A rare case of cholecystoduodenal fistula and gallstone impaction causing gallstone ileus: A case report

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Introduction

Gallstone ileus is a rare cause of gastrointestinal (GI) complication of gallstone that causes mechanical intestinal obstruction due to gallstone impaction in the gastrointestinal tract. About less than 1% of intestinal obstruction is caused by this. Patients may present with non-specific signs and symptoms. Surgical relief of gastrointestinal obstruction remains the mainstay of operative treatment. Classical findings on plain abdominal radiography include (1) pneumobilia; (2) intestinal obstruction; (3) an aberrantly located gallstone; and (4) change of location of a previously observed stone. The current surgical procedures are: (1) simple enterolithotomy; (2) enterolithotomy, cholecystectomy, and fistula closure (one-stage procedure); and (3) enterolithotomy with cholecystectomy performed later (two-stage procedure). We describe a case of gallstone ileus.

Abbreviations: GI: Gastrointestinal; CT: Computerised Tomography.
Gallstone ileus can occur in any part of the bowel, including the ileum (60.5% of cases), jejunum (16.1%), stomach (14.2%), colon (4.1%), and duodenum (3.5%). It can also be passed spontaneously (1.3%) [4]. Most frequently is the terminal ileum and the ileocaecal valve because of the narrow lumen and less active peristalsis [7].

Gallstone ileus is more common in elderly patients with comorbidities. The often vague, intermittent symptoms may delay the diagnosis and worsen morbidity and mortality. The patient may have intermittent symptoms of nausea, vomiting, abdominal distention, and pain. More attention should be made to those patients who have a history of cholecystolithiasis and with symptoms of nausea, vomiting, abdominal pain, and distention. However, our patient had an acute intestinal obstruction and led us to a quick decision for surgical intervention.

Classical findings on plain abdominal radiography include (1) pneumobilia; (2) intestinal obstruction; (3) an aberrantly located gallstone; and (4) a change in location of a previously observed stone [9]. Gallstones are radiopaque only in 15-20% of cases [1]. In our patient, we did not proceed with a diagnostic CT abdomen as she had feculent material on her ryles tube free flow; thus, a decision was made for an urgent laparotomy.

GI is a mechanical intestinal obstruction caused by the impaction of gallstones within the lumen of the bowel. Most reports indicate that stones smaller than 2.5 cm usually pass through spontaneously, so conservative treatment (decompression by nasogastric drainage) is conducted before a decision is made to remove the impacted stone by surgical means [8].

Wound infections and dehiscence is known to being the most common complications after surgery in 25% to 50% of GI cases. Other complications such as acute renal failure are also seen in post-operative patients. Gastrointestinal complications related to anastomotic leaks and intra-abdominal abscesses are highest in patients undergoing enterotomy with fistula closure [11].

Laparotomy should involve a systematic and meticulous search for the presence of additional ectopic enteric stones. Enterolithotomy remains the mainstay of operative treatment. A one-stage cholecystectomy and repair of the fistula is justified only in selected patients in good general condition and adequately stabilized preoperatively. Specific criteria for a one-stage procedure remain to be established. Two-stage surgery is an option for patients with persistent symptomatology after enterolithotomy surgery.

**Conclusion**

Gallstone ileus or gallstone gastrointestinal obstruction represents less than 1% of gastrointestinal obstruction cases, with a higher frequency among the elderly. The patient may present with vague symptoms, which may delay the diagnosis and treatment. Surgical intervention to relieve the obstruction is the mainstay of the treatment. A good judgment in selecting the surgical procedure will help in reducing mortality and morbidity.

**Declarations**

**Ethics approval and consent to participate:** This work adheres to the guidelines and principles of the Declaration of Helsinki and is in accordance with the Malaysian Good Clinical Practice guidelines.

**Conflict of Interest:** No conflicts of interest were declared.

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Authors’ contributions: CJ collected the patient’s clinic information, searched relevant works of literature, and wrote the manuscript. MAAM was the attending doctor of the patient. IZ & ZAA carried out critical revision and correction of the manuscript. All authors read and approved the final manuscript for submission and publication.

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