

Gallstone Ileus: A Rare Surgical Emergency

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Abstract

Background : Gallstone ileus is a rare complication of cholelithiasis and is an uncommon cause of intestinal obstruction accounting for 1%–4% of mechanical bowel obstructions. This usually results from luminal impaction of one or more gallstone.

Case Presentation : A 86-year-old male presented with the history of bilious vomiting for 15 days and abdominal distension for 8 days and diagnosed as a case of intestinal obstruction due to gall stone ileus. He was treated surgically by laparotomy followed by enterotomy and removal of gall stone were performed from the proximal ileum.

Conclusion : Early diagnosis and treatment are important otherwise adverse effect of mechanical bowel obstruction leads to bad prognosis.

Key words : Gallstone; Ileus; Mechanical bowel.

INTRODUCTION

Gallstone ileus is an uncommon surgical emergency that was defined by Bartholin in the early 17th century as a severe complication of cholelithiasis due to migration of bile stone into the intestine via fistula between gallbladder, bile duct and duodenum, stomach or colon leading to bowel obstruction.^{1,2} Eighty percent of gallstones getting through the intestine via biliary-enteric fistula does not cause any complication. Stone size greater than 2.5cm causes mechanical obstruction mostly in the terminal ileum in 75% of the cases.³⁻⁵

In the literature, incidence of gallstone ileus is reported as 0.3-0.5% of cholelithiasis cases.³ Moreover, mortality and morbidity rates are higher in cases of delay in diagnosis, obesity, old age and having systemic disorders as diabetes mellitus and cardiovascular disease.¹

Here, we are presenting a case of gallstone ileus with mechanical bowel obstruction to give awareness and focus on diagnosis and treatment of this rare condition under the current literature.

CASE PRESENTATION

A 86,years of age gentleman, non smoker, teacher, of Arabic literature was admitted on 25th July 2021 at Emergency Department of National Hospital and Sigma Lab Ltd. Chattogram with prolong history of nausea, bilious vomiting, abdominal distension and colicky abdominal pain. He had controlled hypertension, DM, CKD. Physical examination revealed abdominal distension and tenderness with sluggish bowel sound. Laboratory investigations showed leukocytosis.

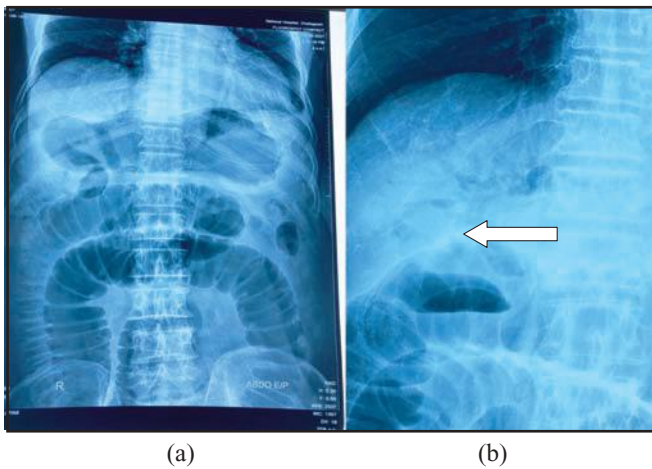


Figure (a,b) Plain abdominal X-ray demonstrated the presence of dilated loops of small bowel with multiple fluid gas level and pneumobilia.

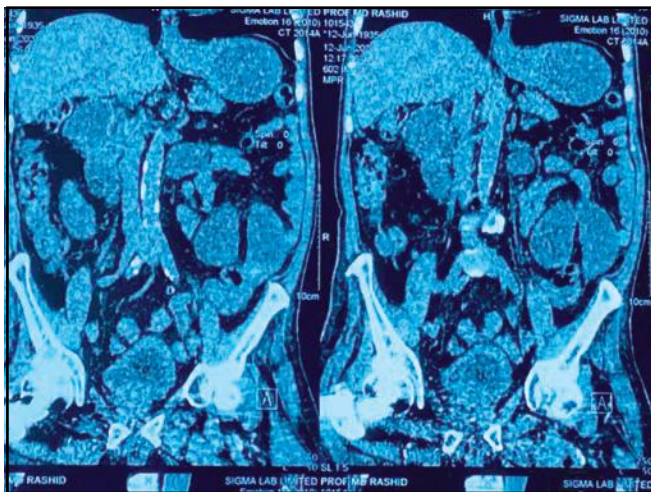


Figure 2 CT scan of the abdomen showed a large obstructive hyperdense structure impacted in the proximal ileum.

