

A Difficult Diagnosis

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ABSTRACT.

Gallstone ileus is a rare cause of mechanical bowel obstruction seen in patients with a history of cholelithiasis or cholecystitis. Its diagnosis is difficult since it presents vague and nonspecific symptoms. This is the case of a 69-year-old woman with a history of arterial hypertension and type 2 diabetes mellitus, without a surgical history, who is admitted to the emergency room due to abdominal pain. Her diagnosis is based on contrast X-ray images, computed tomography (CT) and upper gastrointestinal endoscopy. Surgery remains being the gold standard treatment.

Key words: Gallstone ileus, cholecystoenteric fistula, surgery

1 Introduction.

Among the causes of mechanical intestinal occlusion, gallstone ileus occurs in 1 to 4%, its etiology is the presence of a fistula between the gallbladder and the intestine. The fistula is formed by the force of mass and volume of a large gallstone as well as high condensation. The chronic inflammatory process with the previously mentioned physical effects is the cause of a cholecystoenteric fistula, the cholecystoduodenal

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being the most frequent site in up to 60% of cases [1]. In this way, it erodes the wall of the gallbladder and duodenum, allowing the passage of a giant stone into the intestinal lumen. Following intestinal peristalsis and due to the large size that they form, it becomes impacted and produces a clinical picture of intestinal obstruction in the narrowest anatomical site of the terminal ileum. This occurs between 25 and 72% of patients. [1, 2]

Cholecystitis as a history of gallstone ileus occurs in 0.3 and 1.5%. Diagnosis is made only in 50% of cases preoperatively, as symptoms are vague and nonspecific. [2, 3]

The variability of symptoms depends on the site where the stone is impacted and its presentation can be acute, subacute or chronic. The accompanying symptoms of acute gallstone ileus can be vomiting, constipation and sudden abdominal distention, unlike subacute gallstone ileus where the patient cannot evacuate but is able to pass gas, the chronic presentation also known as Karewsky syndrome, is characterized by periods of asymptomatic time interspersed with recurrent pain symptoms (caused by the passage of stones through the intestine) that can lead to complete obstruction [2, 3, 4].

2 Case report.

A 69-year-old female patient who as an important antecedent is a carrier of type 2 diabetes mellitus under management with metformin and glibenclamide and systemic arterial hypertension of 14 years of evolution under management with telmisartan. She denies previous surgeries, allergies, drug addiction and transfusions.

Her condition began two weeks prior to admission with intolerance to the oral intake, vomiting of gastrointestinal content and diarrheal stools, accompanied by colicky and intermittent pain in the epigastrium. On physical examination, she is conscious, cooperative, with vital signs: heart rate: 106 bpm, respiratory rate 24 rpm, blood pressure of 100/70mmHg and temperature 100.2 F. With dehydrated oral mucosa, cardiopulmonary without compromise, abdomen with significant distention, increased peristalsis with metallic noises and tympanitic abdomen, pain on medium and deep palpation, with no evidence of peritoneal irritation or acute abdomen. Murphy's sign absent and the rest with no data to comment on. Laboratories: minimum leukocytosis of $11.2 \times 10^3 \text{mm}^3$, neutrophilia of 76.9%, Hemoglobin 15.5 g/dL, Hematocrit 45.18%, Platelets $299 \times 10^3 \text{mm}^3$, Creatinine of 2.1mg/dL, Urea 129mg/dL, BUN 60.7 mg/dL, Total bilirubin of 0.6 mg/dL, GGT 85u/L, Alkaline Phosphatase 158 u/L, Glucose 200mg/dL.

A panendoscopy is performed seven days prior to admission, which visualizes: Hole between the first and second portion of the duodenum with signs of re-epithelialized mucosa (**Figure 1**). In simple computed tomography, a giant gallstone is observed in the intestinal lumen (**Figure 2**); Therefore, a planned surgical management was decided by exploratory laparotomy, finding significant dilatation of the small bowel loop (**Figure 3**) and locating the obstruction site at 4 ft 11 in. from the Treitz ligament and 1 ft 7 in. from the ileocecal valve, confirming that it was an ileal segment. An enterotomy was performed at the obstruction site and closure with the Heineke-Mikulicz technique, finding a giant calculus of 3.14 x 1.57 in. (**Figure 4**). The surgical procedure was concluded without complications.

