

Recurrent gallstone ileus: case report and literature review

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SUMMARY: Recurrent Gallstone Ileus: case report and literature review.

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The gallstone ileus is a rare complication of cholelithiasis and it re-

presents the 1-4% of small intestinal mechanical obstruction. Gallstone is generally wedged in the terminal ileum, even if unusual locations have been described. The literature reports a very high morbidity and mortality, often because misdiagnosis or delayed diagnosis. There is no unique opinion in literature about the choice between one-stage and two-stage surgery. We report a clinical case that summarizes the diagnostic and therapeutic difficulties of gallstone ileus.

KEY WORDS: Gallstone ileus - Cholelithiasis - Cholecysto-duodenal fistula - Surgery.

Introduction

Gallstone ileus is a rare complication of cholelithiasis (2) and accounts for about 1-4% of mechanical small bowel obstruction. It occurs in the sixth and seventh decade of life, with a mean age of 74.3 years (range 63-85) and a female-to-male ratio of 3.5-6:1 (3). This particular pathology, as described for the first time in 1654 by Bartolini, consists of mechanical small bowel obstruction by an impacted gallstone. The gallstone usually impacts in terminal ileum or ileocecal valve. An unusual site is the duodenojejunal flexure (1-7).

Clinical symptoms and signs of the gallstone ileus are aspecific; the almost of the patients presents with acute abdominal pain and vomiting. Radiology shows the pathognomonic triad of pneumobilia, small bowel obstruction and ectopic gallstone (6). The morbidity and mortality remain very high, often due to misdiagnosis or delayed diagnosis (4). In fact, the average duration of symptoms is 6 days (range 2-14) with an average diagnostic delay of 3.5 days (range 1-10) (5).

Surgery is the treatment of choice: only enterolithomy; one-stage surgery with enterolithomy, cholecystectomy and fistula repair; two-stage surgery with enterolithomy as emergency operation followed by cholecystectomy and fistula repair 4-6 weeks later.

We described an unusual case of recurrent gallstone ileus.

Case report

A 75-year-old woman was transferred in our department from another hospital. She was previously treated for 10 days for abdominal pain and bilious vomiting with acute renal failure following a severe dehydration. She had also paroxysmal atrial fibrillation (PAF).

Previous digestive X-ray with gastrografin revealed a shift of the contrast medium to large intestine. Abdominal computed tomography (CT) showed a thickened cholecyst wall with air and large gallstones (about 28 and 16.5 mm) inside the lumen, dilated common bile duct, and duodenum wall in close contact with the cholecyst. A rounded mass of 35 mm in diameter is revealed 15 cm afterwards the ligament of Treitz. The clinical and radiological findings confirmed the diagnosis of gallstone ileus.

She was in poor general conditions with nasogastric tube (NG tube) and bladder catheter. The abdomen was soft, nontender, aching to deep palpation, peristalsis was present with numerous metallic noises. Blumberg's and Murphy's signs were negative. Laboratory tests showed mild anemia (Hb 11.3 g/dL), hypokalemia (2.89 mEq/L), hypocalcaemia (8.1 mg/dL), hypoalbuminaemia (3.0 g/dL), abnormal gamma-glutamyltranspeptidase (GGT) (80 IU/L). The patient was ASA IV. The day after admission the patient underwent surgery. We performed transverse right subcostal laparotomy. The presence in jejunum of a large, cylindrical stone, approximately 3.5 cm in transver-

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se diameter, was confirmed. It was located 15 cm afterward the Treitz, completely obstructing the lumen. The proximal jejunal wall was thickened and edematous with marked distension of the lumen. The gallbladder was sclerotic, tenaciously adherent to the duodenum, filled with large stones locked inside by the sclerotic retraction.

The dissection of the cholecyst seems laborious, in particular the closure of the large fistula (3.5 cm), between cholecyst and duodenum, with a high risk of postoperative dehiscence of the sutures. These findings and the very high surgical risk (ASA IV) contraindicated the one-stage surgery. Therefore we only made a transverse enterotomy and extraction of the gallstone. The postoperative course was initially regular, with oral intake on third postoperative day.

In the seventh day, the patient complained of bilious vomiting, associated with pain in right hypochondrium and epigastrium and recurrent ileus. Upper abdominal CT showed, at about 40 cm from Treitz, the presence of another jejunal intraluminal mass, looking like a migrated stone of 22 mm, with a dilated proximal jejunal tract. The patient was operated again with extraction of the stone without cholecystectomy. Furthermore, palpation of the cholecyst, which was further reduced in volume, revealed a residual gallstone impossible to move mechanically.

