

6-28-2019

Gallstone Ileus in Cipto Mangunkusumo General Hospital, Jakarta: A Case Series

Toar JM Lalisang

Division of Digestive Surgery, Faculty of Medicine, Universitas Indonesia, dr.Cipto Mangunkusumo General Hospital Jakarta., toar.m@ui.ac.id

Georgina P. Hehuwat

Training Program of Surgery, Department of Surgery, Faculty of Medicine, Universitas Indonesia, dr.Cipto Mangunkusumo General Hospital Jakarta.

Arnetta NL Lalisang

Training Program of Surgery, Department of Surgery, Faculty of Medicine, Universitas Indonesia, dr.Cipto Mangunkusumo General Hospital Jakarta.

Irfan K. Pratama

Department of Surgery, Faculty of Medicine, Universitas Indonesia, dr.Cipto Mangunkusumo General Hospital Jakarta.

Yarman Mazni

Division of Digestive Surgery, Faculty of Medicine, Universitas Indonesia, dr.Cipto Mangunkusumo General Hospital Jakarta.

Follow this and additional works at: <https://scholarhub.ui.ac.id/nrjs>

Recommended Citation

Lalisang, Toar JM; Hehuwat, Georgina P.; Lalisang, Arnetta NL; Pratama, Irfan K.; and Mazni, Yarman (2019) "Gallstone Ileus in Cipto Mangunkusumo General Hospital, Jakarta: A Case Series," *The New Ropanasuri Journal of Surgery*. Vol. 4 : No. 1 , Article 9.

DOI: 10.7454/nrjs.v4i1.86

Available at: <https://scholarhub.ui.ac.id/nrjs/vol4/iss1/9>

This Article is brought to you for free and open access by the Faculty of Medicine at UI Scholars Hub. It has been accepted for inclusion in The New Ropanasuri Journal of Surgery by an authorized editor of UI Scholars Hub.



Gallstone Ileus in Cipto Mangunkusumo General Hospital, Jakarta: A Case Series

Toar JM Lalisang,¹ Georgina P Hehuwat,² Arnetta NL Lalisang,² Irfan K Pratama,³ Yarman Mazni.¹

1) Division of Digestive Surgery, 2) Training Program of Surgery, 3) Department of Surgery, Faculty of Medicine, Universitas Indonesia, dr. Cipto Mangunkusumo General Hospital Jakarta.

Email: toar.m@ui.ac.id Received: 07/May/2019 Accepted: 26/Jun/2019 Published: 28/Jun/2019
<http://www.nrjs.ui.ac.id> DOI: <http://dx.doi.org/10.7454/nrjs.v4i1.86>

Abstract

Introduction. Gallstone ileus is an uncommon mechanical bowel obstruction caused by a gallstone in the gastrointestinal tract which enters due to bile-enteric fistulae. This study aims to describe gallstone ileus and its management.

Method. Data were retrospectively collected from medical records. Clinical manifestations, laboratory data, supporting radiographic examinations, treatment, postoperative care, and outcomes were collected.

Results. We report two gallstone ileus cases at Cipto Mangunkusumo General Hospital, Jakarta which admitted in the last 20 years. The first case was a woman 33 years in 2002 and the second was man 45 years in 2017. Ileus was the main clinical symptoms. Gallstone ileus was diagnosed with preoperatively based on clinical and radiology findings. Laparotomy was performed and ileostomy for stones evacuation and cholecystectomy were performed without bile-enteric fistula repair. Large black stones were found at terminal ileum which made the obstruction.

Conclusion. Gallstone ileus was an uncommon disease which can be treated and has a good prognosis. Plain abdominal x-ray has an important role in diagnosis and treatment approach.

