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Case Report

Bilioenteric Fistula as a Consequence of Cholelithiasis. A Case Report

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Abstract

Bilioenteric fistulas are a rare pathology that has a variable clinical presentation that appears as a complication of gallstone disease. A case of a 58-year-old female patient is reported who presents with abdominal pain located at the level of the right upper quadrant of high intensity and long evolution. Using imaging techniques, the diagnosis of cholecystitis and cholelithiasis is reached. However, during the intraoperative period, a cholecystogastric fistula is diagnosed accompanied by sepsis of biliary origin, so the patient is admitted to the intensive care service with general surgery follow-up. Later, she was sent to the Eugenio Espejo Specialties Hospital Quito-Ecuador for definitive resolution of her pathology.

Keywords: *Cholecystogastric Fistula; Diagnosis; Abdomen; Complications; Treatment*

Introduction

Bilioenteric fistulas are the result of an abnormal communication between the biliary system and the gastrointestinal tract, they occur spontaneously, most of the cases due to an untreated gallbladder lithiasis, as an initial complication. They are frequent entities because the incidence of biliary pathology is high and is the cause of digestive complications, which is why it is necessary to manage and diagnose in a timely and early manner. They can cause various clinical consequences; they can even lead to claudication of the patient if it is not resolved opportunely [16].

The anatomical sites in order of prevalence of biliodigestive fistulas are the small, large intestine or stomach, so their incidence depends on the place of the abnormal communication. Cholecystoduodenal fistulas are the most common, with a percentage of 65 to 80%, followed by cholecystocolic with 10 to 25% and cholescystogastric with only 5%. Choledochoduodenals are the least frequent with a percentage over 1% [14].

The symptoms of fistular disease are correlated with the characteristic clinical presentation of biliary pathology, predominantly pain in the upper hemiabdomen at the level of the right upper quadrant, mostly accompanied by fever, leukocytosis, and elevated liver markers. The main diagnosis is made with abdominal ultrasound, upper gastrointestinal endoscopy and cholangioresonance, being the gold standard within the complementary examinations since the contrast medium allows to see the communication of the bile duct with the gastrointestinal tract; However, it must be differentiated with Mirizzi syndrome and Bouveret syndrome, because they present the same symptoms, differing only in the place where the abnormal connections are established [1].

The risk factors that increase the possibility of bilioenteric fistulas are related to a history of gallstone disease or repetitive cholecystitis, elderly women, chronic diseases such as high blood pressure, type 2 diabetes mellitus, hypercholesterolemia, use of oral contraceptives and obesity. Among the complications that biliodigestive fistulas produce are a biliary ileus characterized by the passage of the stone from the gallbladder to the intestine or stomach and generating an intestinal obstruction [14].

The techniques proposed in the advancement of biliodigestive fistula surgery are correlated with the definitive closure of the anatomical defect through cholecystectomy, accompanied by the closure of the gastric wall, this proposed therapeutic option has managed to reduce long-term complications and reduce the appearance gallstone ileus [17].

Case Presentation

A 58-year-old female patient with significant personal pathological history; obesity, hypercholesterolemia on treatment with statins like rosuvastatin 20 milligrams daily for 3 years, arterial hypertension diagnosed 10 years ago with ACE inhibitors and Duet type calcium antagonists (Losartan 100 mg + Amlodipine 5 mg) once a day and gallstones.

She was admitted to the emergency service with an abdominal pain of 24 hours of evolution, of moderate intensity located at the level of the right hypochondrium, having as an apparent cause the ingestion of copious food accompanied by nausea and vomiting on several occasions.

On physical examination, conscious patient oriented in the three spheres with Glasgow 15/15 (V4 O5 M6), presenting a soft depressible abdomen painful on palpation, both superficial and deep at the level of the right upper quadrant, with presence of vesicular focality and positive Murphy's sign on auscultation with the presence of normal air-fluid noises.

Complementary tests were requested, blood tests showing the presence of 16,700 leukocytosis, leukocyte formula with left shift, 82% neutrophils and 17% lymphocytes. In the blood chemistry TGO 32, TGP 42, Gamma GT 150, Alkaline Phosphatase 267, other complementary tests within normal parameters.

Abdominal ultrasound with a distended gallbladder with a thickened, edematous wall, measuring 5.7 mm with multiple stones in their interior measuring 9, 12 and 14 mm and the presence of biliary sludge in abundant quantity, in addition to a sign of Murphy ultrasound positive.

Given the clinical and radiological suspicion of acute cholecystitis and cholelithiasis, an assessment is made by the general surgery service, who decide on surgical resolution. A diagnostic laparoscopy was performed, finding a vesicular plastron that compromised the intestinal loops and the anterior aspect of the stomach, subsequently an exploratory laparotomy plus cholecystostomy and cholecystectomy with cleaning of the cavity was performed.

