

## Recurrent Gallstone Ileus Successfully Treated with Conservative Therapy

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Gallstone ileus is a rare complication of cholecystolithiasis, with the majority of cases requiring surgical treatment. In this paper, we describe a case of gallstone ileus that was successfully treated twice with conservative therapy. An 85-year-old woman was admitted to our hospital because of abdominal pain and vomiting. She had previously been treated with antibiotics for cholecystitis arising from 2 gallbladder stones. Computed tomography (CT) revealed that the small bowel was dilated and that 1 of the gallbladder stones had disappeared. In addition, a 28×22-mm calcified mass was found in the small-bowel lumen. We diagnosed gallstone ileus and performed nasogastric drainage for decompression. Follow-up CT revealed migration of the impacted stone, and symptoms had improved. However, 2 months after discharge, the patient's symptoms recurred. A CT scan revealed that the small bowel was again dilated and that the remaining gallstone had disappeared from the gallbladder. A 28×25-mm calcified mass was found in the small-bowel lumen. We diagnosed recurrent gallstone ileus. Because the gallstone was almost the same size as the previous one, we selected the same conservative decompression treatment. Fourteen days after the patient was admitted, the stone was evacuated with the feces. Although many cases of gallstone ileus require surgical treatment, spontaneous passage was achieved in this case. When treatment is chosen for gallstone ileus, the patient's presentation and clinical course must be considered. (J Nippon Med Sch 2015; 82: 300–303)

**Key words:** recurrent gallstone ileus, conservative therapy, spontaneous passage

### Introduction

Gallstone ileus is a rare complication of cholecystolithiasis<sup>1</sup>. It most often occurs in elderly persons and has a high mortality rate<sup>2</sup>. Although a small percentage of cases of gallstone ileus achieve spontaneous passage with conservative treatment<sup>3</sup>, the majority of cases require surgical treatment. Because the appropriate surgical treatment for gallstone ileus is often difficult to select because of such factors as the patient's age and complications, careful consideration is required. In patients who have undergone only enterolithotomy, the rate of recurrence for gallstone ileus is reportedly 5% to 8%<sup>4</sup>. The risk of recurrence persists if patients have undergone only enterolithotomy or conservative treatment. In this paper, we report a case of recurrent gallstone ileus for which a successful outcome was achieved with conservative treatment.

### Case Report

An 85-year-old woman was admitted to our hospital with a 1-day history of abdominal pain and vomiting. She had a history of ischemic heart disease and hypertension. Abdominal computed tomography (CT) revealed thickening of the gallbladder wall and 2 gallbladder stones (Fig. 1). Because cholecystolithiasis had caused the symptoms, cholecystectomy was recommended as a treatment; however, the patient and her family refused. The patient underwent conservative treatment with antibiotic drugs and was discharged.

Three months later, the patient was readmitted with increasingly severe intermittent abdominal pain and nausea. The significant laboratory results included: white blood cell count, 14,800/μL; red blood cell count, 348×10<sup>4</sup>/μL, serum hemoglobin concentration, 9.5 g/dL; se-

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rum platelet count,  $58.3 \times 10^4 / \mu\text{L}$ ; and serum C-reactive protein, 6.4 mg/dL.

Plain radiographs indicated marked small-bowel distention with air-fluid levels. Abdominal CT revealed that the small bowel was dilated and that 1 of the gallstones had disappeared. A 28×22-mm calcified mass was found in the small-bowel lumen (Fig. 2). We diagnosed gallstone ileus and performed nasogastric drainage for decompression. Follow-up CT revealed migration of the impacted stone, and the symptoms had improved. Cholecystectomy and repair of the cholecystoenteric fistula were recommended following the initial treatment, but the patient and her family refused because no symptoms were present after the conservative treatment.

After a further 2 months, the patient was readmitted with increasingly severe intermittent abdominal pain and nausea, the same symptoms as for the second admission. Abdominal CT revealed pneumobilia and dilation of the

small bowel; it also showed that the remaining gallstone had disappeared from the gallbladder. In addition, a 28×25-mm calcified mass was found in the small-bowel lumen (Fig. 3). The small bowel proximal to the calcified mass was extended; on the other hand, the distal small bowel showed no extension. On the basis of these radiological and clinical findings, we diagnosed recurrent gallstone ileus. Because this gallstone was almost the same size as the previous one, we selected the same conservative treatment of decompression. The patient's symptoms gradually improved, and 5 days after admission CT revealed that the impacted stone had moved. Eleven days after admission, CT showed that the stone had migrated to the ascending colon. Fourteen days after admission, the stone was evacuated in feces (Fig. 4). Thereafter, aspiration pneumonia developed several times, and the patient required long-term hospitalization. She was discharged on hospital day 54 without recurrence of the ileus.

