

# Biliary Duct Large Stone

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## Abstract

Gallstone disease is one of the most common medical conditions requiring surgical intervention.

Herein we report on a 75-year-old man who referred from Socotra Island to Al-Mukalla hospital. The patient complained of abdominal pain in the right upper quadrant and mild jaundice. The symptoms were present since a few years. His blood pressure was 85/135.

On examination the sclera was moderate yellow with occasionally pale stools and dark urine. Sometimes skin itching. Abdomen was mildly tender at the right hypochondrium.

Ultrasonography of abdomen: mild hepatomegaly with no focal lesion was seen and dilated intra hepatic biliary tree. Gallbladder was distended and dilated common bile duct (22mm) due to about (48mm length) stone in the distal part of the common bile duct.

Diagnosis was obstructive jaundice due to large biliary duct stone.

Emergency classical cholecystectomy was carried out and biliary duct stone was extracted successfully. After 10 days the patient was discharged in good condition and without any complications.

**Key words:** Biliary duct stone, Cholecystectomy, Al-Mukalla, Yemen

## Introduction

Gallstone disease is one of the most common medical conditions requiring surgical intervention, and affects approximately 10 % of the adult population in the United States. Common bile duct stones develop in about 10%-20% of patients with gallbladder stones. The literature suggests that at least 3%-10% of patients undergoing cholecystectomy will have common bile duct (CBD) stones.(1)

The presence of stones in the common bile duct most commonly result from the passage of gallstones via the cystic duct into the common bile duct. Less frequently, they may form in the common bile duct itself.(2)

Recently the majority of the patients with large stones can be treated endoscopically. But if the extraction is unsuccessful, or the facilities of lithotripsy are not available, the patient should be referred for surgery.

## Case Report

Male patient 75 years old from Socotra, Yemen referred to Al-Mukalla hospital with right hypochondrium pain and mild jaundice. The symptoms were present since a few years. Patient was moderately thin, working as a farmer. His blood pressure was 85/135.

On examination the sclera was moderate yellow with occasionally pale stools and dark urine. Sometimes skin itching. Abdomen was mildly tender at the right hypochondrium. No signs of cholangitis, pancreatitis, or secondary biliary cirrhosis.

## Investigations:

### Laboratory findings:

Hb was 10; ESR 20; Blood grouping A+ve; Total Serum bilirubin: 3.9 mg/dl; ALP IFCC Gen.2:1050,8 U/L; ALT(GPT): 34.2 U/L.

Blood urea: 14.15mg/dl; creatinine: 0.653mg/dl; Fasting blood sugar: 111.90mg/dl.

Radiology: Chest x-ray normal.

ECG: normal

Ultrasonography of abdomen: mild hepatomegaly with no focal lesion was seen and dilated intra hepatic biliary tree. Gallbladder was distended and dilated common bile duct (22mm) due to about (48mm length) stone in the distal part of the CBD. No pericholecystic free fluid was seen. No obvious mass was seen at the site of the pancreatic head (Figure 1).

CT: Mild hepatomegaly with no focal lesion was seen.

Diagnosis: obstructive jaundice due to large biliary duct stone.

Management: Through Rt. subcostal incision the abdomen cavity was opened. The gall bladder was found distended and the common bile duct was dilated. Cholecystectomy was performed and the common bile duct (CBD) was explored. It was found full with large stone around 5x2 cm. The stone was extracted in fragments. The largest fragment was 1.8cm. T tube drain was inserted in the common bile duct and kept in situ for 7 days and then the patient was discharged in good condition and without any complications.

## Discussion

The presence of stones in the common bile duct most commonly result from the passage of gallstones via the cystic duct into the common bile duct. Less frequently, they may form in the common bile duct itself(2).

In this case the gallbladder was distended but empty of stones. Most probably the stones had migrated through the cystic duct to the common bile duct when it was small in size and then later its size increased in the common bile duct to form a large stone.

Although the bilirubin level in this patient was moderately high (3.9 mg/dl) the stone in the common bile duct was large (Figures 2,3). The mean bilirubin level in series of patients with choledocholithiasis was 1.5-1.7 mg/dl and minority (one third or less) of patients has reported at a level of 4mg/dl.(3,4,5)

When complete extraction of large stones is unsuccessful, the drainage of the common bile duct is mandatory either for bridging to the final therapy or as a curative therapy for very elderly patients with short life expectancy. Placing of more than one plastic endoprosthesis is better while the administration of Ursodiol is ineffective.(6)

**Figure 1: Ultrasonography of abdomen**



**Figure 2: Longitudinal measure of biliary duct stone**



**Figure 3: Width measure of biliary duct stone**



In approximately 10%-15% of patients, managing biliary stones becomes formidable primarily due to difficulties in accessing the bile duct, the presence of a large number of stones (greater than 10), large size of stones (stones with a diameter > 15 mm) or location of the stones (intra hepatic, cystic duct, proximal to strictures).<sup>7</sup> Also older age (> 65 years), shorter length of the distal CBD arm ( $\leq$  36mm) or more acute distal CBD angulation ( $\leq$  135 degrees) are all contributors to technical difficulty for endoscopic removal of bile duct stones.<sup>(8)</sup> That is why the conventional surgical approach was chosen to extract this large stone which was completely impacted in the CBD.

In comparison between open surgery and endoscopic retrograde cholangiopancreatography (ERCP) in a seven trials, the participants with open surgery group had significantly fewer retained stones compared with the ERCP group (20 patients underwent open surgery with retained stones where 20 patients (6%) versus 47 patients (16%) in ERCP group p-value (0.0002). But regarding mortality and morbidity the comparison was not significant although 1% mortality among participants in open surgery group versus 3% among participants in ERCP group, while morbidity was 20% versus 67%.<sup>(9)</sup>

We concluded that the conventional surgical approach which was chosen to extract this large stone which was completely impacted in the CBD was successful.

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