Mirizzi Syndrome Management

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Objective: The aim of this study was to assess the clinical presentation and management of Mirizzi syndrome. **Study Design:** Descriptive study. **Patients and Methods:** During 2 year at Ittefaq Hospital Lahore 10 patients came with Mirizzi syndrome by chance. All patients presented with upper abdominal pain, jaundice and palpable gallbladder. ERCP was inconclusive in 5 patients preoperatively. Rest of 5 patients undergo surgery and on table cholangiogram was performed. **Results:** All the patients undergo surgery after pre-operative work up. ERCP in 5 patients and peroperative cholangiogram in 5 patients was inconclusive. Nine patients had type-I Mirizzi syndrome and 1 patient had type-II Mirizzi syndrome. Simple cholecystectomy was performed in 9 patients but in 1 patient (type-II) after cholecystectomy T-tube was placed in common bile duct. Postoperatively T-tbe was removed after T-tube cholangiogram. **Conclusion:** Mirizzi syndrome is an uncommon presentation of gallstone. Its diagnosis is confirmed on cholangiography and can be treated surgically safely.
Key Words: Gallstones, Obstructive jaundice, Gallstone impaction, Hartman's pouch.

Mirizzi syndrome is the unusual presentation of gallstones. Impaction of a large gallstone (or multiple small) in the Hartmann pouch or cystic duct results in the Mirizzi syndrome in 2 ways: 1. Chronic and/or acute inflammatory changes lead to contraction of the gallbladder, which then fuses and causes secondary stenosis of the CHD, or 2. Large impacted stones lead to cholecystocholedochol fistula formation secondary to direct pressure necrosis of the adjacent duct wall. Increasing, these phenomena are seen not as distinct and separate steps but as a part of continuum (Pemberton 1997, Hazzan 1999).

The presence of a long cystic duct in parallel with the CHD or a low insertion of the cystic duct into the common bite duct (CBD) also increases the likelihood of this syndrome. In 1994 Toscapo reported a low CBD insertion in as many as 18% of his patients who underwent surgical cholangiography.

The process of impaction of a calculus with inflammatory changes that leads to eventual erosion of the involved walls and fistula formation has led some authors to create a classification system for the Mirizzi syndrome.
In 1982, McScherry et al proposed a stage classification based on the results of endoscopic retrograde cholangiopancreatiography (ERCP) and percutaneous transhepatic cholangiography (PTC). Type I is simple external compression of the CHD, whereas type II involves the presence of a cholecystocholedochal fistula.
In ensuring years, these 2 categories were further sub-classified into the following groups to aid in the surgical treatment of patients.
Type 1 No fistula present.
Type 1A Presence of the cystic duct.
Type 1B Oblitration of the cystic duct.
Type 2 – IV fistula present
Type II Defect smaller than 33% of the CBD diameter.
Type III Defect 33-66% of the CBD diameter.
Type IV Defect larger than 66% of the CBD diameter.

Patients and methods
This was a descriptive study at Ittefaq Hospital Lahore. During the last 2 years thirty patients with obstructive jaundice admitted in the Department of Surgery. These patients admitted either through out-patient department or through Accident and Emergency Department. These 30 patients presented with obstructive jaundice or acute cholecystitis. After workup it was found that 12 patients had obstructive jaundice due to choledocholothesis and 8 patients had malignant obstructive jaundice. While 10 patients no definite cause was found except USG determines distended gallbladder and impacted gallstones in the Hartman pouch. In these 10 patients ERCP done in 5 patients preoperatively but no stone or sticture was found in common bile duct. Rest of the 5 patients ERCP could not be done due to non-affordability of patients, so peroperative cholangiogram was planned in these patients. On these finding we made the provisional diagnosis of Mirizzi syndrome.

Results:
During the 2 years these patients with Mirizzi syndrome admitted by chance. Age ranges from 26 to 70 years with median age of 52.77 years. The main symptoms in these patients were upper abdominal pain, jaundice, fever off and on and vomiting. Physically examination reveals jaundice, tenderness in right hypochondrium and palpable gallbladder in all these patients.

