

## CHOLEDOCHOLITHIASIS ASSOCIATED WITH LEFT INTRAHEPATIC BILE DUCT STONE : REPORT OF A CASE

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### SUMMARY :

*Extra and intrahepatic bile duct stones may be associated with cholelithiasis. These stones may cause a number of serious complications like cholangitis or pancreatitis. That's why they have to be extracted by means of some operative or nonoperative procedures.*

**Key Words:** *Choledocholithiasis, Intrahepatic Bile Duct Stone.*

### INTRODUCTION

A case of choledocholithiasis is reported, associated with left intrahepatic bile duct stone. The majority of stone formation takes place in the gallbladder while a few in the extrahepatic bile ducts. Acute cholangitis develops in the presence of bile duct obstruction and infection, and occurs in patients with common bile duct stones. Common bile duct is explored in 15% of all cholecystectomies and the incidence of coexistent common bile duct stone is 65% (1). The incidence of stone formation in the common hepatic, right and left hepatic and intrahepatic ducts is 50% in some Asian countries, while 0.6-3 in Western countries.

### CASE REPORT

A 30-year-old woman was admitted for investigation of right upper quadrant and epigastric pain with a duration of one month. Her history revealed nothing to aggravate the pain. Nausea and vomiting that she described were not related to meals. Recently, she had two attacks of chills and fever associated with jaundice and acholic stools.

On physical examination, she had scleral icterus. Other findings were normal.

The results of routine laboratory tests were normal except for the liver function tests: serum total/direct bilirubin: 6.09/5.30 mg/dl, alkaline phosphatase (AP): 398 U/l, aspartate aminotransferase (AST): 184 U/l, alanineaminotransferase (ALT): 206 U/l, gammaglutamil transferase (GGT): 307 U/l, lactate dehydrogenase (LDH): 280 U/l. Hepatitis B antigen was negative. Her abdominal ultrasound revealed slight dilation in left intrahepatic bile ducts and echogenities suggesting air in the right intrahepatic ducts. No pathologic finding could be detected in the gallbladder. Common bile duct was dilated (18 mm) and an 15 mm echogenity suggesting a stone was demonstrated. Endoscopic retrograde cholangiopancreatography (ERCP) revealed stones in distal common and left intrahepatic bile ducts (Fig. 1).

Endoscopic sphincterotomy was performed and the stone in the distal common bile duct was

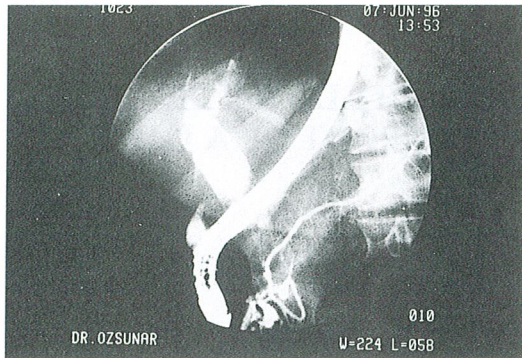


Fig - 1 : ERCP, demonstrating stones in the distal common and left intrahepatic bile ducts.

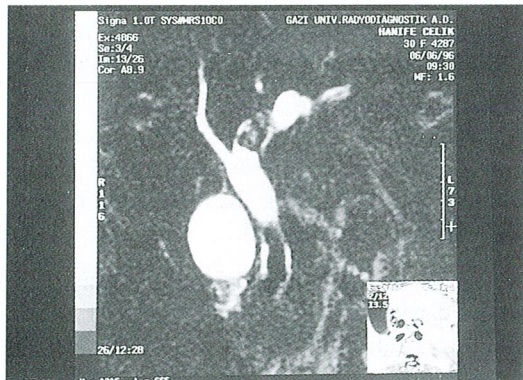


Fig - 2 : MR-cholangiography, demonstrating dilation and hypointense areas suggesting stones in the left intrahepatic and common bile ducts.

extracted. The magnetic resonance cholangiography after the procedure demonstrated dilatation and hypointense areas, suggesting stones in the left intrahepatic and common bile ducts (Fig. 2).

