Gallstone Ileus: Clinical Presentation of a Benign Mechanical Intestinal Obstruction

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Key Words

Gallstone · Ileus · Surgery · Obstruction · Cholelithiasis

Abstract

Gallstone ileus is a rare cause of small bowel obstruction which usually presents in elderly female patients and which has been associated with high morbidity and mortality rates. We present the case of a 63-year-old man who presented at our institution with symptoms of bowel obstruction. Abdominal X-ray and exploratory laparotomy revealed a large gallstone in the terminal ileus.

Background

Gallstone ileus is a rare complication of cholelithiasis and an uncommon cause of mechanical bowel obstruction [1, 2]. However, there are areas where the incidence of gallstone ileus may be higher, such as Chile, Mexico and another nations [3–5]. The incidence of gallstone ileus in Mexico is similar to that in other reports, around 30–35 patients per 1,000,000 hospital admissions over a 30- and 45-year period, respectively [4, 6].

Gallstone ileus is characterized by occlusion of the intestinal lumen as a result of one or more gallstones. This condition is rare and, consequently, the diagnosis is frequently missed or unduly delayed [7], as occurred in the case reported herein. Gallstone obstruction is responsible for 1–4% of all intestinal obstructions and carries a significant complication rate [2, 8]; mortality ranges between 12 and 27% [8, 9]. Gallstone ileus occurs mainly in elderly patients, who often have serious concomitant diseases. The most

common concomitant diseases are cardiovascular, pulmonary, and diabetes mellitus [8]. Frequently, gallstone ileus originates from a cholecystoduodenal fistula (90%) [5, 10].

In most cases, the symptoms of gallstone ileus are initially vague and intermittent, probably because the calculus causes only partial obstruction of the intestinal lumen as it passes down the digestive tract. Later, when the stone becomes firmly impacted and complete obstruction occurs, vomiting and abdominal distention ensues. Advanced dehydration and electrolyte imbalance are usually present at the time medical advice is sought. In all cases of gallstone ileus, classical findings through plain abdominal roentgenograms include intestinal obstruction or aberrant located gallstones and pneumobilia [8, 11]; CT findings in gallstone ileus may result in faster diagnosis and treatment [12, 13].

Surgical treatment can either be open or laparoscopic; with the new endoscopic techniques the surgical procedure has been advocated because of its lower morbidity and mortality [14]. Recently, a interesting choice to treat some specific cases with gallstone ileus was described using extracorporeal shock wave lithotripsy and argon plasma coagulation [15].

Case Report

A 63-year-old man presented to our institution with a history of abdominal pain, vomiting, and constipation for three weeks. The patient had a medical history significant for uncontrolled diabetes mellitus and coronary artery disease. Physical examination was significant for massive abdominal distention without signs of peritoneal irritation, fever of 38.4°C, and the patient was not clinically jaundiced. Laboratory examination revealed an elevated white blood cell count $15.8 \times 10^9/l$, severe dehydration and electrolyte imbalance (hyponatremia and prerenal azotemia). Plain abdominal X-rays were consistent with small bowel obstruction, and a radiopaque gallstone was seen in the pelvis. Pneumobilia was not seen in this patient (fig. 1).

After appropriate fluid resuscitation, the patient's hemodynamic condition improved and he was taken to the operating room for exploratory laparotomy. Surgical exploration revealed massively dilated loops of small bowel proximal to the distal ileum, without evidence of abscess or purulent fluid collections. A point of obstruction was seen 53 cm from the terminal ileum where an enterotomy was made revealing a large gallstone ($5 \times 4 \times 4$ cm). The gallstone was removed and the enterotomy repaired in two layers (fig. 2, fig. 3). We then performed a completion cholecystectomy; the gallbladder contained multiple stones ranging from 5 to 10 mm. It was adherent to the duodenum, and after tedious dissection a fistula between the gallbladder and the first portion of the duodenum was identified. The fistula was taken down and the duodenum repaired primarily. The patient had an uneventful postoperative course and was dismissed home on postoperative day six.

Conclusion

We conclude that the prognosis is better with an early diagnosis based on the suspicion of this entity and knowledge regarding this pathology. In general the clinical and radiological findings, such as plain abdominal X-rays, ultrasound and CT scan, provide enough data to support the diagnosis and treatment. While conservative management with nasogastric tube decompression and intravenous fluid may be attempted, impacted gallstones are not likely to pass, and most patients will require an operation.

Fig. 1. Supine X-ray of the abdomen showing a large gallstone.

Fig. 2. Enterotomy.

Fig. 3. Gallstone.

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