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Case Report

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Mirizzi Syndrome in Adults

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Abstract

Background: *Laparoscopic surgery has been considered the gold standard for the treatment of uncomplicated biliary colic. However, there are certain conditions that increase the risk and complications associated with this procedure in the acute phase, requiring other interventions and procedures.*

Case Presentation: *We present the case of a 78-year-old man admitted to the hospital complainig of severe abdominal pain in the right hypochondrium and intermittent choluria in the last week. Abdominal ultrasound shows no conclusive signs of acute cholecystitis. Given the persistence of abdominal pain and fever, and after surgery was ruled out for urgent intervention, percutaneous transhepatic cholangiography was performed and showed intermittent cystic obstruction due to a large stone. The patient was treated with percutaneous drainage and antibiotics. Delayed laparoscopic surgery was performed successfully.*

Conclusion: *Mirizzi syndrome (MS) is a serious complication of gallstone disease and presents a diagnostic challenge. The aim of this study is to show how identifying a rare underlying cause of common presentation can lead to improved patient outcomes.*

Keywords: Mirizzi Syndrome, Surgical Treatment, Preoperative Diagnosis

List of Abbreviations

MS: Mirizzi Syndrome
CT: Computed Tomography
ERCP: Endoscopic Retrograde Cholangiopancreatography

1. Background

Acute cholecystitis should be suspected in a patient presenting with right upper quadrant or epigastric pain, fever and leukocytosis. A positive Murphy's sign on physical examination supports the diagnosis. However, these findings are not sufficient to stablish the diagnosis. Several studies have evaluated the accuracy of ultrasonography in the diagnosis of acute cholecystitis, showing a sensitivity and specificity around 88% and 80%, respectively [1]. Abdominal CT scan is useful to role out specific complications of acute cholecystitis.

Laparoscopic cholecystectomy has been one of the most commonly performed operations worldwide. While the most common indication for operation is uncomplicated biliar colic, there are a number of conditions that can increase the difficulty and risk of this procedure.

Mirizzi syndrome (MS) named after the Argentinean surgeon Pablo Luis Mirizzi, who described in1893 a rare complication of cholelithiasis, in which there was obstruction of the common hepatic duct due to extrinsic compression from a large impacted stone in the neck of the gallbladder or cystic duct [2]. Laparoscopic surgery presents a challenge because the dense adhesions and edematous inflammatory tissue can cause distortion of the normal anatomy and increase the risk for biliary injury, open conversión and procedure-related complications rates [3]. Preoperative diagnosis is crucial to avoid complications during treatment.

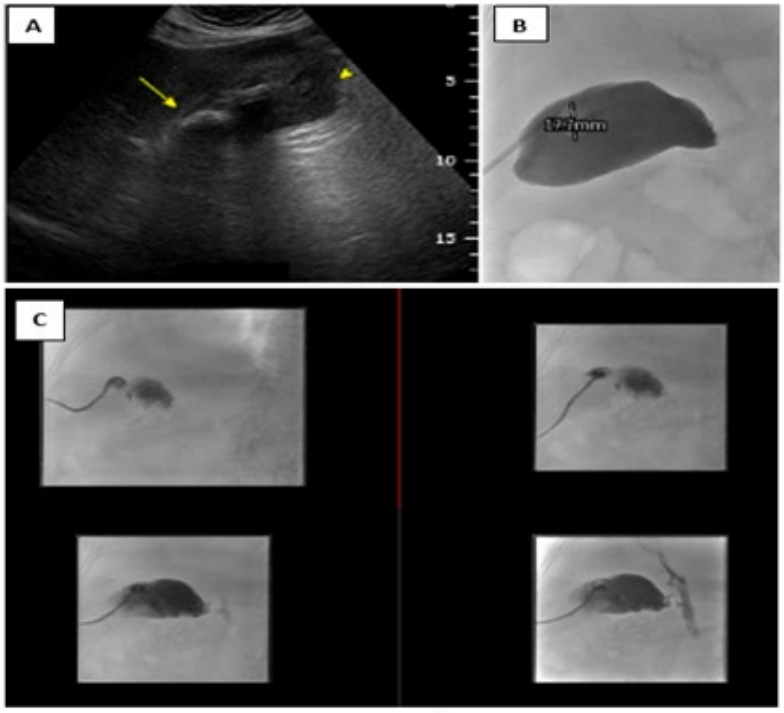
2. Case Presentation

We present the case of a 78-year-old man admitted to the hospital complaining of severe abdominal pain in the right hypochondrium and intermittent choluria in the last week, no nausea, vomiting or acholia. His medical history included severe major depressive disorder with psychotic symptoms refractory to medical treatment, which responded to five sessions of electroconvulsive therapy, and history of left inguinal hernia with surgical management (hernioplasty according to Lichtenstein

technique). No cardiovascular disease or risk factors such as hypertension or diabetes.

