

## Gall Stone Ileus—An Unusual Presentation

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### Abstract

We report a case of gall stone ileus in which the calculus was initially impacted in the small gut causing small gut obstruction. On follow up, CT demonstrated the calculus in the rectum confirming its spontaneous passage. The spontaneous passage of obstructing gall stone is an extremely rare entity.

### Key Words

Gall bladder calculus, Small gut obstruction

### Introduction

Gall stone ileus is an unusual complication of recurrent cholecystitis in which one or more gallstones erode through the wall of the gall bladder into the bowel with subsequent intestinal obstruction. The patients present with non-specific symptoms resulting in delayed preoperative diagnosis. With the increasing use of cross sectional imaging modalities like ultrasound (US) and computed tomography (CT) in the investigation of acute abdomen, prompt diagnosis of gall stone ileus can be made. CT is more sensitive than plain radiograph for detecting two of the three signs in Riglers triad. The patients with gall stone ileus require surgical removal of the obstructing stone with or without biliary surgery. We report an unusual presentation of gallstone ileus in which there was spontaneous passage of an obstructing gallstone.

### Case Report

A 60-year old woman presented with two days history of pain abdomen and constipation. Clinical examination

revealed soft non-tender abdomen but high-pitched bowel sounds were present on auscultation. Supine abdominal film showed several gas-filled dilated loops of small bowel with no gas in the large bowel. In addition, there was a faint calcified density overlying the left iliac crest. No air was seen in biliary tree (Figure 1). Spiral CT of the abdomen with oral and IV contrast was done after 2 days. Topogram revealed gas filled dilated small gut with gas in the colon. Curvilinear gas shadow was also seen in right hypochondrium. CT section through the liver showed air in the biliary radicles of left lobe (Figure 2). Section at the level of pelvis showed a contrast filled dilated small gut loop. A hyper dense calculus with lamellar calcification was seen in the rectum (Figure 3). CT findings confirmed the spontaneous relief of obstruction with passage of the obstructing gall stone into the colon. The stone was subsequently passed per rectum.



Fig. 1 : Supine x-ray abdomen shows dilated air-filled small gut loops.

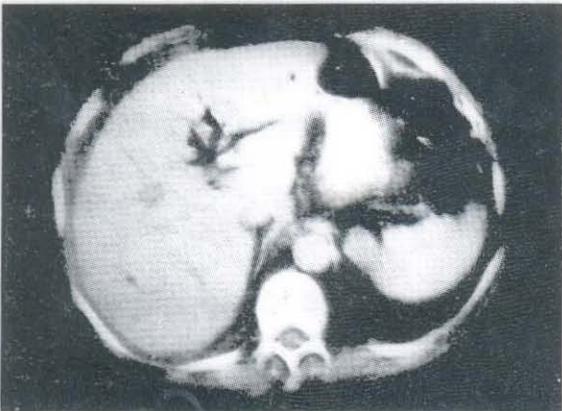


Fig. 2 : Spiral CT section through liver depicts air in the biliary radicals.

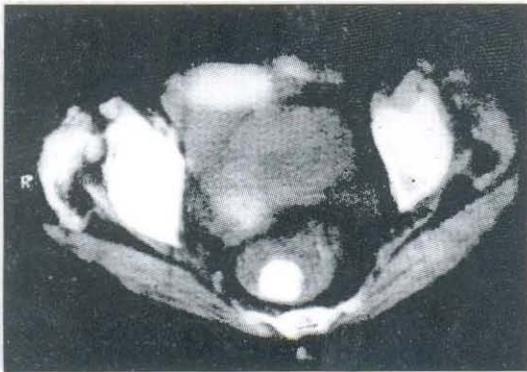


Fig. 3 : Spiral CT section at the pelvis shows a hyperdense calculus in the rectum confirming its spontaneous passage.

**Discussion**

*Gallstone ileus is a geriatric surgical emergency accounting for 1-4% of cases of mechanical intestinal obstruction (1,2). It occurs more frequently in women than men and the ratio ranges from 4:1 to 16:1 (3, 4). Although more common in the elderly population, patients as young as 13 years of age have been reported (5).*

*The clinical presentation of gallstone ileus is rarely specific and more than one third of patients have no history of biliary symptoms (5-7). The duration of symptoms before admission varies from 4-8 days and reflects intermittent movement of gallstones till eventual impaction (tumbling obstruction). Mechanical intestinal obstruction with abdominal pain and vomiting is the most common clinical presentation. Jaundice is uncommon and is found in less than 15% cases (3,8).*

The classical triad on plain abdominal radiograph described by Rigler et al are mechanical obstruction of the bowel, an ectopic biliary calculus and pneumobilia (9). However, it is observed only in 30-35% cases, since the majority of gall stones are not sufficiently dense to be detected by abdominal radiography. The incidence of pneumobilia varies from 54-60% in various studies (1,3, 5,7)). Pneumobilia implies either a patent cystic duct or a fistula involving the common bile duct. In majority of patients, cystic duct obstruction is the pathophysiologic event which causes cholecystitis and eventually leads to biliary enteric fistula. This explains why air is frequently absent from the biliary tree. Some authors regard pneumobilia as a favorable finding implying a high probability of spontaneous fistula healing as gall bladder can drain normally through the common bile duct (10).

Cross sectional imaging modalities such as CT and US may be useful in preoperative diagnosis of gallstone ileus. These modalities can detect a fistula, impacted stones and the presence of residual cholelithiasis or



choledocholithiasis. Contrast studies are valuable for identifying the cause of fistula and the level of bowel obstruction (3,8).

Once a calculus enters the gastrointestinal tract, it may be vomited or passed spontaneously or becomes impacted. It is likely that more than 80% calculi entering the gut through a biliary enteric fistula will be uneventfully excreted. However spontaneous passage of an obstructing gallstone is exceptional (3, 6, 7).

The common sites of impaction of gallstone are terminal ileum (50-75%), proximal ileum and jejunum (20-40%), duodenum (< 10%). Colonic occlusion is rare but can occur with cholecystoduodenal or cholecystocolonic fistula (1,2,7). An underlying pathological narrowig of the colon has been reported in all cases of gallstone impaction in the colon. It has been suggested that when the gallstone is very large, obstruction may occur without colonic abnormality as a result of cholecystocolonic fistula.

Most authors report that calculi smaller than 2.5 cm usually pass spontaneously, although smaller stones have caused fatal ileus due to fecal impaction. However, large stones of 5 cm diameter have also passed spontaneously. Multiple stones have been documented in 3-10% of cases and are often responsible for early recurrence.

Prompt release of intestinal obstruction remains the cornerstone of management. The decision to perform biliary surgery at the time of release of obstruction of the gut (one-stage procedure) or later (two-stage procedure) or conservative management is controversial.

The biliary complications that may develop in patients treated by entero-lithotomy alone include recurrent gallstone ileus, acute cholecystitis, acute cholangitis and gall bladder cancer.

## Summary

Gall stone ileus is an unusual complication of recurrent cholecystitis in which one or more gall stones erode the wall of gall bladder into the bowel and results in intestinal obstruction. The calculus may become impacted, vomited or passed spontaneously in stool. Approximately 80% of calculi entering the gut through the biliary enteric fistula are uneventfully excreted. However, spontaneous passage of an obstructing gall stone as seen in our case is exceptional.

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