Keywords: *gallstone, gallstone ileus, bile-enteric fistula*

Introduction

Gallstone ileus is an uncommon case, especially when diagnostic tools are available for early stones detection nowadays. The incidence is 1-4% of all ileus cases.^{1,4} It presents as mechanical bowel obstruction caused by a gallstone, which passes through the bile-enteric fistula and is trapped in the digestive tract between the stomach and rectum. Ileus presents because the gallstone obstructs the Bauhini valve. Since it is uncommon, only a few surgeons ever encountered this disease entity. This study is aimed to describe gallstone ileus and its management.

Case Illustrations

The first case was in 2002 and the second was in 2017. Bowel obstruction was the symptom in both cases and gallstone ileus was diagnosed preoperatively. Gallstone ileus was diagnosed preoperatively by plain abdominal x-ray.

Case 1

A female 33 years with a history of bilious vomitus, nausea, bloating, whole abdominal pain since a day before admission. She had a history of intermittent jaundice abdominal right upper abdominal pain a year before admission. The patient was admitted to a local hospital for a week. Gallstone was detected 1 year before admission by abdominal ultrasound (USG). On the physical examination abdominal distension, bowel contour, and movement were present. Laboratory findings were as follows: hemoglobin 10.5 g/dL,

hematocrit 31.4 %, white blood count 18,100 cells/uL, platelet 472,000 cells/uL, sodium 131.2 mEq/L, potassium 3.03 mEq/L, chloride 103.7 mEq/L, blood urea 19 mg/dL, creatinine 0.2 mg/dL, SGOT 16 U/L, SGPT 8 U/L, bleeding time 3 minutes, clotting time 11 min. Plain abdominal x-ray showing pneumobilia, no bowel dilatation, and no air distribution in the distal segment.

Preoperative diagnosis was ileus with a suspected intraabdominal tumor. Laparotomy was indicated and performed. A total of 50 mL of serous fluid found and suctioned. The proximal small intestine was found dilated, while the distal segment was found collapsed. A 3 cm sized gallstone found 100 cm oral from the Bauhini valve. Ileotomy was done a directly oral side of the gallstone and removal of the gallstone was done. A two-layered suture performed to close the ileotomy. Gallstone analysis showed the component of cholesterol, phosphate, and bile pigment. Postoperatively she was taken care in the intensive care unit for 2 days with total parenteral nutrition. Per-oral nutrition started on the 3rd postoperative day. The overall patient condition was good with GCS 15, good vital signs and operation wound. She discharged on a 10th postoperative day to the outpatient ward. The outpatient abdominal USG showed significantly reduced of gallbladder size, no gallbladder stone, contracted gallbladder. Two weeks after surgery, the patient's condition was good examined in the outpatient ward with good vital signs and good surgical wounds.

Case 2

Male of 45 years with abdominal pain, nausea, vomitus, and inability to flatus in the last 3 days before admission. No passing stools.

Physical examinations showing jaundice, abdominal distension, bowel contour, and movement were present, and right upper quadrant abdominal pain. Laboratory findings were as follows: hemoglobin 14.58g/dL, hematocrit 45.5%, white blood count 9,780 cells/uL, platelet 531,000 cells/uL, sodium 138.0 mEq/L, potassium 5.1 mEq/L, chloride 98.0 mEq/L, blood urea 32.4 mg/dL, creatinine 0.774 mg/dL, SGOT 25.8 U/L, SGPT 14.8 U/L, prothrombin time 1x, activated partial thromboplastin time 0.9x, random blood glucose 120 mg/dL, total bilirubin 2.73 mg/dL, direct bilirubin 0.2 mg/dL, indirect bilirubin 0.51 mg/dL. Plain abdominal x-ray showing obstructive ileus in the small intestine pattern. Magnetic Resonance Cholangiopancreatography (MRCP) showing choledocholithiasis with common bile duct, cyst duct, intrahepatic and extrahepatic biliary tract dilatation.

