



## A CASE REPORT ON CHOLEDOCHOPLASTY WITH GALL BLADDER WALL PEDICLED FLAP IN A CASE OF MIRIZZI SYNDROME

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**ABSTRACT** Presenting a case report on novel technique of common hepatic duct repair using gall bladder wall pedicled flap with T-Tube drainage in a case of chronic gall stone disease with mirizzi syndrome with difficult cholecystectomy. A 80 year old male patient with pain in abdomen in right hypochondriac region since three months with yellowish discoloration of skin and sclera. USG s/o minimal distended gall bladder with multiple calculi without cholecystitis. MRCP s/o cystic duct calculus (1.2 \* 1.8 cm) at its insertion into common bile duct compressing bifurcation of common hepatic duct causing central and peripheral IHBRD with mirizzi syndrome. Patient planned for open cholecystectomy and common bile duct exploration and then intra-op due to sclerotic gall bladder and difficult cholecystectomy choledochoplasty with pedicle gall bladder flap repair of defect of common hepatic duct with T tube drainage was done.

**KEYWORDS :** MIRIZZI SYNDROME , CHOLEDOCHOPLASTY , GALL BLADDER WALL PEDICLED FLAP

### INTRODUCTION

Mirizzi Syndrome is caused by an impacted stone in the cystic duct resulting in biliary obstruction. The four components that comprise Mirizzi syndrome are as follows:

1. A long course of the CD that runs parallel to the common bile duct.
2. The impaction of stone at the neck of the gallbladder or in the CD.
3. An obstruction of the bile duct by inflammation or stone.
4. Intermittent or persistent jaundice with or without cholecystitis.

1948, Dr. Pablo Mirizzi described a syndrome of common hepatic duct (CHD) obstruction — “syndrome del conducto hepatica”—in the setting of cholelithiasis and cholecystitis.

Mirizzi postulated that a physiologic and anatomical sphincter comprised of circular smooth muscle lies within the CHD; he attributed obstruction of the CHD to the spasm of the CHD sphincter.

However, this hypothesis proved incorrect, as there is no internal CHD sphincter, and CHD obstruction results from an external compression caused by an impacted stone at the neck of the gallbladder or the CD. Cholecystobiliary fistula is a rare entity first described by Puestow in 1942. Subsequently, more cases were reported. This fistula represents the same disease process as Mirizzi syndrome, as the impacted stone at the gallbladder neck or the CD eventually erodes its way into the CHD, creating a cholecystocholedochal fistula

A number of classifications using a variety of factors, including presentation (ie, acute vs chronic), presence of anatomic variant of the CD, and cause of obstruction (ie, inflammation or stone), have been described. McSherry and Csendes classifications are the most commonly used in clinical practice.

### Csendes Classifications:-

Type IA : when the extrinsic compression in the (common hepatic duct) CHD is caused by stones impacted in the cystic duct or in the infundibulum.

- Type IB denotes absence of cystic duct.
- Type II: Presence of cholecystocholedochal biliary fistula involving one third of the circumference of the CHD wall.

Type III: Presence of cholecystocholedochal biliary fistula with a diameter over two thirds of the circumference of the CHD wall

- Type IV: Presence of cholecystocholedochal biliary fistula (CCBF) which involves the entire circumference of the CHD wall.
- Type V: This is a new addition by the Csendes group includes any of the Mirizzi in the presence of a cyst enteric fistula.

Choledochoplasty using a cuff of the gallbladder remnant may be successful. The technique is described by SANDBLOM where a partial cholecystectomy is performed anterogradely, with preservation

of the infundibulum, followed by opening of the bottom of the gallbladder and removal of the stones from its interior followed by choledochoplasty.

Using the infundibulum of the gallbladder to close to the orifice in the common hepatic duct has the advantage of being vascularised and of similar mucous membrane to that of the biliary duct. Closure of the defect in the common hepatic duct should be completed without tension and with the mucous membrane of the gallbladder stump juxtaposed to the mucous membrane of the duct

In choledochoplasty, we utilise a pedicled graft of gallbladder remnant in treatment of Mirizzi syndrome In type IB choledochoplasty using 5 mm cuff of the gall bladder is recommended.

In type II lesions, the procedure depends on the size of the fistula; if it is less than one-third of the common duct diameter, choledochoplasty using 5 mm cuff of the gall bladder is recommended, and patients with fistula sizes between 1/3 and 2/3 of the diameter of the common duct should undergo choledochoplasty with 10 mm cuff of the gall bladder.

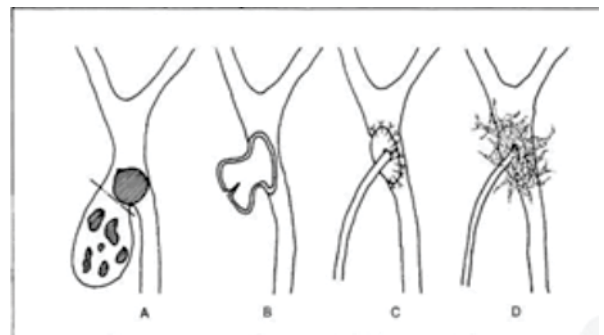


Fig 1—Case 2: A. Cholecystocholedochal fistula caused by calculus impacted at Hartmann pouch and simultaneous complete obstruction of common duct. B. Posterior gallbladder and cystic duct wall preserved intact. C. Choledochoplasty over T tube with pedicle. D. Choledochoplasty completed as in case 1.