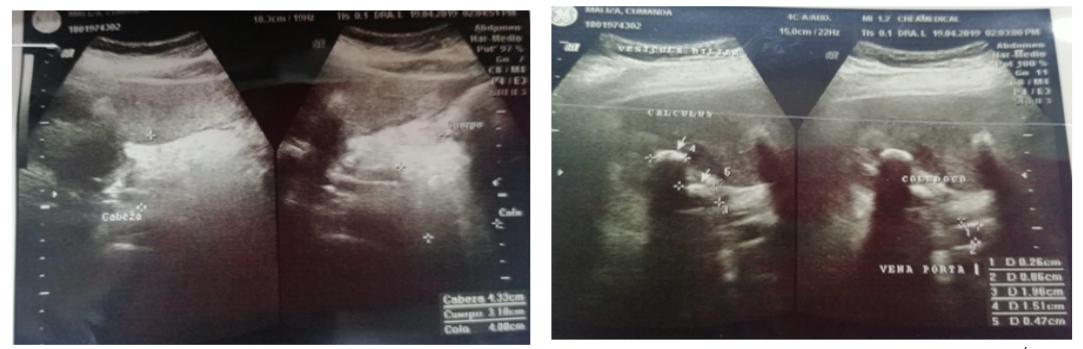

Figure 1: *Source: Data from the patient's medical history. General Surgery Service of "Hospital General Ambato".*

After the location and complete release of the vesicular plastron, a cholecystogastric fistula is found incidentally with a moderate amount of purulent fluid, accompanied by opening of the gastric wall towards the plastron and necrosis of the same, with a perforation that is 5 cm of the pylorus for which remission of the edge of the gastric wall plus raffia of the stomach is performed in 3 planes.

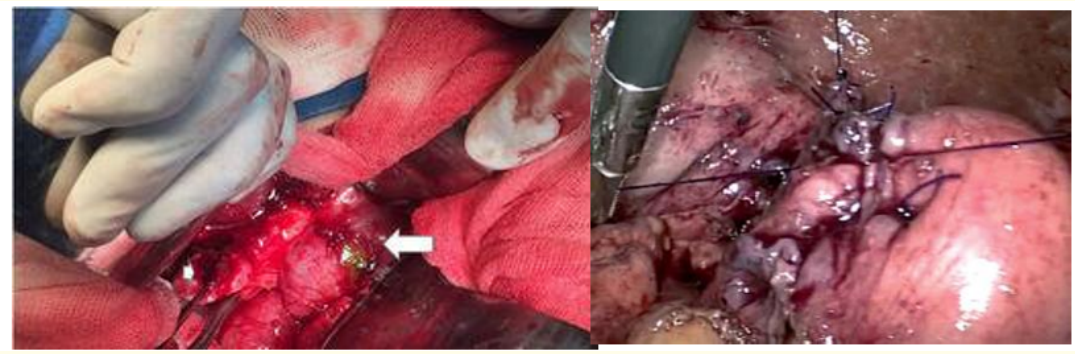

Figure 2: *Source: Data from the patient's medical history. General Surgery Service of "Hospital General Ambato".*

The patient spent 14 days hospitalized in general surgery with verification and control of drains, to monitor and control infection sites at the gallbladder level. However, during her stay, she presented hemodynamic decompensation, septic shock of abdominal origin, biliary peritonitis and perforation of the extrahepatic bile duct, for which she was admitted to the intensive care unit for 7 days, she was operated on 2 times to try to resolve her pathological condition without to be able to correct the cholecystogastric fistula and the perforation of the bile ducts, which was the condition responsible for the multiple complications. As we do not have professionals and the necessary equipment to perform hepatobiliopancreatic surgery, it is decided to refer to a more complex unit "Hospital de Especialidades Eugenio Espejo" Quito-Ecuador urgently to undergo surgery and resolve this pathology.

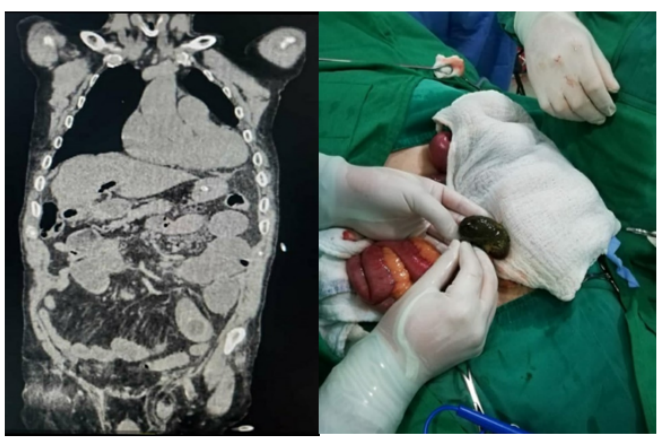

Figure 3: *Source: Data from the patient's medical history. General Surgery Service of "Hospital General Ambato".*

Discussion

The first cases of bilioenteric fistulas were described by Courvoiser since 1890, as a late and rare complication of cholecystitis. All internal biliary fistulas have a common cause of perforation of the gallbladder wall, produced by a stone that, when pushing the wall by intraluminal pressure, perforates the gallbladder and the anatomical structures that are around [2].