Preoperative diagnosis was mechanical intestinal obstruction caused by a gallstone. Laparotomy was performed. A total of 1,000 mL serous fluid found in the abdominal cavity. Intestinal dilatation was

observed from the ligament of Treitz up to 15 cm oral from the Bauhini valve. The distal part of the stone was collapsed. The Kocher maneuver was done, common bile duct dilatation was found, no stone nor tumor found. There gallbladder hydrops, cholecystectomy was done. Ileotomy was done a directly oral side of the obstruction. Gallstones sized 5 cm and 3 cm were found then removed. The ileotomy was sutured using the two-layered method.

The postoperative diagnosis was Ileus caused by a gallstone. He was admitted to the intensive care unit for 2 days with total parenteral nutrition. Oral intake started on the 3rd postoperative day. The overall patient condition was good with GCS 15, good vital signs and operation wound and discharged safely on a 9th postoperative day to the outpatient ward. Outpatient abdominal USG showed reduced gallbladder size, no gallbladder stone, contracted gallbladder. In two weeks after surgery, the patient's condition was good examined in the outpatient ward with good vital signs and good surgical wounds.

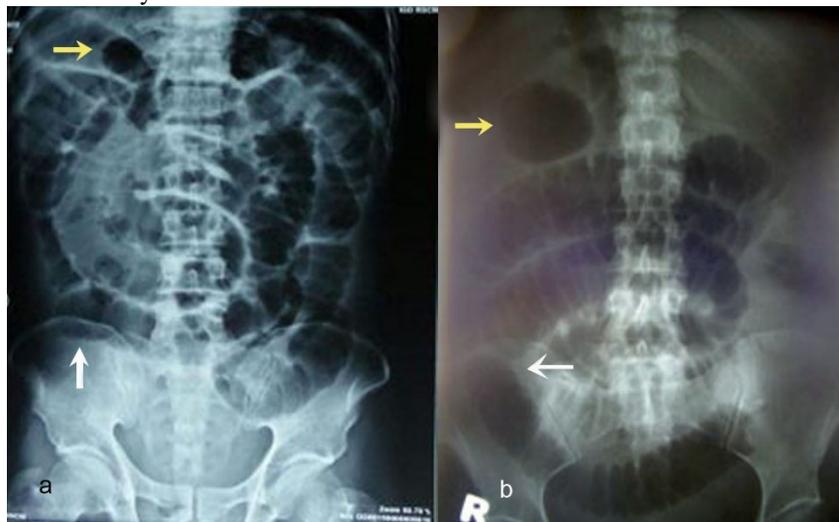


Figure 1. Abdominal plain x-ray showing pneumobilia (yellow arrow) and small bowel dilatation until terminal ileum (white arrows)

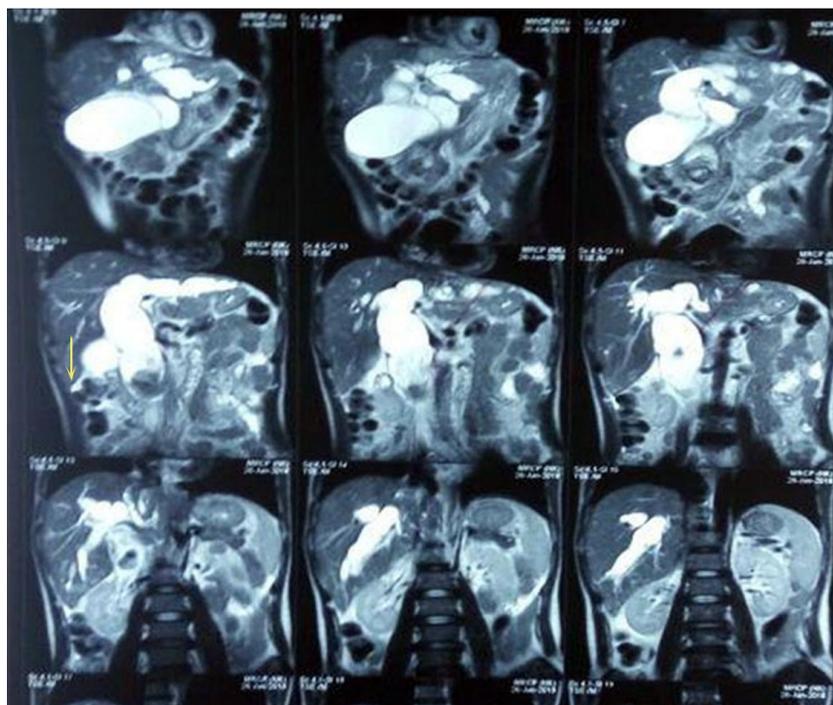


Figure 2. Endoscopic retrograde cholangiopancreatography (ERCP) of the second case showed stone on common bile duct (yellow arrow).

