CASE REPORT

GALLSTONE ILEUS: A DISEASE EASILY IGNORED IN THE ELDERLY

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SUMMARY

Gallstone ileus is an uncommon cause of small bowel obstruction, accounting for only 1–4% of all intestinal obstructions. In patients with cholelithiasis, only 0.3–0.5% reportedly develop gallstone ileus. However, the condition causes 25% of cases of non-strangulated small bowel obstruction in those over the age of 65 years. We report a patient with gallstone ileus who presented with small bowel obstruction that was initially misdiagnosed. The correct diagnosis was made based on finding an ectopic gallstone on plain abdominal radiography, a cholecystoduodenal fistula, and gallstone impaction in a small bowel follow-through study. [International Journal of Gerontology 2008; 2(1): 18–21]

Key Words: elderly, gallstone, ileus

Introduction

Gallstone ileus is an uncommon cause of small bowel obstruction, accounting for only 1–4% of all causes of intestinal obstruction. In patients with cholelithiasis, only 0.3–0.5% develop gallstone ileus. However, in patients over the age of 65, gallstone causes 25% of non-strangulated small bowel obstructions\(^1\)\(^2\). The morbidity and mortality are high if the diagnosis is missed. The mortality reportedly ranges from 12–18%, particularly in older patients who often have comorbid illnesses that increase the operative risk\(^3\).

Case Report

A 78-year-old male was admitted with severe vomiting, abdominal distention, and a fever with a temperature to 39.5°C for 1 day. The vomitus was yellow-green without coffee ground material or blood. He had passed no stool in the 2 days prior to admission. The patient was known for some time to have asymptomatic gallstones. He had chronic lung disease and had had a productive cough for 1 month prior to admission. In addition, he had diabetes and a history of brain trauma requiring a ventriculoperitoneal shunt.

An initial chest X-ray showed a right lower lung infiltrate, and an abdominal plain film showed a ventriculoperitoneal shunt \textit{in situ} and a 3 × 2 cm gallstone in the right upper quadrant. The bowel gas was nonspecifically increased (Figure 1A). His white cell count was 20,500/µL, hemoglobin 16.4 g/dL and blood sugar 211 mg/dL. The levels of bilirubin and liver enzymes were not elevated. The admitting diagnosis was pneumonia, and the vomiting was thought to be attributed to the infection. However, the vomiting became worse after admission. A repeat plain abdominal film showed severely distented bowel loops and migration of the gallstone to the right lower quadrant (Figure 1B). Abdominal ultrasound also showed a gallstone in the right lower quadrant (Figure 2). We consulted a surgeon for management of apparent gallstone ileus, but the patient’s symptoms suddenly improved and further
imaging studies and observation were recommended. A small bowel barium enema demonstrated a gallstone apparently impacted in the distal ileum and dilated proximal loops of bowel. An enterobiliary fistula was also suspected (Figure 3). An abdominal computed tomography (CT) confirmed these findings (Figure 4), and the patient underwent enterorrhaphy with removal of the gallstone. He recovered from surgery uneventfully.

Discussion

The classic radiographic triad for gallstone ileus, Rigler’s triad, includes signs of small bowel obstruction, pneumobilia, and ectopic gallstone. Our patient’s initial plain film was not particularly suggestive of this diagnosis, as the gallstone was seen in the right upper quadrant. There was no way of telling if it was within the gall bladder or already in the bowel. Also, the bowel loops were not particularly distended at that point in his course. In fact, only 9–14% of patients have a clear-cut Rigler’s triad. Our patient’s persistent symptoms were adequate indication for repeat radiography, which by then did show both dilated bowel loops and an ectopic gallstone.

The sudden relief of the patient’s symptoms at the time of the first surgery consultation is not at all unusual. Symptoms of gallstone ileus often characteristically remit and recur. This phenomenon has been attributed to the migration of the stone, with the symptoms likely to worsen when it becomes impacted in the distal small bowel. Fortunately in our case, further imaging studies were undertaken, which clarified the diagnosis. At that point, the patient was able to tolerate the surgery well, which might not have been the case had management been delayed.

Gallstone ileus occurs three to five times more frequently in women than in men. The gallstones enter the intestinal tract through a fistula formed between the gallbladder and the duodenum, stomach or colon. A cholecystoduodenal fistula is the most frequent finding, accounting for 83% of cases. Bowel obstruction is more likely to occur if the stone is larger than 2.5 cm, as
was the case in our patient. The ileum is the most common site of obstruction (62.5%), followed by the jejunum (30%), duodenum (2.5%) and colon (2.5%). Bouveret’s syndrome, first described in 1896, is the unusual situation of gastric obstruction caused by a gallstone impacted in the duodenum. This syndrome can be diagnosed and treated endoscopically with stone extraction or mechanical lithotripsy, but surgery is necessary in over 90% of cases. The reported mortality ranges from 19–24%.

Our patient’s initial symptom was vomiting, and his stone was first seen in the right upper quadrant. It is interesting to speculate as to whether he had transient duodenal obstruction at that point. His small bowel series and abdominal CT findings were consistent with a cholecystoduodenal fistula, but the stone by then had migrated to the distal ileum.

Lassandro’s group reported the imaging findings in their 27 patients. On abdominal sonography, they found pneumobilia in 56% of the patients, dilated bowel loops in 44%, gallbladder abnormalities in 37%, and

Figure 3. (A) Small bowel barium enema showing an enterobiliary fistula in the right upper quadrant (white arrow) and a gallstone in the right lower quadrant (black arrow). (B) Small bowel barium enema showing a gallstone apparently impacted in the distal ileum (black arrow).

Figure 4. (A) Non-enhanced abdominal computed tomography showing a fistula (white arrow) and little barium content in the biliary tract after small bowel barium enema (black arrow). (B) Non-enhanced abdominal computed tomography showing a hyperdense lesion containing a hypodense ring within it (white arrow) in the right lower quadrant, consistent with a gallstone.
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extraluminal fluid and ectopic gallstones in 15% each. In their hands, abdominal CT performed better than ultrasound for locating ectopic stone (81%). Other CT findings included dilated bowel loops (93%), pneumobilia (89%), air–fluid levels (37%), extraluminal fluid (22%), and enterobiliary fistulas (15%). Our patient’s CT findings were also consistent with those of Lassandro and colleagues and correlated well with what we saw on the small bowel series. In cases of small bowel obstruction, small bowel enema is more accurate in identifying the presence and location of an obstruction than CT9. We were, in fact, able to see the ectopic gallstone in the right lower quadrant on plain film, ultrasound, CT, and small bowel series.

Spontaneous passage of gallstones large enough to cause impaction has been reported, but most patients require some type of intervention10. If the stone is within reach of an endoscope, either in the proximal small bowel or in the colon, it may be treated by lithotripsy and removal of the fragments8,11–13. Extracorporeal shockwave lithotripsy has also been used successfully, but this method is limited by bowel gas that may shelter the stone and by the fact that it may be difficult to identify the gallstone8,14,15. Unfortunately, the majority of patients require surgery, as did ours16,17.

In conclusion, this case is a reminder that the diagnosis of gallstone ileus must be made in a timely manner. When a large stone is seen on X-ray, particularly in an older patient whose symptoms and signs are suggestive of bowel obstruction, gallstone ileus should be considered in the differential diagnosis. Follow-up X-rays or supplemental imaging studies should be contemplated. If typical imaging findings are present, the diagnosis is straightforward.

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References