliary symptoms. The patient, who had not undergone abdominal surgery before, was haemodynamically stable and afebrile. On examination, abdominal distension and tenderness were present. There was no defense and rebound.

Department of General Surgery, Bezmialem Vakif University Faculty of Medicine, Istanbul, Türkiye

Cite this article as: Atalay S, Akçakaya A. Gallstone Ileus: A Case Report. Bosphorus Med J 2025;12(1):29–31.

Received: 03.06.2024
Revision: 09.01.2025
Accepted: 29.01.2025

Correspondence:
Dr. Süleyman Atalay.
Department of General Surgery, Bezmialem Vakif University Faculty of Medicine, Istanbul, Türkiye
Phone:
+90 532 164 80 63
e-mail:
sulleymanatalaymd@gmail.com

Laboratory tests revealed white blood cell: 13410/mm³, c-reactive protein: 5.18 mg/dL, aspartate aminotransferase: 90 IU/L, alanine aminotransferase: 203 IU/L, amylase: 178 U/L, lipase: 132 U/L. The patient received intravenous fluid replacement, and a nasogastric tube was inserted for decompression. Abdominal CT showed a radioopaque stone causing obstruction in the distal ileal segment and a cholecystoduodenal fistula (Figs. 1, 2).

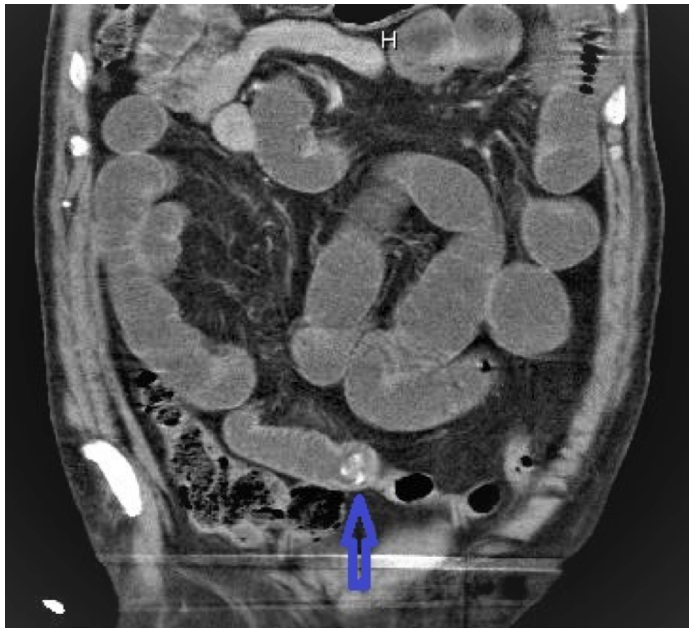

Figure 1. Gallstone obstructing the lumen of the terminal ileum.

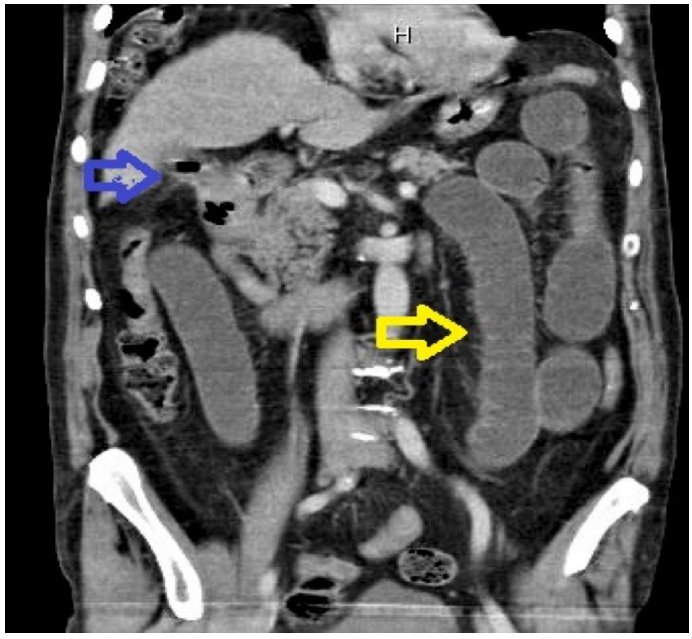

Figure 2. Blue arrow: air image in the biliary tract. Yellow arrow: ileus pattern.

The patient underwent laparotomy. Exploration revealed a fistula between the gallbladder and duodenum and small bowel obstruction due to a gallstone obstructing the lumen 60 cm proximal to the ileocecal valve. Cholecystectomy was performed, and the fistula tract between the gallbladder and duodenum was disrupted. The defect, approximately 2 cm in dimension, in the duodenum was closed with 3/0 PDS sutures. Omentoplasty was performed on the suture line.

Subsequently, a longitudinal enterotomy was performed proximal to the gallstone trapped in the distal ileum (Fig. 3). An approximately 4 cm gallstone was removed. The enterotomy was closed transversely with 3/0 PDS sutures. The postoperative period was uneventful, and the patient was discharged on the seventh postoperative day.

Written and verbal informed consent was obtained from the patient for the publication of this case report.

