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Gallstoneileus: A Rare Cause of Smallbowel Obstruction

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Abstract **Case Report**

Biliary ileus is a rare complication of gallstones secondary to a bilio-digestive fistula with passage of a macro calculus in the small intestine and which may be responsible for intestinal obstruction. Its misleading symptomatology often leads to diagnostic delay which worsens the prognosis. Computed tomography is the main imaging modality for diagnosis of gallstone ileus. We report the case of a 63-year-old patient presenting vomiting with diffuse abdominal pain and inability to pass gas or stool evolving for 3 days. Abdominal computed tomography revealed moderate aerobilia, an atrophic gallbladder with air bubbles associated with small bowel obstruction due to a jejunal calculus. Laparotomy revealed the presence of a cholecystoduodenal fistula, a sclero-atrophic gallbladder with the presence of a stone obstructing the lumen in the jejunum; an enterolithotomy was performed with a cholecystectomy and closure of the fistula path in a single operative step; the postoperative outcome werefavorable.

Keywords: Gallstone ileus, bilio-digestive fistula, obstruction, imaging, surgery.

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INTRODUCTION

Gallstone ileus is a rare cause of bowel obstruction secondary to the presence in intestinal lumen of a gallstone that has migrated through a bilio-digestive fistula. It should be suspected in patient presenting with bowel obstructive syndrome associated with aerobilia and ectopic localization of a stone.

We report a case of gallstone ileus in a 63-year-old patient admitted for a small bowel obstructive syndrome.

CASE REPORT

This is a 63-year-old man, treated for renal failure and known to suffering from gallbladder lithiasis, and who has presented for 3 days before his admission aggravated food vomiting on the day of his admission, becoming bilious with installation of diffuse abdominal pain and inability to pass gas or stool on examination: the patient was afebrile, hemodynamically stable. The abdomen was distended with diffuse abdominal tenderness. The digital rectal examination revealed the presence of stool on the rectal bulb; hyperleukocytosis was noted at 12,000, with inflammatory syndrome (CRP at 106). An abdominal CT revealed moderate aerobilia (figure 1a), a bile duct, an atrophic gallbladder seat of air bubbles associated with a small bowel obstruction upstream a hypodensejejunal calculus measuring 30 mm embedded in the digestive fluid of the distended jejunal loop. (Figure 1b); the diagnosis of gallstone ileus was retained. An ultrasound was performed demonstrating intra-luminal hyperechoic image generating a posterior shadow cone related to an endoluminal calculus (figure 1c). Surgical exploration revealed a cholecysto-duodenal fistula, a sclero-atrophic gallbladder with the presence of a stone obstructing the lumen in the jejunum measuring 30mm; an enterolithotomy was performed with a cholecystectomy and closure of the fistula path in a single operative step (Figure 2 and Figure 3); the postoperative outcome were favorable.

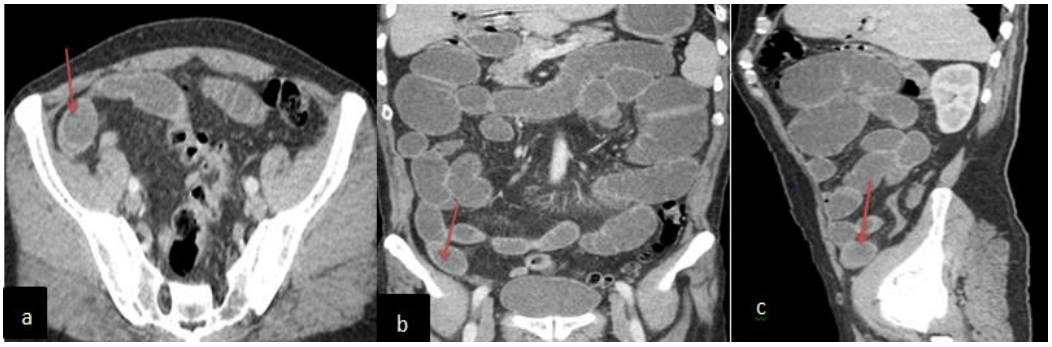

Figure 1: Abdomino-pelvic CT scan, axial (a), coronal (b) and sagittal reconstruction (c): small bowel distension upstream of a hypodense stone located in the jejunum. (Arrow)