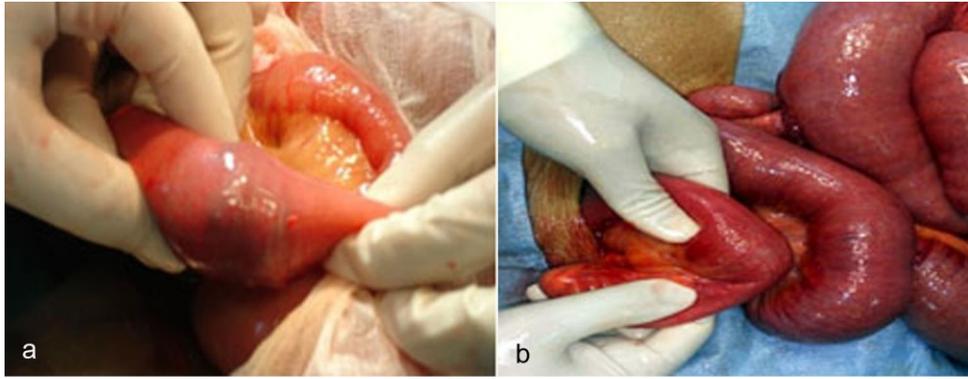


Figure 3. Dilated ileum with stone within. a. in case 1 and b. in case 2.

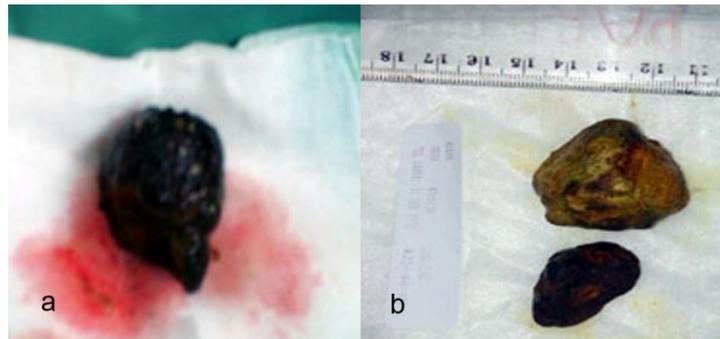


Figure 4. Macroscopic appearance of gallstone a. in case 1 of 3 cm sized and of 3 and 5 cm sized in case 2.

Discussion

These two cases are the first gallstone cases reported at Cipto Mangunkusumo General Hospital as the tertiary academic hospital at Jakarta, Indonesia in the last 20 years; in accordance with the literature reporting that gallstone ileus referred to a rare case.¹⁻⁴ Both cases were in young adults although the incidence of gallstone ileus in female is 3-5 times to male.⁵ Gallstone ileus more commonly found at 65 years rather than under 50.^{3,6} Gallstone ileus in the young patient was reported by Chatterjee (2008).⁷ The youngest those reported was 13 years old while the oldest was 91 years old.⁸ There is no specific explanation regarding the occurrence of gallstone ileus in young age. However, as in other gallstone ileus cases, jaundice in these subjects were found before or on hospital admission, showing the underlying biliary-related disease before the presence of gallstone ileus. The first case experiencing jaundice and abdominal pain on the right upper quadrant that radiated to the right back with the history of gallbladder stones detected by abdominal ultrasound a year before admission. The second case admitted with ileus syndrome which, confirmed on physical examination and presented jaundice at the admission.

