ORIGINAL RESEARCH PAPER

Unani Medicine

KEY WORDS:

LONG PARALLEL CYSTIC DUCT IN OPEN CHOLECYSTECTOMY - A CASE REPORT

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ABSTRACT

Congenital anomalies of gall bladder and cystic duct are rare developmental abnormalities of embryogenesis and may be encountered during cholecystectomy. Misidentification of normal anatomy and anatomical variations leads to major post operative complications. We report a case of 40 year old female patient presented with mild right upper quadrant pain with nausea and vomiting, patient was afebrile, non-jaundiced and USG shows multiple small gall bladder stones with 11.8mm stone in dilated CBD with mild IHBRD. On exploration there is long cystic duct runs parallel to CBD in a common fibrous sheath inserted at the distal end of CBD. Open cholecystectomy was successfully completed. Drain was placed and removed after 24 hours. Patient tolerated regular diet on 2nd post operative day and was discharged on 7th day with uneventful post operative period.

INTRODUCTION

The Gall Bladder, Liver and biliary ductal system develops from hepatic endodermal diverticulum of the foregut at the 4th week of development through a complex process, failure of the normal development results in various anomalies of the biliary ductal system. [1, 2, 3] Misidentification of normal anatomy and the presence of anatomical variations contributes to the occurrence of major post operative complications especially biliary injuries which in turn causes significant morbidity or even mortality.[4] Sound knowledge of the normal anatomy of the extrahepatic biliary tract as well as its surgical implication to ensure a safe surgery and avoid hazardous and potentially disastrous complications.[5]

We report a case of anatomical variant of cystic duct which was found during surgery in a patient with cholelithiasis and choledocholithiasis posted for cholecystectomy along with choledocholithotomy.

CASE REPORT

A 40 year old female patient was admitted with right upper quadrant pain which is dull in nature radiates to right scapular region from the last 1 year, which is occasionally associated with nausea and vomiting but not with fever. There were two episodes of biliary colic. Abdominal examination revealed a soft, non tender flat abdomen. Murphy's sign is negative. Blood pressure was 112/80 mm Hg, pulse rate was 90 beats per min. The patient was afebrile and not jaundiced. Laboratory investigations revealed normal liver function test, coagulation profile and other preoperative investigations including chest X-ray and ECG. USG shows multiple small gall stones with thick gall bladder walls (3.5 mm). CBD dilated upto 10 mm with 11.8 mm stone in the distal CBD with mild IHBRD (chronic calcular cholecystitis with choledocholithiasis) (Fig. 1). After written informed consent patient was scheduled for open cholecystectomy with choledocholithotomy. On exploration, the liver was normal, gall bladder was found covered with greater omentum and is filled with multiple small gall stones with thick gall bladder wall and duodenum was loosely adherent to the neck of the gall bladder and CBD was dilated. After meticulous dissection, callot's triangle was identified. Cystic artery was then identified, ligated and separated. A wide long bile duct at the site of cystic duct, resembling the CBD emerged which runs parallel to the dilated CBD and appears as double lumen CBD (Fig 2). It was freed completely at a length of 7 cm upto its entrance at the distal end of the CBD (Fig 3). After complete separation cystic duct was ligated. After ligation of cystic duct per - operative cholangiography was done, it shows long cystic duct which runs parallel to the common bile duct with a single stone present in the distal part of it with no evidence of stone or filling defect in the common bile duct, cystic duct was then divided, gall bladder removed from the liver bed and stitched with catgut. After cholecystectomy, dilated CBD was palpated for any stone but there is no evidence of stones per operatively. Drain placed in the sub hepatic space. Abdomen closed in layers. Drain was removed and she also tolerated regular diet on the second post operative day. Open cholecystectomy was performed successfully with uneventful post operative period until discharge.

DISCUSSION

Systematic knowledge of anatomical variations in hepatobiliary system is important during surgical procedures, as misinterpretation contributes to major postoperative complications like biliary injuries.[6] Anatomical variants of the cystic duct and cystico hepatic junction may increased the risk of bile duct injuries occurring in 18- 23% of cases and the rate of injury varies from 0- 2%. [7,8]

The cystic duct most often joins the extrahepatic bile ducts approximately half way between the porta hepatis and the ampulla of vater. However, the point at which cystic duct joins the extrahepatic bile ducts is variable ranging from high (at the level of porta hepatis) to very low (at the level of ampulla). The cystic duct has a parallel course relative to the extrahepatic bile duct in 10.6% of patients and varies in length from 1.5 cm to 9.5 cm as in our case in which cystic duct is about 8 cm in length and joins the extrahepatic bile duct near to the ampulla.[9] More often a long parallel course of cystic duct and extrahepatic bile duct implies a common fibrous sheath as in our case. [9]This type of variation may leads to ligation of cystic duct too close to common bile duct which results in stricture of bile duct and also results in severe iatrogenic injuries like inadvertent ligation or transection of extrahepatic bile ducts. In addition, an unusually long cystic duct remnant may be left after cholecystectomy upto 6 cm. [10] Most injuries to cystic duct usually occurs when it runs parallel to the common bile duct and is encased in a common fibrous sheath and the separation between the two is not apparent during the surgery.