### Discussion

Gallstone ileus is defined as a bowel obstruction resulting from the impaction of one or more gallstones. It is an uncommon complication of cholecystolithiasis, a rare cause of ileus, and accounts for 1% to 4% of cases of mechanical obstruction of the bowel<sup>1</sup>. Gallstone ileus has a high incidence among the elderly, according at a mean patient age of 65 to 75 years, and a high mortality rate<sup>2,5</sup>. The high mortality rate may be associated with the frequency of several factors affecting elderly patients, such as an unstable clinical condition, concomitant disease, a delay in starting treatment because of uncommon symptoms, and the frequent occurrence of complications associated with surgery. However, the outcome of gallstone

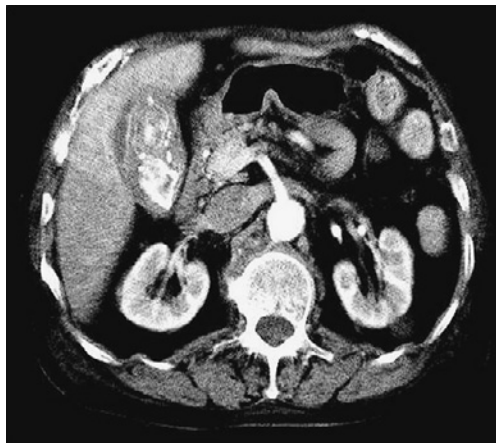


Fig. 1 During the first admission, abdominal computed tomography revealed 2 gallstones in the gallbladder, 28×25 mm and 28×22 mm in size.

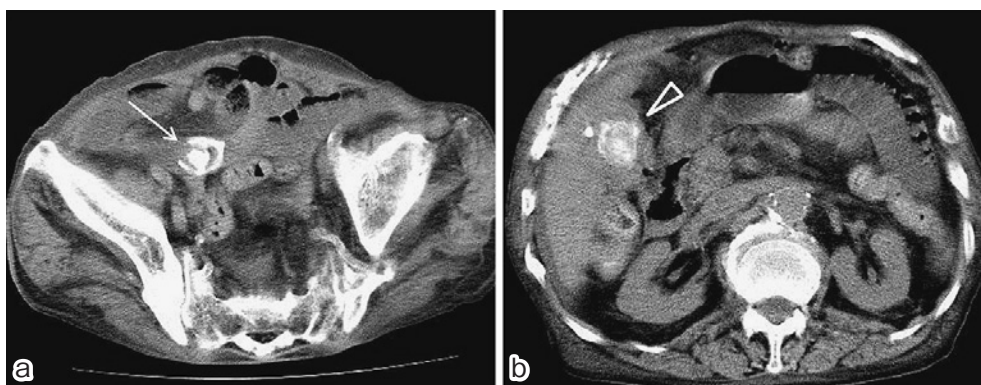


Fig. 2 During the second admission, abdominal computed tomography revealed dilation of the small bowel and a 28×22-mm calcified mass (arrow) in the small-bowel lumen (a). It also revealed that a gallstone in the gallbladder had disappeared (arrowhead) (b).