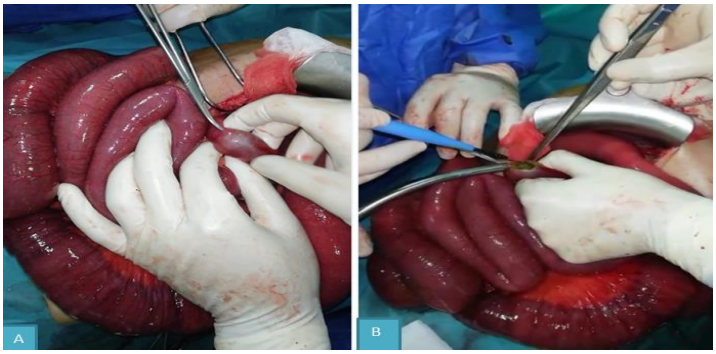

Figure 2: Peroperative Image demonstrating the stone before (A) and during (B) enterolithotomy

Figure 3: Peroperative Image of the stone after enterolithotomy

DISCUSSION

Biliary ileus is an intestinal obstruction related to the migration of a vesicular calculus into the intestinal lumen through a bilio-digestive fistula and represents 2% of all small bowel obstructions, but over 70 years of age, it could be responsible for 25% of the obstructions with a clear predominance of women [1].

Despite its name of ileus, it is indeed an organic occlusion by obstruction, due to the endoluminal duodenal passage, jejuno-ileal, or more rarely colic of one or more bulky vesicular stones (of diameter greater than 25 mm) through a bilio-digestive fistula to cause an obstruction in the small intestine [2].

Biliodigestive fistulas, through which the stones migrate, are an infrequent complication in patients with gallbladder lithiasis [8]. The locations of fistulas in decreasing order of frequency are [9]: cholecysto-duodenal: 76%; cholecysto-colic: 15%; cholecysto-choledociens: 3%; multiples: 3%; cholecysto-gastric: 2%; choledoco-duodenal: 1%.

Biliary ileus can also be a complication of endoscopic sphincterotomy or the result of intraoperative lithiasis dispersion during cholecystectomy [12].

The most frequent site of the calculus is the ileocecal valve (60% of cases) followed by the proximal ileum (25% of cases), the distal jejunum (9%), in the colon (8%) and less often in the duodenum (Bouveret syndrome) (3%). Rectal locations have been described [6].

The clinical signs are nonspecific with an insidious onset often leading to a diagnostic delay explaining the high rates of mortality and morbidity. The classic diagnosis by imaging is based on the Rigler triad which combines: aerobilia, ectopic gallstones and obstructive syndrome. This triad is absent in 50% of

cases [3]. 85% of gallbladder stones are radiolucent and aerobility is inconsistent (50% of cases) [10]. Ultrasound is often of little benefit, as it is hampered by digestive gas, it makes it possible to objectify a hyperechoic image with a shadow cone of the calculus, aerobilia and a sclero-atrophic gallbladder [11].

Computed tomography is the modality of choice for diagnosis of a biliary ileus. It is a rapid and reliable examination with a sensitivity, a specificity and a positive predictive value of 93%, 100% and 99% respectively [4, 5]. Multiplanar reconstructions make it possible to visualize most often a cholecysto-duodenal fistula and to precisely locate the transitional zone (ileal, most often). CT should rule out the presence of other stones that would constitute a source of postoperative recurrence [6], it also makes it possible to visualize the aerobility, even minimal, and objective the upstream occlusion. In our observation, the abdomino-pelvic CT was the only imaging modality performed, making the diagnosis by individualizing the jejunal calculus, the upstream small bowel obstruction and aerobilia.

The surgical management must be rapid. Two surgical approaches have been described: an isolated enterolithotomy, an enterolithotomy with treatment of cholecystodigestive fistula and cholecystectomy in one or two stages. The association of a biliary procedure or its realization in a second operative stage increases morbidity in the series reported. Importantly and remain for most authors unnecessary in the absence of subsequent symptoms [7].

CONCLUSION

Small bowel obstruction secondary to a gallstone that has migrated through a bilio-digestive fistula remains a rare cause of acute abdominal syndrome. Clinical diagnosis is difficult. The abdominal CT is of great diagnostic interest by making it possible to visualize the calculus, the aerobilia and sometimes the bilio-digestive fistula. The treatment is surgical based on an enterolithotomy associated or not with the cure of the cholecystodigestive fistula and the cholecystectomy.

Conflicts of Interest

The authors declare no conflict of interest.

Authors' Contributions

All authors have read and approved the final version of the manuscript.

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