On the third postoperative day, the bowel was unobstructed and total parenteral nutrition was started.

In the ninth postoperative day a semi-liquid diet was begun. After oral intake an episode of colic with bilious vomiting occurred without abdominal signs. The urgency abdominal CT showed further reduction of the volume of the gallbladder and absence of gallstones inside, compatible with the migration of the last gallstone through the cholecysto-duodenal fistula. However at CT the gallstone was not revealed in digestive tract and it was spontaneously evacuated a few hours later. At discharge (occurred at day 27 after admission) the patient was in good conditions.

Discussion

Nowadays the gallstone ileus is a very rare condition (8); the preoperative diagnosis is difficult because of non-specific symptoms and signs (9). The average age of these patients is 74.3 years and the presence of comorbidities with increased surgical risk is not uncommon. In the literature an average diagnosis delay of 3.5 days (range 1-10) is reported (5,9). CT has been confirmed as the diagnostic gold standard (6). Plain abdominal radiography not always detects intestinal gallstone due to the presence of fecal material and because only 10% of the gallstones are radiopaque. Barium X-rays may show gallstone and fistula. Ultrasonography is used to confirm the presence of cholelithiasis, particularly in emergency (10). In 2004 Lassandro et al. (11) evaluated diagnostic methods on 27 patients suffering from gallstone ileus. The Rigler's triad (pneumobilia, small bowel obstruction, ectopic gallstone), that is pathognomonic of gallstone ileus, was present in only 14.81% of the patients submitted to abdominal X-rays, in 11% of the patients submitted to ultrasonography and in the 77.78% of patients submitted to abdominal CT. The CT offers significant advantages not only in diagnosis but also in treatment decisions (12). Laparoscopy is rarely used for diagnostic purposes (13).

Some authors suggest a one-time treatment, i.e. an enterolithotomy, for clinically stable patients (14); others argue that the enterolithotomy must be considered as the first-choice treatment, followed by the cholecystectomy with fistula repair, only for symptomatic patients (15-18). The associated fistula repair is not indicated in the first treatment of gallstone ileus in all the patients, since it is associated with high mortality. The treatment choice should be evaluated after a careful assessment of the risk to benefit ratio, considering the age of the patients, comorbidity, diagnostic delay, emergency surgery, and all the conditions that adversely affect the outcome (8). Sometimes the treatment can be conservative. In fact, when the gallstone size is up to a maximum of 2.5 cm, it can be spontaneously evacuated (18-20). However, the conservative treatment cannot be always recommended, since it leads to positive outcome only in case of partial bowel obstruction (21,22). Some authors have also demonstrated that the laparoscopic approach reduced the complications in selected high-risk patients (23).

In our case the surgical choice has been suggested by high surgical risk of the patient (ASA IV) and clinical findings. The gallstones appeared so impacted in the intestinal lumen that they would hardly migrate downwards. In addition, the recurrence of gallstone ileus, due to another stone in the gallbladder, is reported in the literature with a frequency equal to 4.7%. Moreover, Chou et al. (10) reported a subsequent migration of small and numerous gallstones after surgery but only 10% of these cases required a re-do. Then, facing the real risk of re-do with a higher operative mortality in cases of one-time surgery versus about 25% with enterolithotomy, in patients with high surgery risk (ASA IV) we preferred to perform only enterolithotomy. At re-do for the recurrence of gallstone ileus, we made the same considerations of the first operation. The last remaining gallstone in the cholecyst was 2 cm in diameter, and we assumed its possible migration, as reported in the literature (25).

Conclusion

Supported by the literature, we can state that the therapeutic options for intestinal obstruction by gallstone can be a one-stage procedure (enterolithotomy, cholecystectomy, and cholecysto-duodenal fistula repair) if the general conditions of the patient are good, or a two-stage procedure (enterolithotomy, which solves the intestinal obstruction, and cholecystectomy with fistula repair 4-6 weeks later) in symptomatic patients. In literature, the therapeutic strategy only with enterolithotomy is described as obsolete (25) due to possible cholangitis and recurrent gallstone ileus. However, in our clinical case, the delay of our observation, the general clinical con-

ditions, age and comorbidity of the patient (PAF pharmacologically converted), in addition to severe inflammation of the gallbladder and the duodenal wall suggested only enterolithotomy without any other procedure.

The most of patients with gallstone ileus are at a ripe

old age and are exposed to high surgical risk. They generally benefit from enterolithotomy alone that resolves the obstruction with the lowest surgical risk. The cholecystectomy with fistula repair should be necessary only in symptomatic patients.

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