At admission, the patient had arterial blood pressure of 140/90 mmHg, oxigen saturation of 92%, temperature 36.8oC, qSOFA 0/3 and abdominal pain in the right hypochondrium with a positive Murphy sign. Blood chemistry panel showed white blood count 21.200 mm3 with 18.000 neutrophils; normal transaminases, total bilirrubin 0.9, PCR 86, procalcitonin 0.19. Urianalysis was normal. Abdominal ultrasound showed a gallbladder with lithiasis and biliary sludge, a wall of normal thickness, without conclusive signs of cholecystitis. The patient was treated with intravenous hydratation, pain control and intravenous antibiotics (piperacillin-tazobactam). Given the persistence of abdominal pain and fever, an abdominal CT scan was made showing an acute cholecystitis complicated with perforation. After surgery was ruled out for urgent intervention, percutaneous transhepatic cholangiography (PTC) was performed for collections drainage. This procedure initially showed contrast passage from the gallbladder to the common bile duct and subsequently a large gallstone in the neck of the gallbladder, this time with absence of contrast to the common bile duct, which caused intermittent cystic obstruction. The patient was treated with percutaneous drainage and antibiotics with progressive improvement. Delayed laparoscopic surgery was performed 30 days after medical discharge, without post-operative complications and the patient was discharged home.

2.1. Descriptive Legend for Figures



a. Ultrasound (Mirizzi Syndrome). A large shadowing stone impacted in the infundibulum of the gallbladder obstructs the common hepatic (extrinsic compression and associated inflammation).
b. Percutaneous Transhepatic Cholangiography (PTC) shows a 17.7 mm stone in the infundibulum. This procedure is preferred when endoscopic access is technically challenging or visualization of the biliary tree is limited.
c. PTC catheter drainage to descompress. The biliary tree is accessed percutaneously using a needle inserted through the parenchyma of the liver into an intrahepatic bile duct, then contrast opacified under. An external catheter is placed.

3. Discussion and Conclusions

MS is more prevalent in adults, particularly in the female population [4]. It occurs in up to 6% of patients with cholecystolithiasis, and results from extrinsic compression of the common hepatic duct by impacted gallstones in the cystic duct, which can lead to fistulisation [2,5]. The pathophysiology of MS is similar to other causes of cholecystitis and biliary obstruction. The clinical presentation is non-specific, and patients typically have longstanding history of gallstones [4]. It commonly presents with symptoms similar to cholecystitis but may be confused with other obstructing conditions such as common bile duct stones and ascending cholangitis [2,4].

Numerous systems exist to classify MS, but according to the literature, the Cesendes classification is the most commonly used [5]. It describes five types of MS according to the presence of a cholecystobiliary fistula and its corresponding severity, and whether a cholecystoenteric fistula is present. While ultrasound (US) and magnetic resonance cholangiopancreatography (MRCP) are commonly used for the diagnosis, literature shows that the US is the most frequently used method of initial diagnosis [3,5,6-8]. Preoperative diagnosis is difficult and often missed, but is crucial to avoid complications during treatment.

Treatment of MS typically involves cholecystectomy. Anterograde cholecystectomy in MS is easy to damage branches

of right hepatic artery and the bile duct, because of the severe inflammation and dense fibrosis at the Calot's triangle, that increases intraoperative damage [3,9]. When combined with the application of ERCP, a laparoscopic management of MS by well-trained surgeons is feasible and safe [3].. Identifying MS versus other common causes of obstructive jaundice is crucial to avoid complications.

Ethical Approval and Consent to Participate

This work has written and signed consent to publish the information from the patient.

Consent for Publication

This work has written institutional consent for publication.

Availability of Data and Materials

The datasets used and/or analysed during the current are available from the corresponding author on reasonable request.

Competing Interests and Funding

None of the authors have financial or personal relationships with people or organizations that could inappropriately influence their work. There are no conflicts of interest to declare.

Author Contributions

All authors made substantial contributions to the information submitted and have read and approved the manuscript.

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