Gallstone ileus is caused by gallstones or cholelithiasis making bile-enteric fistula and trapped after passing through the digestive tract.⁸⁻¹⁰ There is a variety of fistulas have been reported, such as gallbladder-duodenal, gallbladder-jejunal, gallbladder-colonic, gallbladder-jejunal-colonic, gallbladder-gastric, common biliary duct-duodenal, and gallbladder-gastric fistula. Among the fistulas, gallbladder-duodenal type is the most common one.⁸

Clinical symptoms in these two cases were consistent with the literature, which were nonspecific ileus symptoms.^{9,10} Diarrhoea in the first case is unusually found.⁶ However, it can be explained by bile acid overflow through bile-enteric fistula at the terminal ileum.^{11,12} Mild hyponatremia in the first case related to vomiting and diarrhea.²

The Rigler sign pneumobilia and small bowel obstruction were clearly present on both case's abdominal plain x-ray. According to Rigler, gallstone ileus is simply diagnosed based on plain abdominal finding showing air in the biliary tract (pneumobilia) and radiopaque stones projection in the dilated small intestine.^{13,14} Abdominal ultrasound examinations and abdominal CT scans were not performed on the first case since the plain abdominal x-ray had provide the information for a gallstone ileus. ERCP in the second case carried out in another hospital indicated by the presence of jaundice.

In both cases, laparotomy was performed followed by ileotomy and gallstone removal. The diameter of gallstones which were found in the ileum was 3 cm in the first case, 3 cm and 5 cm in the second case. Both are consistent with the literature reporting that gallstone might be entrapped in the intestinal lumen as the diameter up to 2.5 cm or more.⁸ The ileum has been reported as the most common location of entrapped gallstone, which is the location found in both cases. This is may be explained as terminal ileum has the narrowest diameter.^{11,15}

Ileotomy and gallstones removal were adequate. A one-stage surgical procedure may be carried out in low-risk patients.¹⁶ In addition, one stage surgical procedure should be performed in a subject with cholecystitis, gallbladder gangrene, or residual gallstones.¹ Further, the prevention of gallbladder carcinoma is considered to be the rationale to choose a one-stage surgical procedure in our cases. Another consideration in choosing one-stage procedure than the two-stage procedure is poor perioperative condition and prolonged surgery.^{3,17}

Bileo-enteric fistula repair was not performed in both cases as it will slowly closed leaving the fibrous tissue.¹⁷ In both cases, no bile-enteric fistula had any clinical problem. Therefore, the important thing is to ensuring to have a good drainage let the diameter of the fistula get smaller due to fibrous tissue formation.¹ Enterotomy per

laparotomy with bile-enteric fistula repair shows higher complications compared to enterotomy only (67% compared to 29%). The most common postoperative complication in exploration laparotomy is surgical wound infection.⁵ In both cases, no surgical wound infection was detected. However, the follow-up period was very short. Therefore, the infection should still be considered. The incidence of surgical wound infection is increased in the enterolithotomy group with fistula repair compared to enterolithotomy only.^{18,19} The other reason for not repairing the bile-enteric fistula in both cases was due to the absence of big-sized stone in the biliary system preoperatively.

Conclusion

Two gallstone ileus was reported as an uncommon surgical case with a good result and has a good prognosis. Plain abdominal x-ray has an important role in diagnosis and treatment approach.

Disclosure

Author disclose there was no conflict of interest.

