# GALL STONE ILEUS: A RARE CAUSE OF SMALL BOWEL OBSTRUCTION

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## ABSTRACT

Gallstone ileus is a rare disease and accounts for 1-4% of all cases of mechanical intestinal obstruction. It usually occurs in the elderly with a female predominance and may result in a high mortality rate. Its diagnosis is difficult and early diagnosis could reduce the mortality. Surgery remains the mainstay of treatment. We present a case report of a 55 year old lady diagnosed as having gall stone ileus and was treated with emergent laparotomy and enterolithotomy with fistula repair at a later stage.

**Keywords**: Enterolithotomy, Gall stone ileus, Intestinal obstruction.

## INTRODUCTION

The cause of mechanical small bowel intestinal obstruction includes gallstones, foreign bodies, bezoars, tumors, adhesions, congenital abnormity, intussusceptions, and volvulus[1]. Among these causes, a gallstone-induced intestinal obstruction is also referred to as a gallstone ileus. Gallstone ileus is a rare and potentially serious complication of cholelithiasis. It accounts for 1%-4% of all cases of mechanical intestinal obstruction, but for up to 25% of those in patients over 65 years of age with a female to male ratio of 3.5-6.0:1. The morbidity and mortality rate of gallstone ileus remain very high, partly because of misdiagnosis and delayed diagnosis. Thus, early diagnosis and prompt treatment could reduce the mortality rate.

## CASE REPORT

A 55-year old woman presented to our emergency department (ED) with a 2-day history of vomiting and epigastric pain. There was no past history of any surgical intervention. On physical examination, she was dehydrated with a pulse rate of 96 b/m, her abdomen was mildly distended, soft and exaggerated bowel sounds. There were no scars of surgery or external hernia. The white blood count was raised and rest of baseline investigations were within normal limit. Plain x-ray of the abdomen revealed dilated small gut loops with multiple air fluid levels and ectopic gall stone in pelvis. Ultrasound of the abdomen confirmed the diagnosis of gall stone ileus with a stone impacted in distal ileum. After initial fluid resuscitation, the patient was taken for exploratory laparotomy. A stone was found impacted at a distance of 40 cm proximal to ileocecal junction. Enterolithotomy was done and a stone measuring about 3 cm was removed followed by closure of enterotomy and no attempt to repair fistula was made at this stage. Post operative course was uneventful and she remained in good state of health. Patient was counselled regarding repair of fistula after a period of 6-8 weeks as majority of fistulas heal spontaneously during this period if distal obstruction is relieved. ERCP after 8 weeks revealed spontaneous closure of fistula and patient remained symptom free.

## DISCUSSION

The term gallstone ileus was first used by Bartolin in 1654 and referred to the mechanical intestinal obstruction due to impaction of one or more large gallstones within the GI tract. Biliary-enteric fistula is the major pathologic mechanism of gallstone ileus[2]. The gallstone enters the GI tract through a fistula between a gangrenous gallbladder and the GI tract. Occasionally a stone may enter the intestine through a fistulous communication between the common bile duct and the GI tract. Although the gallstone can impact anywhere in the GI tract, it should be at least 2 -2.5 cm in size to cause obstruction[3]. The most common locations of impaction of gallstone

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are the terminal ileum and the ileocecal valve because of the anatomical small diameter and less active peristalsis.

The clinical manifestations of gallstone ileus are variable and usually depend on the site of obstruction. The onset may be manifested as acute, intermittent or chronic episodes[4]. The most common symptoms include nausea, vomiting and epigastric pain. Moreover, a small portion of patients may present with hematemesis secondary to duodenal erosions. Laboratory studies may show an obstructive pattern with elevated values of bilirubin and alkaline phosphophatase.

The diagnosis of gallstone ileus is difficult, usually depending on the radiographic findings. In 50% of cases the diagnosis is often only made at laparotomy[5]. The classic Riglers triad of radiography includes mechanical bowel obstruction, pneumobilia, and an ectopic gallstone within bowel lumen. Plain abdominal films usually show non-specific findings because only 10% of gallstones are sufficiently calcified to be visualized radiographically. Abdominal USG is useful to confirm the presence of cholelithiasis and may identify fistula, if present. Abdominal CT becomes the more important modality in diagnosing gallstone ileus because of its better resolution.

Gallstone ileus usually requires emergent surgery to relieve intestinal obstruction. Bowel resection is only indicated when there is intestinal perforation or ischemia. 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 also showen to be effective in few studies. Tan et al[6] 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. Doko et al[7]. Compared simple enterotomy to one-stage procedure with urgent fistula closure in 30 patients, 11 of them treated with enterostomy alone (group 1) and 19 treated with one stage procedure with urgent closure of the fistula (group 2). He found that the operating time was significantly longer for the one-stage procedure. Complications occurred in 27.3% from

**Figure-1: Impacted gall stone found 40 cm proximal to ileocecal junction during exploratory laparotomy.**

group 1 and 61.1% from group 2. One patient in group 1 and two patients in group 2 died. He concluded that simple enterotomy should be the procedure of choice for patients with gallstone ileus. The one-stage procedure including urgent

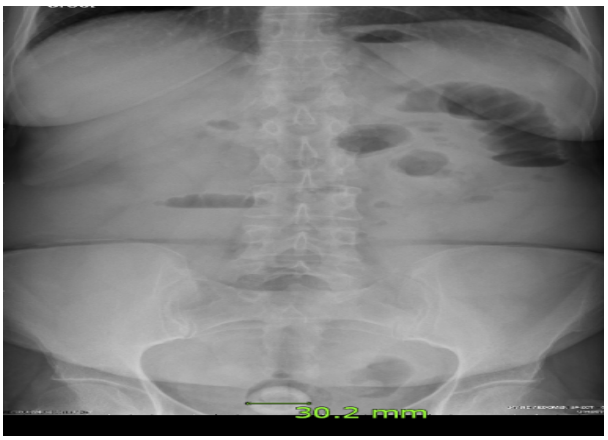


**Figure-2: X-ray showing dilated gut loops and multiple air fluid levels & an ectopic gall stone in pelvis.**

fistula repair should be reserved only for highly selected patients with absolute indications[8]. Evidence from another study from Spain

including 25 patients where simple enterotomy was done in 16 of them and one-stage procedure was done in the remaining 9 does not support one-stage enterolithotomy, cholecystectomy and fistula closure as the procedure of choice. It is recommended that simple enterolithotomy is appropriate in most patients[9]. Recently, laparoscopy-guided enterolithotomy has become the preferred surgical approach in treating gallstone ileus[10].

The prognosis of gallstone ileus is usually poor and worsens with age. Previous studies reported that the mortality rate is 7.5-15%[11], largely due to delayed diagnosis and concomitant conditions such as cardiorespiratory disease, obesity and diabetes mellitus. The postoperative recurrence rate of gallstone ileus is 4.7% and only 10% of patients require secondary biliary surgery for recurrent biliary symptoms.

## CONCLUSION

Gallstone ileus is a rare cause of intestinal obstruction. It must be considered in intestinal obstruction patients with a past history of gallstone, especially in elderly females. Abdominal CT is the preferred modality because of its rapid diagnosis of gallstone ileus. Surgical treatment is emergent when the radiological finding is even suspicious or confirmed.

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