**Figure 1: Choledochoplasty With T Tube Drainage Sources: [www.googleimages.com/Arch-surg/Vol111/Feb/1976](http://www.googleimages.com/Arch-surg/Vol111/Feb/1976)**

### Case Report

A 80 year old male patient with known hypertension with no other known co morbidities came to our opd with complaints of Pain in the Right upper quadrant since 2 to 3 months. Pain was sudden in onset , colicky in nature , mild in intensity , intermittent in nature , with history of radiation to back but no history of any referred pain ,pain aggravated on food intake and relieved on oral analgesics. Pain episode was associated with nausea and loss of appetite .History of yellowish discoloration of eyes present since 3 to 5 days .No history of any vomiting, fever , constipation ,obstipation. On examination patient

was conscious and oriented to time , place and person. Vitally stable , icterus present (mild).PER ABDOMEN: soft , no distension, no guarding , no rigidity . Only mild tenderness was present in the right hypochondriac region. Digital rectal examination was within normal limits. LIVE FUNCTION TESTS:Total Bilirubin:1.70 Direct

Bilirubin0.96Indirect Bilirubin 0.7 ALP : 1068

Rest of the routine blood investigations found to be within normal limits. USG ABDOMEN : It was suggestive of distended gall bladder with few hyper echoic calculi with largest measuring 10mm with no peri GB fluid with mild central IHBRD with normal CBD

MRCP : It was suggestive of partially distended gallbladder with no evidence of GB wall thickening or pericholecystic fluid

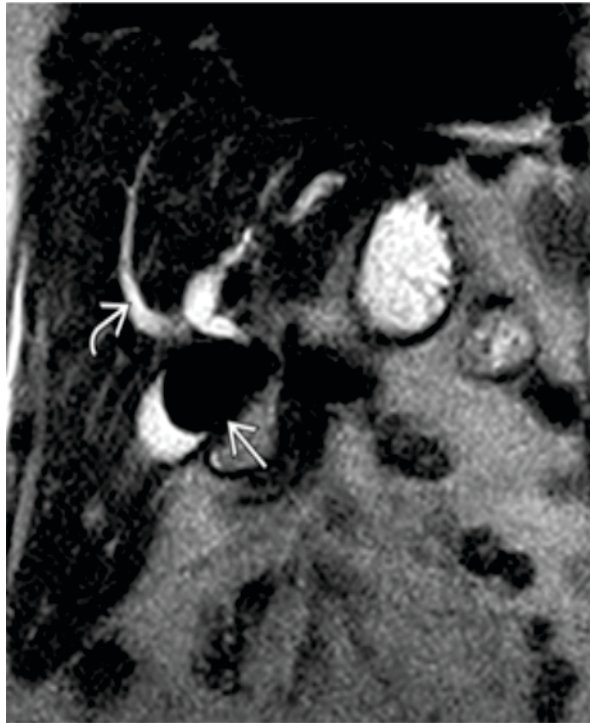


Figure2 : MRCP

A t1/t2 hypointense 1.2 \*1.8 cm sized calculi is noted in cystic duct near insertion into CBD , seen compressing bifurcation of CHD with resultant mild central and peripheral IHBRD {TYPE 1 MIRIZZI SYNDROME }

- Rest of the CBD appears normal in calibre approx. measuring 6mm
- No evidence of any calculi within CBD Smooth distal tapering of CBD

**TREATMENT** :In view of the above clinical findings and imaging suggestive of cholelithiasis with mirizzi syndrome causing obstructive jaundice with no cholangitis , patient was taken up for open cholecystectomy under general anesthesia

**Intraop Findings**

1. Kocher's incision was taken
2. Dense adhesions were present involving the liver, gall bladder, omentum, and transverse colon which prevented the development of adequate and safe dissection planes,
3. The adhesiolysis continued to be difficult, but once the gallbladder was dissected : large gall stone was palpated within the neck of the gallbladder.
4. Cholecystostomy with the removal of the stones was done.
5. The anterior gallbladder wall was first opened near the fundus, and the gallbladder wall was first dissected off the stone and then the stone from the posterior wall. When removed, the stone measured approximately 3.5 centimeters
6. Defect in the common hepatic duct was noted involving ONE THIRD of the circumference of the duct {TYPE II MIRIZZI}.
7. Viable gallbladder pedicled wall to form flap to repair the defect in

the biliary tree . The mucosal surface of the gall bladder wall was juxtaposed to the lumen of the common ducts and secured in place with a polyglactin 2-0 round body simple interrupted suture technique with T-TUBE in situ through the defect itself with GB wall sent for HPE .

8. The remnant gallbladder stump was closed and oversewn in a continuous fashion 9.One drain was placed within the Morison pouch . The abdomen was then closed in mono layer using polyesterpolydiaxnone loop 1 continuous interlocking suture technique. Immediately, postoperatively, the patient was managed in the intensive care unit but was transferred to a step down unit shortly after on postoperative day two.



Figure 3: Intra-op Image

**Post Op Period And Follow Up**



Figure 4: Postop T-tube Cholangiogram

- Post op period was uneventful and patient was discharged with T TUBE in situ after removal of abdominal drain.
- Post op t-tube cholangiogram after 6 weeks showing no bile leak and t tube was removed.
- Post of HPE :gall bladder wall biopsy s/o chronic cholecystitis

**CONCLUSIONS**

The method of CHOLEDOCHOPLASTY is technically simple to implement ; it prevents the development of insolency of sutures ,corrosive strictures , the duration of the use of frame drainages characteristic of traditional surgical interventions, while preserving the natural passage of bile into the duodenum

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