Discussion

Gallstone ileus is a rare type of mechanical intestinal obstruction that may cause morbidity and mortality. It constitutes approximately 5% of mechanical intestinal obstructions.[3] It is mostly observed in elderly and female patients. Adhesions are usually formed between the gallbladder and neighboring organs after chronic pericholecystic inflammation in most cases. This adhesion leading to gallstone ileus usually occurs between the gallbladder and duodenum.[4] A fistula develops between these two organs as a result of

Figure 3. Gallstone in the lumen after enterotomy.

the erosion of the gallbladder and duodenal walls due to the pressure exerted by the gallstone. This biliary-enteric fistula allows the passage of gallstones into the gastrointestinal system. Thus, cholecystolithiasis becomes complicated.[5]

The gallbladder stone, which has passed into the gastrointestinal system, is mostly stuck in the distal part of the ileum and causes a mechanical intestinal obstruction by preventing the distal passage of intestinal contents. Although gallstones are mostly located in the ileum, they may also be located in the jejunum, stomach, and duodenum with decreasing frequency.[6] As reported, gallbladder stones with a diameter of more than 2 cm are more likely to cause this condition.[7]

Clinically, it is similar to other causes of mechanical intestinal obstruction. In other words, nausea, vomiting, abdominal distension, pain, and increased bowel sounds are observed in mechanical intestinal obstruction due to gallstones.[8] However, in gallstone ileus, the so-called "rolling phenomenon" may be observed, in which the gallstone gets stuck, causing symptoms, then progresses by moving, resulting in alleviation of the complaints, and then gets stuck again, causing recurrence of the complaints. This situation causes patients to be admitted to the hospital later. This condition should be suspected in patients who present with these complaints and have a history of gallstones.[9]

Intestinal obstruction, pneumobilia, and gallstone findings in the intestinal lumen on imaging suggestive of gallstone ileus are called Rigler's triad and are very helpful in the diagnosis. Abdominal CT is considered the gold standard for detecting these findings.[10]

As in every mechanical ileus, the aim of treatment in gallstone ileus is to eliminate the cause of obstruction and relieve the obstruction. The repair of the cholecystoduodenal fistula, which allows the stone to pass into the intestine causing obstruction, is controversial. Two options are considered: the first is cholecystoduodenal fistula repair and removal of the gallstone with enterotomy in the same session, and the second is gradual removal of the gallstone with enterotomy and repair of the cholecystoduodenal fistula in a subsequent session. Both procedures have their own complications. One of the procedures can be selected according to the case.[11]

Under the selected strategy, cholecystoduodenal fistula repair and enterotomy with gallstone removal were performed. Firstly, enterotomy was performed proximal to the obstruction, and the gallstone was removed from the intestine. Afterwards, cholecystectomy was performed, and the fistula was separated. The defect in the duodenum was cleaned and closed, and omentoplasty was performed.

Conclusion

Gallstone ileus is a rare cause of mechanical intestinal obstruction. Gallstone ileus should be suspected in patients with known gallstone disease who present with signs of intestinal obstruction.

Disclosures

Ethics Committee Approval: This is a single case report, and therefore ethics committee approval was not required in accordance with institutional policies.
Informed Consent: Written and verbal informed consent was obtained from the patient for the publication of this case report.
Conflict of Interest: The authors declare that there is no conflict of interest.
Funding: The authors declared that this study has received no financial support.
Use of AI for Writing Assistance: Artificial intelligence was not used in the process of writing the article.
Authorship Contributions: Concept – S.A., A.A.; Design – S.A.; Supervision – A.A.; Resources – A.A.; Materials – S.A.; Data collection &/or processing – S.A.; Analysis and/or interpretation – S.A.; Literature search – S.A.; Writing – S.A.; Critical review – A.A.
Peer-review: Externally peer-reviewed.

References

1. Morosin T, De Robles MSB, Putnis S. Gallstone ileus: An unusual cause of intestinal obstruction. Cureus 2020;12:e7284.
2. Fox PF. Planning the operation for cholecystoenteric fistula with gallstone ileus. Surg Clin North Am 1970;50:93–102.
3. Reisner RM, Cohen JR. Gallstone ileus: A review of 1001 reported cases. Am Surg 1994;60:441–6.
4. Stagnitti F, Tudisco A, Ceci F, Nicodemi S, Orsini S, Avallone M, et al. Biliodigestive fistulae and gallstone ileus: Diagnostic and therapeutic considerations. Our experience. G Chir 2014;35:235–8.
5. Dunphy L, Al-Shoek I. Gallstone ileus managed with enterolithotomy. BMJ Case Rep 2019;12:e231581.
6. Perumal S. Gall stone ileus—a rare cause of intestinal obstruction: A case report and review of literature. Int Surg J 2017;4:1484–6.
7. Ayantunde AA, Agrawal A. Gallstone ileus: Diagnosis and management. World J Surg 2007;31:1292–7.
8. Rodriguez JER, Teixeira AEDLM, Siqueira VR, de Siqueira Filho JT, Pereira MAS, da Cunha DGC. Gallstone ileus associated with cholecystogastric fistula: Case report, diagnosis and surgical treatment. Int J Surg Case Rep 2021;86:106328.
9. Abich E, Glotzer D, Murphy E. Gallstone ileus: An unlikely cause of mechanical small bowel obstruction. Case Rep Gastroenterol 2017;11:389–95.
10. Gungor F, Atalay Y, Acar N, Gur EO, Kokulu I, Acar T, et al. Clinical outcome of gallstone ileus; A single-centre experience of case series and review of the literature. Acta Chir Belg. 2022;122:7–14.
11. Dai XZ, Li GQ, Zhang F, Wang XH, Zhang CY. Gallstone ileus: Case report and literature review. World J Gastroenterol 2013;19:5586–9.