

# Cholecysto-duodenal fistula causing Gallstone Ileus.

## Short Communication

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## ABSTRACT

**Background:** Gallstones ileus is small bowel obstruction secondary to gallstones, caused by impaction of gallstones in the intestinal lumen. It is more common in the older population but can affect any age.

**Case Report:** We present a case of a 63-year-old male patient, known case hypertension, presented with complaints of pain and distention of the abdomen, nausea and vomiting. Plain abdominal x-rays showed small bowel obstruction. This mechanical obstruction of the gastrointestinal tract was caused by a gallstone in the distal jejunum.

**Conclusion:** Gallstone ileus may be initially managed conservatively. A large stone or an elusive diagnosis may necessitate emergency surgery.

**Keywords:** Gallstone ileus, Fistula closure, Intestinal obstruction, Bowel obstruction.

## INTRODUCTION

Gallstone ileus is characterized by a mechanical intestinal obstruction that is quite deceptive and difficult to diagnose. Gallstones ileus accounts for 1-4% of the cases of intestinal obstruction in the population and is often a missed diagnosis.<sup>[1]</sup> It is caused by the blockage or obstruction of the intestinal lumen secondary to impaction of gallstones. The usual age of the patient is between 65 to 80 years, but it has been reported in younger patients as well.<sup>[2]</sup> The mortality in gallstone ileus is unusually high and has been reported up to 27%.<sup>[3]</sup> In the United States, the rate of gallstone ileus is as low as 0.095% among the cases of mechanical bowel obstruction.<sup>[4]</sup> Bartolin was the first to report a case of gallstone ileus in 1654.<sup>[5]</sup> This entity has been frequently described in the literature.<sup>[6]</sup> The ideal management of gallstone ileus remains debatable, but surgical intervention has been shown to reduce the morbidity and improve outcome in the patients.<sup>[3,4]</sup> We report an unusual case of small bowel obstruction, which was successfully managed with timely surgical intervention.

## CASE REPORT

A 63 years old male resident of Gujranwala, Pakistan presented in the emergency department on 19th August 2016 with complaints of generalized abdominal pain, bilious vomiting and constipation for the past two days. On examination, the patient was dehydrated, afebrile, had tachycardia with a heart rate of 112 per

minute, normal blood pressure and respiratory rate of 16 breaths per minute. Abdominal examination revealed guarding and generalized tenderness, more pronounced in right hemi-abdomen. Routine baselines were sent. X-ray abdomen erect and ultrasound abdomen were performed in the emergency department. His plain abdominal x-ray showed evidence of small bowel obstruction [Figure 1]. His blood picture showed a total leucocyte count of 20.7x103/dL.

Haemoglobin, platelet count, serum amylase and liver function tests were within the normal range. Renal function tests were also normal, except potassium levels that were markedly decreased (2.6mmol/l). He was admitted, advised nil per oral and managed conservatively by instituting intravenous fluids, potassium replacement, analgesics and antibiotics. A nasogastric tube and Foley's catheter were passed. Pain and tenderness persisted despite conservative treatment. A contrast-enhanced CT scan of the abdomen was carried out three days after admission. It demonstrated moderate intra and extra-hepatic pneumobilia, moderate dilatation of small bowel loops up-to-the distal jejunum. A 2.3 x 2.7 cm well-defined, round, hyperdense focus with central



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doi:  
10.5281/zenodo.3595113

Submission: Oct 28, 2019  
Acceptance: Jan 28, 2020  
Publication: Feb 1, 2020



hypodensity, was visible in distal jejunum with collapsed gut loops distal to it. There appeared to be a well-defined, thick-walled, air-containing, blind end structure in the GB fossa with surrounding mesenteric haze.

After informed consent, an exploratory laparotomy was performed via midline umbilical sparing incision, which revealed a wide cholecysto-duodenal fistula, surrounded by dense adhesions. Jejunal loops were dilated up to the distal jejunum where a hard lemon-sized object could be palpated in the lumen of the gut. An enterotomy was made to reveal a large gallstone (4 cm × 4 cm × 3cm). The gallstone was removed and the enterotomy repaired in two layers with vicryl 3/0 [Figures 2 & 3]. The subcutaneous tissue was closed in layers and abdomen with prolene 1.

The patient had an uneventful recovery and was discharged on the seventh postoperative day and was kept on follow up through outpatient department for three months.

