

MIRIZZI SYNDROME-RARE CAUSE OF MAJOR BILIARY COMPLICATIONS. CASE REPORT

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ABSTRACT:

Mirizzi syndrome is a rarely observed complication of gallstone disease, causing major biliary problems, if not diagnosed previously. It was described in 1948 by P. L. Mirizzi and presents unusual lodged gallstone in either the cystic duct or most frequently in Hartmann pouch of the gallbladder. Impaction, acute obstruction and wall ischemia are causative for inflammation and abscess formation. External common hepatic bile duct compression and obstruction result in clinical presentation of intermittent or constant jaundice. We report 57-year-old male with extensive mechanical icter, fever, nausea and vomiting, and upper abdominal pain in epigastria from five days. Abdominal US evaluation showed 17mm stone localized in infundibulum and shrunk of gallbladder. MRCT revealed impacted stone, chronic tissue inflammation, involved common hepatic duct with stricture. Mirizzi syndrome was diagnosed.

Intraoperatively was found an impacted gallstone in the Hartmann pouch, extensive fibrosis of hepatoduodenal ligament and abscess cavity formation in the Callot's triangle with engagement of common hepatic bile duct wall. Antegrade cholecystectomy was made and T drain was placed. Second operation and Roux-Y limb anastomosis was performed after unsuccessful tentative for recanalization of distal CBD with clamping of T drain.

Key words: Impacted gallstone, Callot's triangle abscess, cystic duct variation, common hepatic duct stricture, T-drain.

INTRODUCTION

Impaction of unique large or multiple small gallstones between neck of gallbladder and confluence of cystic duct and common hepatic duct results pathologic changes in normal bile flow and local and systematic complications. The process of inflammation, wall ischemia and external compression lead to erosion of the involved tissues and duct structure of common hepatic duct or cholecystocholedochal fistula formation. Despite modern advances in imaging

diagnoses, Mirizzi syndrome presents challenge surgery treatment situation caused by presentation of rare anatomical variation of cystic duct and total change of normal anatomy after long standing inflammation. Good surgical knowledge for diagnosis and reconstruction is needed.

CASE REPORT

After consultation at emergency room, a 57-year-old man was admitted in department of surgery for resuscitation, diagnosis and treatment. He presented intensive jaundice (bilirubin rate: 4.5 mg/dL), fever 38°C, upper right abdominal pain, predominantly in epigastria and right subcostal region, nausea and vomiting, and asthenia for last 24 hours. Abdominal US reveal a 17 mm stone incorporated in Hartmann's pouch, pericholecystitis, and medially to the stone, liquid collection approximately located in Callot's triangle. ERCP revealed stone obstructed cystic duct, filiforme passage with narrowing of CHD (common hepatic duct) (**Fig.1**). No visible confluence of cystic duct and CHD.

Intraoperatively scrunched gallbladder, pericholecystitis, intensive fibrosis and edematous of hepatoduodenal ligament. After bimanual palpation thought Winslow's foramen, stone was found in neck of gallbladder. Medially was found "cystic" collection with pus in Callot's triangle and evacuated (**Fig.2**). Microbiological probe was positive in second day for E. coli. Antegrade mobilization of gallbladder helped to find impacted stone and mobilized the cystic duct to CHD. No fistula or bile leaks were discovered.

Proximally to inflamed part of CHD was placed T-drain, with long branch to be "stent" and prevent structure and decompress biliary tree. Intra operative control cholangiography showed low grade narrowing of CHD. The T-drain was removed after standard daily clamping and patient discharged from hospital. At first month same patient presents with subconjunctival icter and control ERCP revealed CHD stricture. Plastic stent was placed for 30 days. Follow-up and control cholangiography confirmed complete recovery.