Some authors reported low insertion of cystic duct into common bile duct as a predisposing factor for common bile duct stone formation. They reported that patients with low cystic duct insertion presented with significantly higher rate (74.24%) as compared to those patients who did not have low cystic duct entry (48.56%) and it shows that low cystic duct insertion may affect bile duct flow which may leads to choledocholithiasis. [11]

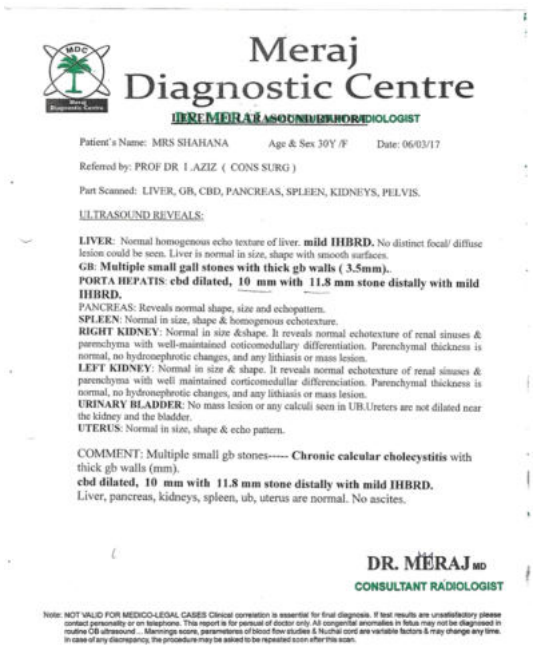
Now a days, multiple non invasive modalities permits depiction of the normal anatomy as well as disease processes of the cystic duct including computed tomography (CT), percutaneou transhepatic cholangiography (PTC), endoscopic retrograde cholangiopancre atography (ERCP), intra operative cholangiogr aphy and magnetic resonance cholangiopancreatogr aphy (MRCP).

Assessment with ERCP has been considered as gold standard method for identifying biliary tree anatomy[9] with cystic - hepatic junction detection in more than 70% cases [7] but it is invasive in nature so it is not recommended as routine imaging examination. [12, 13, 14, 15] Intra operative cholangiography is most frequently used to delineate the anatomy of biliary tree and to diagnose the bile duct

stones. However, its routine use remains controversial. [16]MRCP is a non invasive diagnostic technique providing high quality cross sectional and projection images of the biliary tree and its complete non invasive nature makes MRCP as the investigation of choice for choledocholithiasis. [16,12]

CONCLUSION

Although this cystic duct anomaly is not a new finding but this case stresses the operative difficulties during cholecystectomy, these difficulties emerges as a result of obscure anatomy due to fibrosis or anatomical variations of biliary tree.



Meraj Diagnostic Centre

HERE MERAJ ASSOCIATES FOR RADIOLOGIST

Patient's Name: MRS SHAHANA Age & Sex 30Y /F Date: 06/03/17

Referred by: PROF DR I .AZIZ (CONS SURG)

Part Scanned: LIVER, GB, CBD, PANCREAS, SPLEEN, KIDNEYS, PELVIS.

ULTRASOUND REVEALS:

LIVER: Normal homogenous echo texture of liver. **mild IHBRD.** No distinct focal/ diffuse lesion could be seen. Liver is normal in size, shape with smooth surfaces.
GB: **Multiple small gall stones with thick gb walls (3.5mm).**
PORTA HEPATIS: **cbd dilated, 10 mm with 11.8 mm stone distally with mild IHBRD.**
PANCREAS: Reveals normal shape, size and echopattern.
SPLEEN: Normal in size, shape & homogenous echotexture.
RIGHT KIDNEY: Normal in size &shape. It reveals normal echotexture of renal sinuses & parenchyma with well-maintained coticomedullary differentiation. Parenchymal thickness is normal, no hydronephrotic changes, and any lithiasis or mass lesion.
LEFT KIDNEY: Normal in size & shape. It reveals normal echotexture of renal sinuses & parenchyma with well maintained corticomedullar differenciation. Parenchymal thickness is normal, no hydronephrotic changes, and any lithiasis or mass lesion.
URINARY BLADDER: No mass lesion or any calculi seen in UB.Ureters are not dilated near the kidney and the bladder.
UTERUS: Normal in size, shape & echo pattern.

COMMENT: Multiple small gb stones----- **Chronic calcular cholecystitis** with thick gb walls (mm).
cbd dilated, 10 mm with 11.8 mm stone distally with mild IHBRD.
Liver, pancreas, kidneys, spleen, ub, uterus are normal. No ascites.

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Note: NOT VALID FOR MEDICO-LEGAL CASES Clinical correlation is essential for final diagnosis. If test results are unsatisfactory please contact personality or on telephone. This report is for perusal of doctor only. All congenital anomalies in fetus may not be diagnosed in routine O/B ultrasound .. Mannings score, parameters of blood flow studies & Nuchal cord are variable factors & may change any time. In case of any discrepancy, the procedure may be asked to be repeated soon after this scan.

FIGURE 1

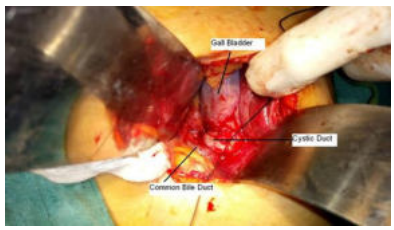

FIGURE 2

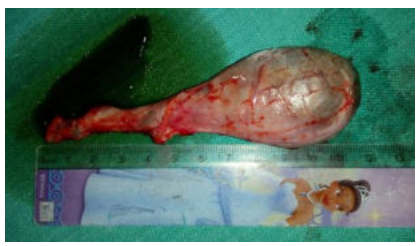

FIGURE 3

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