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Case Report

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Mirizzi Syndrome: A Case Report

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ABSTRACT

Mirizzi syndrome is an uncommon cholelithiasis complication marked by obstructive jaundice caused by extrinsic constriction of the main hepatic duct by a gallstone impacted in the gallbladder neck or cystic duct. Diagnosis is frequently missed due to its non-specific appearance and similarity to acute cholecystitis. We discuss the case of a 73-year-old female with Mirizzi syndrome type Va, who presented with a cholecystoduodenal fistula with choledocholithiasis. A laparoscopic cholecystectomy with common bile duct exploration was planned, however due to extensive adhesions and a fistula, an open cholecystectomy was performed instead. Mirizzi syndrome remains a diagnostic and therapeutic difficulty due to its uncommon occurrence and non-specific appearance. Early detection is critical to preventing complications such as bile duct damage or fistula formation.

Keywords: *case report; cholecystectomy; fistula; mirizzi syndrome.*

INTRODUCTION

Mirizzi syndrome is a rare complication of cholelithiasis characterized by obstructive jaundice due to compression of the bile duct due to a stone trapped in the cystic duct or gall bladder neck. [1,2] It was first characterized by German physician Kehr in 1905 AD, later it was named after the Argentinean surgeon Pablo Luis Mirizzii.[3]

It typically presents with non-specific symptoms and sometimes with symptoms similar to cholecystitis which can make the diagnosis challenging and frequently missed.[1,3] It has a unique nature of affecting common bile duct and common hepatic duct rather than its own duct and have 4 types.[4] It occurs in approximately 1% people but in some underdeveloped countries in Latin America, the prevalence was documented as high as 5.7%.[1]

Here, we presented a case report of a 73 years old female diagnosed as Mirizzi syndrome type Va.

CASE REPORT

A 73 year old lady presented to the outpatient department with the complaint of abdominal pain for 4 months, which worsened within 5 days. The pain was sharp, colicky in nature that was aggravated on fatty meals and relieved on analgesics. Pain was associated with dyspepsia, water brash and bloating. There was one episode of fever a day back before visiting the hospital, but maximum temperature was not recorded. There was no history of yellowish discoloration of body, generalized body itching, vomiting, and loss of appetite. She had undergone vaginal hysterectomy 3 years back and gave a history of menopause 23 years back. Family and medical histories were insignificant.

At the presentation, the patient was conscious but ill looking. General examinations were fair but had yellowish discoloration in bulbar conjunctiva and skin. On physical examination, tenderness was present over the epigastric and right hypochondriac region, bowel sounds were present and Murphy's sigh was negative. Per rectal examination showed normal anal tone. Relevant investigations were done. USG (Abdominal and Pelvis) showed a calculus of size approximately 10.8 mm noted in gall bladder lumen, contracted gall bladder which was sludge in common bile duct and common bile duct was not seen clearly. Liver function test was performed that showed total bilirubin level 1.3 mg/dl, AST 400 U/L, ALT 263 U/L, ALP 559 U/L.

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Magnetic Resonance Cholangiopancreatography (MRCP) revealed gall bladder being partially contracted and single filling measuring 14 mm size in lumen. The common bile duct had 3 well-defined filling defects representing calculi of approximately 17 mm, 20 mm, and 22 mm. The common bile duct had resultant dilation. The case of cholelithiasis with choledocholithiasis with resultant biliary obstruction was suspected. Medications were provided after admission, that includes Inj vitamin K, IVF D5, Inj Pantoprazole, Inj Buscopan, Inj Paracetamol.

Laparoscopy cholecystectomy with common bile duct exploration was planned. It was performed on the 4th day of admission, but later converted to open cholecystectomy. It revealed the stomach was attached to the liver bed, presence of choledochoduodenal fistula, severely contracted gall bladder with sludge, dilated common bile duct with multiple stones, and presence of dense peri-gallbladder adhesions. Primary repair of common bile duct was done with Maxon 4-0 RB. Postoperatively, the patient was managed with IV Fluids, Antibiotics, Analgesics and supportive care. Drain was removed on the 6th Post operative day and the patient was discharged on the 10th post operative day along with oral medications.