Fig. 1. ERCP showed external compression on the CHBD

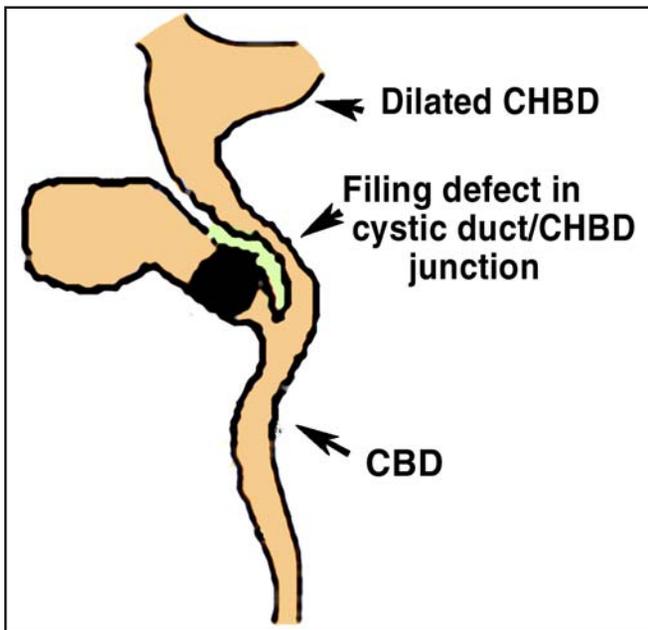


Fig. 2. External compression on the CHBD caused by impacted biliary stone

DISCUSSION

Mirizzi syndrome, described in 1948, is an unusual dislodgement and impaction of gallstone into the neck of gallbladder or Hartmann's pouch, causing inflammatory processes and biliary duct system disorders such as external compressing of the common bile duct and followed complications: empyema of gallbladder, abscess, cholecystocholedochal fistula, CHD structure and bile ducts obstructions. [1]

Impaction results in the Mirizzi syndrome in two ways: chronic or acute inflammatory changes lead to gallbladder shrunken and secondary structure of CBD, or large impacted stones lead to compression, ischemia and necrosis, and cholecystocholedochal communication. [2]

In 1982, Mc Cherry et al proposed a two stage classification of syndrome, based on the ERCP and PTC imaging study:

- a) Type I- simple external compression of the CHD
- b) Type II- presence of a cholecystocholedochal fistula [3]

In 1989 a new classification of patients with MS and cholecystobiliary fistula was presented. [4] It includes four types:

- 1) Type I – no fistula found
 - Type IA- Presence of the cystic duct
 - Type IB- Obliteration of the cystic duct
- 2) Type II-IV - Fistula present
 - Type II- Narrowing smaller than 33% of CHD diameter
 - Type III- Narrowing between 33-66% of CHD diameter
 - Type IV- Narrowing larger than 66% of the CHD diameter

diameter

Final results by different types are presented as follows: 11% with Type I lesions, 41% had Type II, and Type III and IV-44% respectively 4%.

By frequency, Mirizzi syndrome occurs between 0.7-1.4% of patients with cholecystectomy and 0.1% of all with gallstones.

Clinical presentation includes symptoms of obstructive jaundice: recurrent cholangitis, jaundice, fever, right upper quadrant pain and elevated liver test enzymes.

Diagnosis is made by physical examination, imaging study such as US, MRCT, and liver functional test.

Differential diagnosis includes choledocholithiasis, Carroli's disease, hilar cholangiocarcinoma, pancreatic head cancer.

Treatment of Mirizzi syndrome is challenging for a surgeon. Operative methods depend on type of pathology.

In Type I partial cholecystectomy is a method of choice: open or laparoscopic. If inflammation may permit total, usually antegrade with tube drain is the best. [5]

In case of inflamed CHD wall placement of T-tube may help to prevent future stricture. Late complications as biliary stricture are treated endoscopically by insertion of stent. [6]

In Type II Mirizzi syndrome opportunities are

dependent of biliary communication and surrounding inflamed tissues:

a) Corlette, Bismuth et al. recommend partial cholecystectomy, oversuturing of the gallbladder cuff and insertion of a T-tube through the fistula as an adequate treatment for Type II. [7]

b) Hepaticojejunostomy with Roux-Y limb is recommended by many authors as adequate procedure in case of major necrosis and unrepairable defect of CHD wall.

Choledochoplasty with neighborhoods tissues and cholecystoduodenostomy has been described, but not have introduced as good results. [8-9]

In conclusion, Mirizzi syndrome is rare pathological condition that cannot diagnose during physical examination. It requires imaging study. Management is to determine the type and best surgical procedure at time of laparotomy. In Type I case, simple cholecystectomy is method of choice. If CHD wall inflammatory changes are found, T-tube placement is recommended to avoid disruption, leaks and stricture. Type II-IV patients require complex management. Total isolation of inflamed segment with Roux-en-Y hepaticojejunostomy may have the best long-term outcome.

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