



## CASE REPORT

### GALLSTONE ILEUS WITH MULTIPLE GALLSTONES: A CASE REPORT

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Received: 26 Nov, 2020

Accepted: 6 Apr, 2021

Published: 19 Jun, 2021

**Key words:** Cholelithiasis; Gallstone ileus; Intestinal obstruction; Laparotomy.

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#### Citation

Sitaula D, Adhikari S, Bhattarai A. Gallstone ileus with multiple gallstones: a case report. Journal of Chitwan Medical College. 2021;11(36):125-7.



Peer Reviewed

#### ABSTRACT

Gallstone ileus is a rare complication of gallstones and an unusual cause of intestinal obstruction. It typically occurs due to formation of cholecystoduodenal fistula and patients usually present with features of small bowel obstruction. The mainstay of treatment is to relieve the intestinal obstruction with surgical removal of impacting gallstone. Here, we report a case of a male patient presented with features of small bowel obstruction. CT of abdomen demonstrated presence of air in the gallbladder, small bowel obstruction with direct communication of the gallbladder with 1st part of duodenum and multiple calculi in proximal jejunal loops, features suggesting gallstone ileus. The patient underwent exploratory laparotomy and removal of four gallstones via enterotomy. He was discharged after an uneventful postoperative course. The aim of this case report is to report a new unusual case of gallstone ileus and discuss its diagnostic and surgical approaches. Though uncommon, gallstone ileus should always be kept in mind when approaching a case of small bowel obstruction, especially in elderly patients and in patients with known gallstone disease.

#### INTRODUCTION

Gallstone ileus (GI) is an uncommon cause of small bowel obstruction that occurs in 1-4% of patients presenting with a mechanical small bowel obstruction.<sup>1</sup> GI is a rare complication of cholelithiasis that may result when a gallstone impacts the intestinal tract after passing through a biliary-enteric fistula, usually formed between the gallbladder and duodenum.<sup>2,3</sup> The most common site of impaction of the gallstone is the terminal ileum.<sup>3,4</sup> Female and elderly patients are commonly affected by GI with the mortality ranging between 12-27%.<sup>1,4,5</sup> We present a rare case of GI in an elderly male.

#### CASE REPORT

An 82-year-old male presented to Emergency Department with complaints of pain abdomen and abdominal distension for 10 days. He also reported intermittent vomiting and inability to pass stool and flatus for 3 days. He had no previous medical history, no known history of cholelithiasis and no history of previous abdominal surgery or trauma. The patient was a regular alcohol consumer who had been consuming locally fermented alcohol. On examination, he was lethargic with normal vital signs. Abdominal examination revealed generalised

abdominal distension with generalised tenderness however no rebound tenderness or guarding or rigidity was noted. There was no stool on rectal examination. Routine laboratory tests were unremarkable. An abdominal X-ray revealed small bowel air fluid levels. CT of the abdomen demonstrated distension of stomach along with dilatation of multiple jejunal loops with abrupt transition in left lumbar region. A calculus measuring 1.9 X 1.9cm with calcified wall and hypodense center was seen at the site of transition. CT also revealed a direct communication of the gallbladder with the 1<sup>st</sup> part of duodenum and presence of air in the gallbladder, cystic duct, common bile duct and intrahepatic bile ducts (Figure 1). Multiple other calculi were also noted in stomach and at multiple levels of jejunum.

The patient was resuscitated with intravenous fluids, antibiotics, analgesics and nasogastric decompression was done. After proper optimization, he underwent exploratory laparotomy during which small bowel obstruction was noted with the transition point at 140 cm distal to duodenojejunal flexure and 360cm proximal to ileocaecal junction, caused by the largest gallstone measuring 2.5 X 2.5 cm obstructing the lumen (Figure 2).



**Figure 1: Axial view of abdomen demonstrates air in the gall bladder (pneumobilia)**



**Figure 2: Impacted gallstone**

There were three other gallstones accumulated proximal to the largest gallstone measuring approximately 2 cm, 1.5cm and 1 cm respectively. Gross adhesion was seen covering a fistulous tract between gallbladder and first part of the duodenum. The gallstones were extracted by longitudinal enterotomy which was then closed transversely (Figure 3). The patient had an uneventful postoperative course and was discharged on 6<sup>th</sup> post-operative day.



**Figure 3: Multiple gallstones with the largest one measuring 2.5 X 2.5 cm**

## DISCUSSION

Gallstone ileus accounts for only 1-4% of all intestinal obstruction.<sup>1</sup> It is more common in women with female to male ratio of 3.5 to 1.<sup>5</sup> This pathology affects elderly population mostly and accounts for 25% of mechanical small-bowel obstruction in patients over the age of 65.<sup>6</sup> The gallstone enters the intestine through a fistula formed between the gall bladder and the duodenum, stomach or colon, most commonly the cholecystoduodenal fistula.<sup>7</sup> The most common site of gallstone impaction is terminal ileum (60.5%), however, gallstone may impact in jejunum (16.1%), stomach (14.2%), colon (4.1%) and duodenum (3.5%).<sup>1, 8</sup> The gallstone of size  $\geq$  2-2.5cm in diameter is prone to cause obstruction.<sup>8</sup> As found in the present case, multiple gallstones may be present in up to 40% of GI cases.<sup>9</sup>

Patient presentation is non-specific, usually presenting with features of intestinal obstruction. We should pay more attention to patients with history of cholelithiasis and symptoms of intestinal obstruction.<sup>4,8</sup> CT is the investigation of choice.<sup>4</sup> Classical findings on plain abdominal radiography consists of pneumobilia, intestinal obstruction, ectopic gallstone and a change in location of previously located gallstone, however clear cut Rigler's triad is seldom visualised.<sup>4, 8</sup> The aim of treatment is to relieve the obstruction by removing the stone.<sup>2</sup> Regarding management options, there have been different opinions which include: (i) enterotomy with stone extraction alone; (ii) enterotomy, stone extraction, cholecystectomy and fistula repair in same sitting; or (iii) as staged procedures.<sup>4,8</sup> Endoscopic lithotomy and lithotripsy have also been reported as management options for GI where impaction site is within reach of endoscope, either in the proximal small bowel or the colon.<sup>3</sup> Laparoscopic management of gallstone ileus and associated cholecystoduodenal fistula is also feasible.<sup>4</sup> Sarli et al has reported laparoscopic-assisted enterolithotomy for managing gallstone ileus, who treated three patients with laparoscopic-assisted technique and all of them made uneventful recoveries.<sup>10</sup> However, laparoscopy becomes more challenging in cases of dilated and edematous bowel.<sup>8,10</sup> Enterotomy with stone extraction alone has been the most common surgical method but the choice of surgical procedure is largely determined by clinical status and surgeon's judgment.<sup>4, 8</sup>

## CONCLUSION

GI is a rare cause of small bowel obstruction. It should be kept in mind when dealing with a case of small bowel obstruction, especially in elderly patients with known gallstone disease. The mainstay of treatment for GI is early surgical intervention.

## ACKNOWLEDGEMENT

We would like to acknowledge Prof. Dr. Harish Chandra Neupane and Dr Suraj Raj Bhattarai for the encouragement.

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