The patient underwent surgical exploration. Peroperatively dilated intestinal loops were found and intraluminal mobile solid mass with 3x4x2cm diameter in the proximal ileum was observed.



Figure 3 A simple enterotomy was performed and the gallstone was removed.

DISCUSSION

Gallstone ileus is an unusual complication of cholelithiasis in 2 percent of cases it causes mechanical bowel obstruction particularly in the elderly.⁶ Passage of gall-stones into intestinal tract via biliary enteric fistula is well-known pathologic scenario of the disease. Though the gallstone can impact any part of GI tract, the size of the stone has been reported to be ≥ 2 cm in diameter to cause mechanical bowel obstruction.⁷ Reisner and Cohen reported that the most common locations of impaction of gallstone were the terminal ileum and the ileocecal valve because of the small diameter. The other site of impactions of GIT are jejunum, the ligament of Treitz and pyloric part of stomach, while the duodenum and colon are the rare locations.¹

The clinical symptoms occasionally include nausea, vomiting, pain and hematemesis. Laboratory findings may demonstrate impaired liver functions with high bilirubin and alkaline phosphatase level. The diagnosis is really challenging for the surgeon and usually depends on the radiographic findings including plain X-ray, CT, MRI of the abdomen. Preoperative conventional diagnostic tools generally do not demonstrate bilioenteric fistula and delay in diagnosis would be inevitable resulting higher morbidity and mortality rates. Whereas radiologic findings of mechanical bowel obstruction can easily be visualized in plain X-Ray abdomen and computed tomography but pneumobilia would not be demonstrated in most of the cases.^{2,6,8} The classical Rigler's triad of radiography includes mechanical bowel obstruction, pneumobilia, and an ectopic gallstone within bowel lumen.⁹ In our case, abdominal CT scan and plain radiograph demonstrated dilated intestinal segments with hyperdense shadow in the jejunum and gas in the biliary tree.

Gallstone ileus usually requires emergent surgery to relieve intestinal obstruction. Bowel resection is only indicated when there is intestinal perforation or ischemia.¹⁰ There is no uniform surgical procedure for this disease because of its low incidence. Although enterolithotomy alone remains the popular operative method in most reports, the one-stage procedure composed of enterolithotomy, cholecystectomy and repair of fistula is necessary, if indicated.¹¹ Tan et al. compared the two surgical strategies of enterolithotomy alone and enterolithotomy with cholecystectomy for the emergent treatment of gallstone ileus, and concluded that both procedures are safe with no mortality, but the better surgical option is enterolithotomy.¹²

Open or laparoscopic surgical exploration of abdomen is the mainstay of the treatment and gall-stone should be removed by enterolithotomy with fistultract excision if needed and with/without cholecystectomy in cases. Early diagnosis could avoid the adverse effect of gall stone ileus. Old age, metabolic response to acute disease, comorbidities and current performance of the patient are the factors affecting the decision of one or two step surgery and also the mortality and morbidity rates. We performed surgical removal of gall-stone via enterolithotomy in our case.

CONCLUSION

Gallstone ileus is still a challenging surgical emergency with higher mortality and morbidity rates for surgeon. less than 1% of gastrointestinal obstruction cases, with a higher frequency among the elderly. Computed tomography has proven to be the most accurate diagnostic modality, Surgical relieve of obstruction is the cornerstone of treatment. High incidence of comorbidities in these patients, a good judgement in selecting the surgical procedure was required.

Enterolithotomy remains the mainstay of operative treatment. A one-stage cholecystectomy and repair of fistula is justified only in selected patients in good general condition and adequately stabilized preoperatively.

DISCLOSURE

All the authors declared no conflict of interest.

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