Liver function tests done in these patients. Bilirubin ranges from 3 to 7.2mg/dl with mean (4.7mg/dl) while alkaline phosphatase ranges from 679 to 1418mg/dl (mean 917mg/dl). Ultrasonography determines distended gallbladder with multiple gallstones and 4 patients had mild dilatation of biliary changes but no stone detected in CBD. As ERCP was done in 5 patients and no significant finding detected in these patients on ERCP. After full preoperative work up we performed surgery in all these 10

patients. Peroperatively we found that gallbladder was distended and stones impacted at Hartman's pouch and CBD was clear of stones but in one patient had cholecystocholedochal fistula. We performed on table cholangiogram in 5 patients and no stone or sticture was detected in common bile duct and free flow of contrast in the duodenum. We performed cholecystectomy in 9 patients and in 1 patient we placed T tube in CBD after cholecystectomy. Postoperatively these patients remained alright and discharged home after T. tube cholagniogram.

Discussion:

Mirizzi syndrome is a rare presentation of gallstones. Mirrizi syndrome in United States of America occurs approximately 0.7–1.4% of all patients undergoing cholecystectomy and in 0.1% of all patients with gallstone disease (Hassan, 1999) Mirrizi syndrome is more common in the elderly but any patient with cholelithiasis is at risk (Seneles 1989).

Mirizzi syndrome has no consistent or unique clinical features that distinguish it from other more common forms of obstructive jaundice. Symptoms of recurrent cholangitis, jaundice, right upper quadrant pain and abnormal hepatic serum biochemical findings may or may not be present (Strugnell, 1995). In one study of 17 patients in whom Mirizzi syndrome was found at surgery, only 10 (59%) had presented with a recent history of jaundice. Twelve (71%) of these patients had elevated preoperative alkaline phosphatase levels.

Generally it is difficult to differentiation between Mirizzi syndrome and obstructive jaundice with physical examinations alone. Ultrasound is the first line diagnostic examination. The diagnosis of Mirizzi syndrome can be confirmed on cholangiography. Initially preoperative cholangiography is indicated to determine that the cystic duct present and to ensure that the CBD is free of calculi (Baer, 1990).

Mirizzi syndrome type I (i.e compression without a fistula) is generally treated as minimally as partial cholecystectomy, which leaves the neck of gallbladder in place and long standing inflammation and fibrosis leads to occlusion of cystic duct (Bar, 1990).

Mirizzi syndrome type II-IV i.e., (fistula present) require more complex intervention. Type-II generally treated successfully with either cholecystectomy and closure around a T tube or partial cholecystectomy with in situ T tube placement (Penonton, 1997).

Other treatment options for larger defects (type III and IV) treated with cholecystectomy and subsequent suturing of the remaining gallbladder flaps around T tube is one option (McShery 1982).

Others suggest biliary enteric bypass via roux-en-Y choledochojejunostomy or a choledochoduodenostomy to reduce the mortality and morbidity and CBD stricture (Baer, 1990).

In this study we treated 10 patients with Mirrizi syndrome 9 patients has type I and 1 patient type-II Mirizzi syndrome. All the patients have raised alkaline phosphate and bilirubin. We performed cholecystecomy in type-I Mirizzi syndrome. One patient had type-II Mirizzi syndrome. We performed cholecystectomy and T-tube placed in the common bile duct because there is small cholecystocholedochal fistula. Peroperatively we again assessed the common bile duct and in 5 patients on table cholangiogram was done but no stone was detected in the common bile duct but only external compression to common bile duct. All the patient recovered. Another study by Chan at Singapore also treated 18 patients with Mirizzi syndrome. In this 11 patients had type-I and 7 patients had type-II Mirizzi syndrome. In type-II 4 fistulas were closed surgically the other 3 had biliary bypass procedures.

Conclusion

Mirizzi syndrome is unusual presentation of gallstones. Its diagnosis preoperatively is difficult but confirmed peroperatively. Type I is successfully treated with cholecystectomy but type II – IV is treated with cholecystectomy and t tube placement or bilioenteric bypass.

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