The patient underwent laparotomy. At surgery, the gallbladder was hydropic and there was a palpable stone in the distal common bile duct. After the removal of the gallbladder and choledochotomy, a 5.5x1.5 cm stone was extracted from the left intrahepatic duct (Fig. 3). Then, a choledochoduodenostomy was performed.

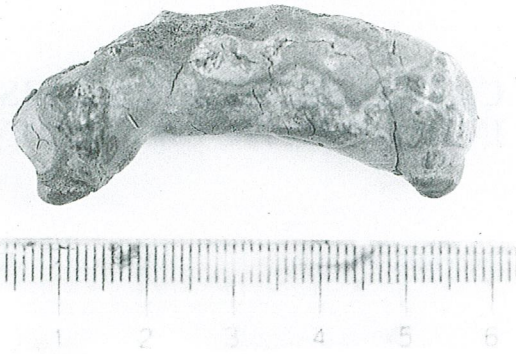


Fig - 3 : The stone extracted from the left intrahepatic bile duct.

The postoperative course was uneventful and the patient was sent home at the seventh postoperative day.

#### DISCUSSION

Common bile duct stones are seen in 10-25 % of patients with symptomatic cholelithiasis, while the incidence of intrahepatic ducts stones is 0.6-50 % (2-4). Common bile duct stones are the most common cause of acute cholangitis. They are generally classified as primary (arising de novo in the bile duct) and secondary (arising in the gallbladder and passing from there into the common bile duct). Primary stones, with an incidence of 4-56 %, are often smooth, yellowish-tan in color, calcium bilirubinate in nature, while 10 % of them is composed of cholesterol and free fatty acids. They are often formed in the presence of stasis and infection (3). Conjugated bilirubin is converted to unconjugated form in the presence of bacterial beta-glucuronidase. Highly insoluble calcium salts precipitate on this unconjugated bilirubin and common bile duct stones arise. More than 50 % of secondary stones are made up of cholesterol and may contain pigment or calcium. Their incidence may increase with age, the presence of small gallbladder stones and a wide cystic duct (3).

The diagnosis of common bile duct stones are confirmed by ultrasound, ERCP, endoscopic ultrasound, or percutaneous transhepatic cholangiography (PTC) (5-8). Small bile duct stones may spontaneously fall. In bile stone-induced

pancreatitis, common bile duct stones are identified intraoperatively in 50 % of cases. If the stone fails to fall, two life threatening situations may come out: acute cholangitis or acute pancreatitis (3). Therefore, the main purpose should be to diagnose these stones when they are asymptomatic.

Common bile duct stones should always be kept in mind while performing elective cholecystectomy, if there is a dilated cystic duct, an increase in the preoperative serum bilirubin levels or a history of acute cholangitis or pancreatitis (3). In a prospective study, the incidence of common bile duct stones has been found to be 95 % when serum AP level is above 300 U/l, ALT above 40 U/l and cystic duct diameter above 8 mm (4).

Cholecystectomy and common bile duct exploration is the treatment of choice in the management of common bile duct stones (8). This procedure is completed by placing a T tube into the common bile duct and performing a perioperative cholangiography. If the patient has a previous choledocholithotomy, more than 5 stones are identified within the duct, common bile duct is wider than 2 cm, there are evidences of stricture or stenosis in the distal portion of the duct, or intrahepatic duct stones are present, choledochoduodenostomy, choledochojejunostomy or transduodenal sphincterotomy is performed (8-10). Therefore, we performed the same procedure, choledochoduodenostomy, to our patient. In addition, Roux-Y hepaticojejunostomies and lobectomies are also performed in the management of intrahepatic bile duct stones. In spite of these procedures and preoperative diagnostic techniques, the probability of retained stones is 50 % (1). Similar to the common bile duct stones, intrahepatic bile duct stones can also be managed and extracted by endoscopic techniques with a success rate of 82 % (1).

90-95 % of cholecystectomies are performed laparoscopically today and laparoscopic extraction of common bile duct stones is also gaining popularity (8, 11). In recent years, both laparoscopic choledochotomy and transcystic common bile duct exploration have been introduced in the management of common bile duct stones (12-14).

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