References

- Nuño-Guzmán CM. Gallstone ileus, clinical presentation, diagnostic and treatment approach. *World J Gastrointest Surg.* 2016;8(1):65.
- Abich E, Glotzer D, Murphy E. Gallstone ileus: An unlikely cause of mechanical small bowel obstruction. *Case Rep Gastroenterol.* 2017 Jun 15;11(2):389–95.
- Ploneda-Valencia CF, Gallo-Morales M, Rinchon C, Navarro-Muñiz E, Bautista-López CA, de la Cerda-Trujillo LF, et al. Gallstone ileus: An overview of the literature. *Rev Gastroenterol México Engl Ed.* 2017 Jul;82(3):248–54.
- Bakhshi GD, Chincholkar RG, Agarwal JR, Gupta MR, Gokhe PS, Nadkarni AR. Gallstone ileus: dilemma in the management. *Clin Pract.* 2017 Aug 1;7(3).
- Halabi WJ, Kang CY, Ketana N, Lafaro KJ, Nguyen VQ, Stamos MJ, et al. Surgery for gallstone ileus: A nationwide comparison of trends and outcomes. *Ann Surg.* 2014 Feb;259(2):329–35.
- Farkas N, Kaur V, Shanmuganandan A, Black J, Redon C, Frampton AE, et al. A systematic review of gallstone sigmoid ileus management. *Ann Med Surg.* 2018;27:32–9.
- Chatterjee S, Chaudhuri T, Ghosh G, Ganguly A. Gallstone ileus – An atypical presentation and unusual location. *Int J Surg.* 2008;6(6):e55–6.
- Beuran M, Ivanov I, Venter MD. Gallstone ileus: clinical and therapeutic aspects. *J Med Life.* 2010 Dec;3(4):365–71.
- Glasgow RE, Mulvihill SJ. Treatment of gallstone disease. In: Sleisenger MH, Feldman M, Friedman LS, Brandt LJ, editors. *Sleisenger and Fordtran's gastrointestinal and liver disease: pathophysiology, diagnosis, management.* 9th ed. Philadelphia, PA: Saunders/Elsevier; 2010. p. 1134-51.e5.
- Walls RM, Hockberger RS, Gausche-Hill M, Roline CE, Reardon RF. *Disorders of the small intestine.* In: Rosen's emergency medicine: concepts and clinical practice. 9th ed. Philadelphia: Elsevier; 2018. p. 1112-20.e1.
- Sahsamanis G, Maltezos K, Dimas P, Tassos A, Mouchasiris C. Bowel obstruction and perforation due to a large gallstone: A case report. *Int J Surg Case Rep.* 2016;26:193–6.
- Suciu BA, Hălmaciu I, Vunvulea V, Trâmbițaș C, Pisciă R, Lata L, et al. Gallstone ileus caused by a cholecysto-duodeno-colic fistula: Case report and literature review. *ARS Medica Tomitana.* 2017 Nov 27;23(4):170–4.
- Rigler LG, Borman CN, Noble JF. Gallstone obstruction: Pathogenesis and roentgen manifestations. *J Am Med Assoc.* 1941 Nov 22;117(21):1753.
- Roothans D, Anguille S. Rigler triad in gallstone ileus. *Can Med Assoc J.* 2013 Oct 1;185(14):690.
- Fitzgerald DW, Sterling TR, Haas DW. Mycobacterium tuberculosis. In: Bennett JE, Dolin R, Blaser MJ, editors. *Mandell, Douglas, and Bennett's principles and practice of infectious diseases.* 8th ed. Philadelphia, PA: Elsevier/Saunders; 2015. p. 2787–818.
- Ravikumar R, Williams JG. The operative management of gallstone ileus. *Ann R Coll Surg Engl.* 2010 May;92(4):279–81.
- Shioi Y, Kawamura S, Kanno K, Nishinari Y, Ikeda K, Noro A, et al. A case of gallstone ileus displaying spontaneous closure of cholecystoduodenal fistula after enterolithotomy. *Int J Surg Case Rep.* 2012;3(1):12–5.
- Tartaglia D, Bakkar S, Piccini L, Bronzoni J, Cobuccio L, Bertolucci A, et al. Less is more: an outcome assessment of patients operated for gallstone ileus without fistula treatment. *Int J Surg Case Rep.* 2017;38:78–82.
- Lalisang AN, Mazni Y. Tata laksana gallstone ileus: dengan atau tanpa perbaikan fistula. Universitas Indonesia; 2018 [Unpublished].