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
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.
Laboratory findings were as follows:

- Hemoglobin 10.5 g/dL,
- Hematocrit 31.4 %,
- White blood count 18,100 cells/µL,
- Platelet 472,000 cells/µL,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- 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,
- Bile pigment 3.03 mEq/L,
- Sodium 131.2 mEq/L,
- Potassium 3.03 mEq/L,
- Chloride 103.7 mEq/L,
Physical examinations showing jaundice, abdominal distension, bowel contour, and movement were present, and right upper quadrant abdominal pain. Laboratory findings were as follows: hemoglobin 14.58 g/dL, hematocrit 45.5%, white blood count 9,780 cells/μL, platelet 531,000 cells/μL, 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 maneuverer 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).
Mild hyponatremia in the first day of admission. The second patient was reported by Chatterjee (2008). The youngest those reported was 13 years old while the oldest was 91 years old. There is no specific explanation regarding the occurrence of gallstone ileus in young age. However, as in other gallstone ileus cases, jaundice and abdominal pain on the right upper quadrant that radiated to the right back was the most common one. 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.

Gallstone ileus is caused by gallstones or cholelithiasis making bile-enteric fistula and trapped after passing through the digestive tract. There is a vary 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.

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

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. 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. 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.

Ileotomy and gallstones removal were adequate. A one-stage surgical procedure may be carried out in low-risk patients. In addition, one stage surgical procedure should be performed in a subject with cholecystitis, gallbladder gangrene, or residual gallstones. 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.

Bileo-enteric fistula repair was not performed in both cases as it will slowly closed leaving the fibrous tissue. 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. 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. 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. 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