DISCUSSION

Mirrizi syndrome is a chronic inflammation and extrinsic compression of common hepatic and common bile duct from impacted gallstone in infundibulum of gallbladder, which eventually lead to mucosal ulceration and formation of cholecystobiliary fistula.[5] The symptoms vary according to the severity of obstruction. They can present with right upper quadrant pain, jaundice, fever and chills, nausea and vomiting, and dark urine and pale stool.[6,7] Similarly, in this case the patient presented with abdominal pain, dyspepsia, water brash, and bloating. Mirizzi syndrome has been reported in 0.63% to 5.7% of patients with gallstones and prevalence ranging from 0.7% to 1.4% among patients who have undergone cholecystectomy. Accurate diagnosis of Mirizzi syndrome poses significant challenges to clinicians and radiologists alike, due to the lack of clinical manifestations or diagnostic techniques with fully reliable sensitivity and specificity.[2,7] Although the incidence of gallstones tends to increase with age, there appears to be no significant gender predisposition nor for any particular ethical population.[8]

Ultrasound is typically the first-line screening tool due to its safety and effectiveness, while ERCP is often used to confirm the diagnosis when needed. Surgery remains the preferred treatment approach, with meticulous techniques recommended in minimizing the risk of injury during the procedure and to repair any damage to the common bile duct.[9] Endoscopic retrograde cholangiopancreatography (ERCP) is considered the gold standard for diagnosing Mirizzi syndrome, as it clearly demonstrates compression of the hepatic duct caused by a stone impacted in the gallbladder neck.[10] It serves both diagnostic and therapeutic roles, enabling stone extraction and stent placement. When integrated with duodenoscopy, laparoscopy, and choledochoscopy, it facilitates a minimally invasive therapeutic approach.[11,12] Surgical treatment is standard for Mirizzi syndrome, involving stone removal and, when fistulas are present, partial cholecystectomy. While inflammation and adhesions in Calot's triangle make laparoscopic cholecystectomy controversial, it is considered safe and effective for type I and II cases when performed by skilled surgeons.[12] Conversely, Magnetic Resonance Cholangiopancreatography (MRCP) was performed in the patient. It is non-invasive and has lower post procedural pancreatitis and bleeding. Although open surgery remains the standard treatment for Mirizzi syndrome, minimally invasive techniques have emerged as viable alternatives in selected cases. These approaches are associated with shorter recovery periods, less blood loss, and reduced operative times, but their use is predominantly confined to patients with type I Mirizzi syndrome, where the anatomical complexity is lower and outcomes are more favorable.[13] Surgical treatment is the definitive management for Mirizzi Syndrome (MS). In Type I MS, either open or laparoscopic cholecystectomy is typically performed. For Type II MS, repair of the common bile duct (CBD) along with total or subtotal cholecystectomy is done. For Types III and IV MS, procedures such as choledochoduodenostomy or Roux-en-Y hepaticojejunostomy are preferred. While some surgeons consider laparoscopic cholecystectomy safe, it is technically more challenging and carries a high conversion rate to open surgery, ranging from 31.7% to 100%.[14] Alike to it, laparoscopic cholecystectomy was converted to open cholecystectomy in this case.

Mirizzi syndrome remains a diagnostic and therapeutic difficulty due to its uncommon occurrence and non-specific appearance. Early detection is critical to preventing complications such as bile duct damage or fistula formation. Imaging modalities such as MRCP are critical for diagnosis, with ERCP remaining the gold standard when accessible. In this case, a high-grade (Type Va) MS with cholecystoduodenal fistula demanded an open cholecystectomy. Surgical management remains the last resort, with the approach determined by the type and complexity. It takes a high index of suspicion to get the greatest results for patients, particularly in elderly patients with chronic gallstone disease and signs of biliary obstruction. Understanding Mirizzi syndrome is essential for surgeons to reduce surgical complications and give appropriate preoperative preparation.

Conflict of Interest: None.

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