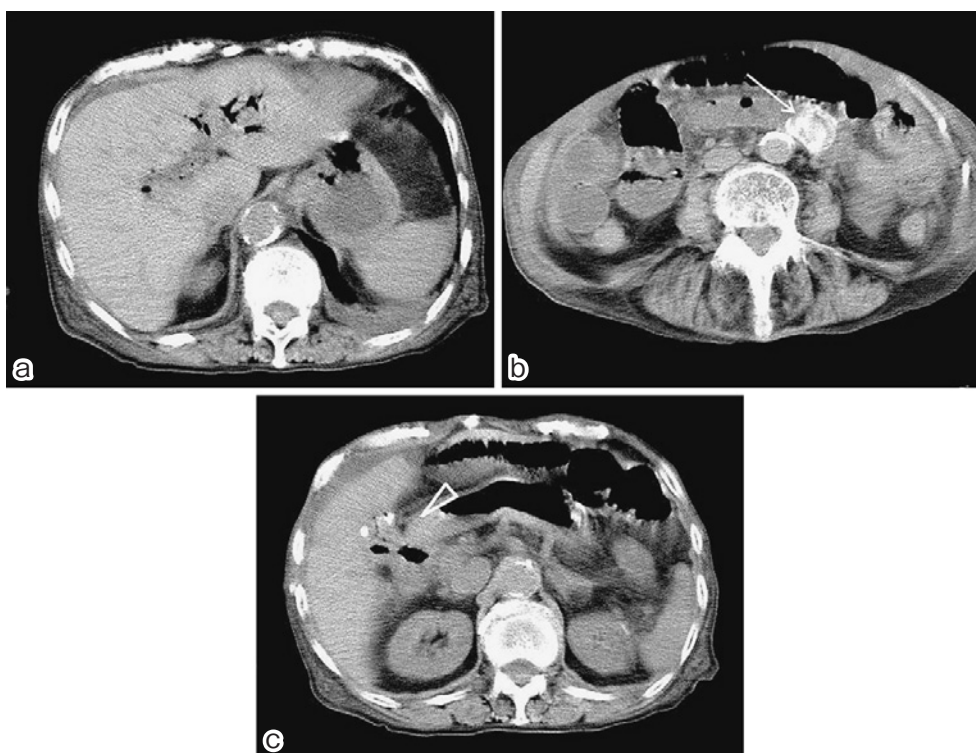


Fig. 3 During the third admission, abdominal computed tomography revealed pneumobilia (a), dilation of the small bowel, and a 28×25 mm calcified mass (**arrow**) in the small-bowel lumen (b). It also revealed that the remaining gallbladder stone had disappeared (**arrow-head**) (c).

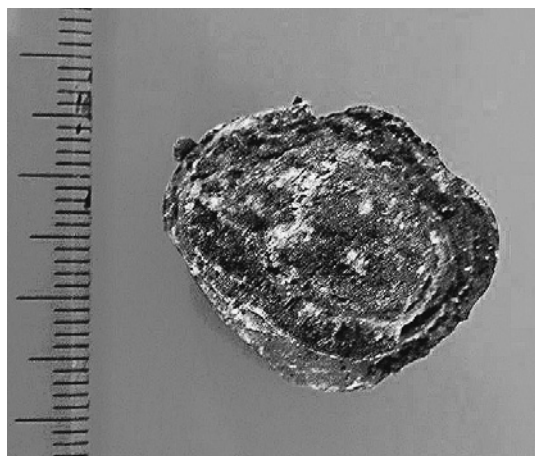


Fig. 4 The impacted stone, measuring 28×25 mm, was passed per rectum.

ileus may have recently improved with advances in surgical techniques, diagnostic imaging, and drugs<sup>6</sup>.

For gallstone ileus to be diagnosed, ultrasonography and CT have been shown to be useful<sup>7-9</sup>. In particular, enhanced CT is considered the most helpful tool for diagnosis, as it is highly sensitive, specific, and accurate<sup>10</sup>. The findings of CT include obstruction of the small intestine,

ectopic gallstones, pneumobilia, and gallbladder abnormalities. Furthermore, CT can help therapeutic decision-making. The information obtained with CT, such as the site of obstruction, the size of the impacted gallstone, and the migration of the gallstone, is important for determining whether conservative treatment is appropriate. In the present case, we were able to continue conservative treatment because follow-up CT showed an improvement in the small-bowel dilatation and indicated that the impacted gallstone had migrated.

The goals of treating gallstone ileus are to relieve the intestinal obstruction quickly and minimize morbidity and mortality. Once a gallstone has impacted within the small bowel and caused ileus, it rarely passes out spontaneously through the intestine<sup>11,12</sup>. Therefore, most cases of gallstone ileus require surgical treatment. However, the overall operative mortality rate is still high when gallstone ileus is associated with pre-existing factors of comorbidity or advanced age<sup>1</sup>. For this reason, the appropriate treatment for high-risk patients should be selected according to their condition. Most reports indicate that gallstones smaller than 25 mm usually pass through spontaneously<sup>3</sup>; therefore, if the impacted stone is not

larger, conservative treatment can be considered before a decision is made about surgical intervention.

Gallstone ileus reportedly recurs in 5% to 8% of patients who have undergone enterolithotomy alone<sup>4</sup>. When cases recur, more than 50% do so within the first month, and the remainder do so within 2 years<sup>13</sup>. The risk of recurrence must be carefully considered in cases treated only with enterolithotomy or conservative therapy. Following such treatment, whether elective cholecystectomy and repair of cholecystoenteric fistulas are required is still being debated. While some authors insist that the recurrence rate is low after the gallstone has been removed and that the fistula will close spontaneously, others authors suggest that to prevent recurrence, treatment should be cholecystectomy and the repair of cholecystoenteric fistulas<sup>14</sup>. Moreover, one report has stated that this treatment should be offered to only young patients who have a higher risk of subsequent biliary complications or to patients with recurrent biliary symptoms<sup>15</sup>. In the present case, we recommended cholecystectomy and repair of the cholecystoenteric fistula, but the patient refused. Although gallstone ileus did recur, the patient's condition improved without the need for surgical treatment. The majority of patients in whom gallstone ileus recurs are elderly, with multiple co-morbidities and a high risk of requiring surgical treatment. Therefore, both the complications and the patient's condition must be taken into account when the treatment strategy is planned.

### Conclusion

The present case of recurrent gallstone ileus was successfully treated with conservative therapy. The management of recurrent gallstone ileus remains controversial, and when the appropriate treatment is selected, the patient's condition must be considered. Considerations should include the risk of recurrence after successful conservative therapy.

**Conflict of Interest:** None of the authors have any conflict of interest regarding the publication of this paper.

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