The incidence of bilioenteric fistulas in patients with cholelithiasis is 0.15% to 8% and occurs in 1% to 5% of all biliary tract surgeries. In Ecuador this pathology is rare, presenting 1 to 2 cases out of 10,000 people according to the studies carried out by the Society of Surgery of the Eugenio Espejo Hospital in Quito in 2016 [3].

Biliodigestive fistulas are related to an inflammatory process that produces less vesicular arterial flow, venous and lymphatic drainage, which causes an increase in intraluminal pressure that favors the process of necrosis, perforation and fistulization to neighboring structures; in most cases the process is precipitated by a gallbladder stone that erodes the walls of the gallbladder and the digestive tract, important since it is the main cause of perforation and establishment of the definitive fistula between the bile duct and the gastrointestinal tract [5].

Colicky abdominal pain is the common symptom, occurring in intermittent episodes, so patients may take three to eight days before going to the hospital, the presentation is usually insidious due to the so-called trumbling phenomenon, in which the stone obstructive migrates continuously [6].

Imaging examinations are the cornerstone to aid in the diagnosis of this pathology, the simple abdominal X-ray is considered the basic tool for the diagnosis of complications of biliodigestive fistulas. Within the non-specific pattern of intestinal obstruction produced by a stone are the so-called air-fluid levels, loop dilation, presence of pneumobilia, which is related to Borman's triad. The presence of two of them is pathognomonic for gallstone ileus, but it occurs in about 40 to 50% of patients [9].

Among the diseases that can be related and sometimes confused with biliodigestive fistulas are: Mirizzi Syndrome which is characterized by a rare and chronic inflammation caused by a stone impacted in the Hartmann's bag with partial or complete obstruction of the

main bile duct. It is considered a prolonged complication of biliary stone disease and interferes in the preoperative diagnosis of cholecystogastric fistula, as well as complex therapeutic conduction [7]. On the other hand, Bouveret Syndrome, which is characterized by being an infrequent disease manifested as gastric obstruction secondary to the impact of a stone in the duodenal bulb. It is a rare cause of obstruction of the stomach outlet tract due to the stone being impacted through a cholecystoduodenal fistula into the duodenum, resulting in intestinal obstruction [12].

Surgical treatment of bilioenteric fistulas consists of meticulous dissection of adhesions, cholecystectomy, and resection of the fistulous tract. Among the therapeutic options for gallstone ileus, there is: an enterolithotomy, followed by a cholecystectomy and closure of the fistula in a single surgical time, with a mortality rate of about 17% [5]. Another procedure is simple enterolithotomy with a mortality of 12% but with a risk of recurrence of gallstone ileus from 2 to 8%, considered as the best treatment option in patients with poor conditions, such as dehydrated, septic and peritonitis patients, who have difficulty tolerating a prolonged surgical time [16]. Finally, the two-stage procedure consists of an enterolithotomy followed by cholecystectomy and closure of the fistula in an interval of 4 to 6 weeks, being associated with minimal mortality [19].

Mortality in other studies for biliodigestive fistulas is approximately 10 to 15% caused by multiple complications, including pancreatitis, external biliary fistula, bile duct injury, acute myocardial infarction, pneumonia, diabetic ketoacidosis, fluid and electrolyte imbalance, pulmonary thromboembolism, intestinal obstruction due to adhesions. Mortality caused by cholecystogastric fistulas is around 30%, the same that increases due to delay in diagnosis, nosocomial pneumonia and severe acute cholangitis [15].

Conclusion

- Cholelithiasis is the main factor for perforation of the gallbladder wall and the formation of a fistula with adjacent gastrointestinal structures.
- Cholecystoduodenal fistula is the one with the highest incidence among the reported cases of this pathology, while cholecystogastric fistula is very rare and is related to 30% of mortality if an adequate diagnosis is not reached and is not resolved timely.
- It is important to recognize the comprehensive management and proper use of diagnostic and therapeutic methods when treating similar cases. An adequate imaging study in this case, the Computed Axial Tomography is essential to establish the pertinent diagnosis to be able to make an optimal decision, as well as the use of endoscopic retrograde cholangiopancreatography.

Conflicts of Interest

None.

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