## DISCUSSION

Gallstone ileus most commonly presents with colicky abdominal pain.<sup>[7]</sup> Common complications associated with the gallstone disease are acute cholecystitis, choledocholithiasis with or without acute cholangitis, acute pancreatitis, and empyema of the gallbladder that may cause gangrene. Cholecystoduodenal, cholecystobiliary and cholecystocolic fistulae are rare complications of untreated cholelithiasis. Gallstone ileus occurs when a large gallstone passes through a fistulous tract, formed between the gallbladder and duodenum, and obstructs the lumen of the small intestine. The usual site of obstruction is the terminal ileum, but the stone may get lodged anywhere in the length of the small intestine if it becomes large enough during its passage.<sup>[8]</sup> In our case, the gallstone had obstructed the distal part of the jejunum. The stone may even lodge into the first part of duodenum causing gastric outlet obstruction, a condition referred to as Bouveret syndrome.<sup>[9]</sup>

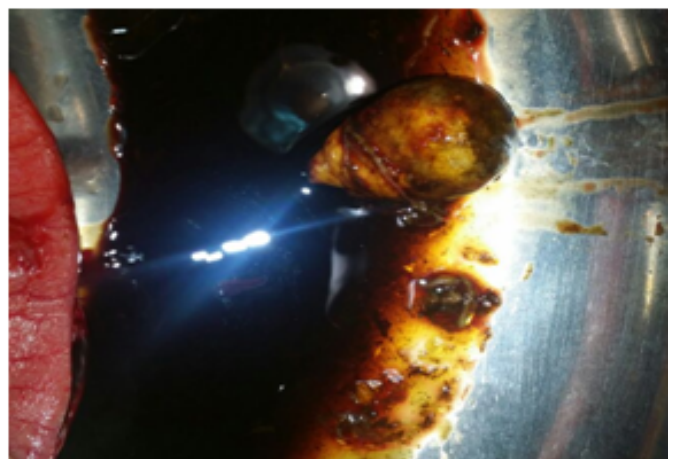
Clinical presentation of gallstone ileus is seldom clear and specific. History of biliary symptoms is only evident in one-third of the patients.<sup>[10]</sup> The patients may have vomiting with abdominal pain. A tender right upper quadrant of abdomen and leukocytosis may mimic acute cholecystitis. Dehydration and electrolyte imbalance may point towards intestinal obstruction. Chest x-ray reveals dilated and air-filled small intestinal loops. Diagnosis of gallstone ileus can be clinched on plain x-ray of abdomen by demonstrating the classic triad of small bowel obstruction, ectopic gallstone, and



**Figure 1:** X Ray Abdomen showing dilated bowel loops.



**Figure 2:** Hard mass in distal jejunum, per operative finding during laparotomy.



**Figure 3:** Gallstones delivered via enterotomy.

air in the biliary tree on plain abdominal x-ray film. Even if two of these signs are present, it is considered pathognomonic. However, these features can be seen in merely one-third of the cases. Diagnosis may be<sup>[11]</sup> missed when aerobilia cannot be detected or if the gallstone is not calcified enough to be visible on a radiograph.

CT scan has made the diagnosis of gallstone ileus easier. CT scan has an overall sensitivity of 93%, the

specificity of 100%, and diagnostic accuracy of 99% in the diagnosis of gallstone ileus.<sup>[12]</sup> The value of abdominal CT is crucial if the diagnosis is elusive. Laparoscopy is an excellent tool for establishing the diagnosis of this condition. As the signs and symptoms are usually of intestinal obstruction, and the patient usually presents the diagnosis is often made by exploratory laparotomy in 50 % of cases.<sup>[3]</sup> Gallstone ileus is primarily treated by aiming at initially giving relief to intestinal obstruction and minimizing the chances of morbidity and mortality. A gallstone smaller than 2.5 cm may easily traverse the bowel. Therefore, it is prudent to manage it conservatively initially, provided the diagnosis of ileus secondary to gallstone impaction has been made, and the size of the stone is small (<2.5cm).<sup>[13]</sup>

There is an ongoing debate about the timing of managing the cholecysto-enteric fistula. Enterolithotomy, cholecystectomy, and fistula repair may be performed during the same procedure (one-stage surgical procedure), or an initial urgent enterolithotomy may be followed four to six weeks later by cholecystectomy and fistula closure (two-stage surgical procedure). The operative mortality rates for one-stage repair has been reported to be 16.9%, whereas it is 11.7% for enterolithotomy alone.<sup>[4,6]</sup> Age of the patient, clinical condition at the time of presentation, and the presence of comorbidities should be considered while deciding the operative procedure in each individual case. When the diagnosis of a fistula is made during emergency surgery, most surgeons prefer to opt for a two-stage procedure.<sup>[4,6]</sup> Laparoscopy is increasingly being employed for treating GI. Stapling has been employed to occlude the fistulous tract. Extensive adhesions around the fistula or grossly dilated bowel may make the procedure more difficult to perform laparoscopically, but in expert hands, laparoscopic surgery has a better outcome and minimal complications.<sup>[14-16]</sup>

## CONCLUSION

Gallstone ileus may be initially managed conservatively. A large stone or an elusive diagnosis may necessitate emergency surgery.

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## CONFLICT OF INTEREST

The Authors declared no conflicts of interest.

## HOW TO CITE

Shaikh I, Ashraf MS, Arshad S, Alvi AR. Cholecysto-duodenal fistula causing Gallstone Ileus. *Pak J Surg Med*. 2020;1(1):78-80. doi: 10.5281/zenodo.3595113.

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