Recovery of the patient is toward improvement with tolerance to the oral intake, presents bowel movements and vital signs within normality. It was decided that she was discharged home after 7 days and a check-up in the outpatient clinic with a water-soluble contrast swallow study performed, finding the contrast medium passed into the biliary tract Petren's sign. (**Figure 5**)

3 Discussion

Gallstone ileus is a pathology that is often underdiagnosed due to its unspecific clinical picture; It is essential to mention that in more than a third of patients there is no history of biliary colic or a history of cholelithiasic disease [2,5]. When the stone impacts the ileocecal valve, it is known as Barnard's syndrome. [6] Bouvaret's syndrome manifested by symptoms of upper intestinal occlusion, since the gallstone impacts the duodenum. This occurs only in 3% of patients diagnosed with biliary ileus. [1, 7]

In the description of the results of paraclinical studies, pneumobilia, distention of the intestinal loops and the presence of radiopaque image corresponding to the gallstone can be found. When water-soluble oral contrast is used and the passage of contrast into the bile duct is evident, it is known as Petren's sign. [3, 4]

The presence of the triad of Mordor characterized by sudden intestinal obstruction, a diagnostic history of cholelithiasis, and signs of acute cholecystitis may lead us to suspect this pathology. [7] Laboratory studies may present leukocytosis, impaired liver function tests, and in some cases jaundice, and it is usually accompanied by acid-base and electrolyte imbalance; all of this is unspecific. As part of the initial approach to any patient with intestinal obstruction, standing and decubitus abdominal radiographs provide a sensitivity of 40 to 70% for finding Rigler's triad, which consists of 10% radiopaque stones, pneumobilia called Gotta-Mentschler's sign, and the distention of intestinal loops; With two or three signs, the radiological diagnosis is confirmed, and the movement of the patient and change of position of the gallstone with a radiographic confirmation of the abdomen confirms Rigler's tetrad. [8]

In this case, none of the aforementioned existed. Ultrasound provides data of residual cholelithiasis, evidence of enterobiliary fistula, gallstone within the intestinal lumen, and aerobilia; all this is questioned since intestinal obstruction with loop distention makes it impossible to carry out this detailed cabinet study. On the other hand, computed tomography has a diagnostic sensitivity of 93% and 100% specificity. [9] In the clinical case that was documented, the simple abdominal computed tomography confirmed the clinical and endoscopic diagnosis.

Regarding the ideal management, there is much controversy since three alternatives are proposed depending on the characteristics of the patient and the experience of the surgeon. These options consist of: [2] [3]

- 1) Simple enterotomy (without planning a second surgical intervention)
- 2) Enterotomy + Cholecystectomy + Cholecystoenteric fistulectomy
- 3) Enterotomy and later 4 to 6 weeks cholecystectomy + cholecystoenteric fistulectomy

In the articles consulted, the recommendation to individualize each patient prevails, since the three alternatives present their risks and benefits, from performing a simple and not very aggressive procedure such as an enterotomy with a risk of recurrence of 5 to 8%, which although it is low in reported cases is associated with a high mortality of up to 16.9%. [10, 11, 12] In the case presented, option number one was made.

4 Conclusion.

Intestinal occlusion is a frequent diagnosis, however, as an etiology, gallstone ileus is not, this continues to be a diagnostic challenge for the physician. The clinical diagnosis is not specific, so it should be supported by image studies such as plain radiography of the abdomen in standing and decubitus, ultrasound, contrasted radiological studies and computerized axial tomography, in increasing order its sensitivity and specificity of the diagnosis of gallstone ileus. The treatment of gallstone ileus is surgical, its evolution is excellent, of the three procedures established in the literature, it must be chosen by individualizing each patient and in the surgical technique that the surgeon best masters. Finally, this manuscript evidences the pathology of gallstone ileus masked by a picture of intestinal occlusion and that becomes a watershed for the agglomeration of knowledge of the surgical galena community.

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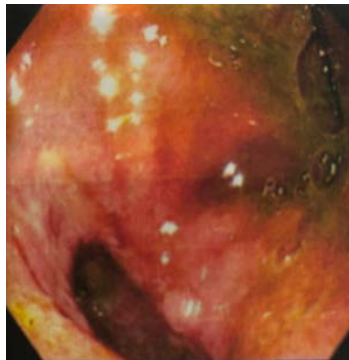


Figure 1: Cholecystoduodenal fistula by gastrointestinal endoscopy



Figure 2: CT with presence of hyperdense Image. (arrow)



Figure 3: Intestinal occlusion site by gallstone.



Figure 4: Giant Gallstone



Figure 5: Petren's sign