

Successful Removal of A Large Stone from the Common Bile Duct by Endoscopic Papillotomy and Lithotripsy

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A previously cholecystectomized man presented on endoscopic retrograde cholangiography with a large stone (6×2×2 cm) in the common bile duct.

The patient refused surgical removal of the stone, so although endoscopic papillotomy was contraindicated, it was attempted. Herein is presented a case report of successful removal of a large stone by endoscopic papillotomy and lithotripsy with no significant complications.

Key Words: *Common bile duct stone, endoscopic lithotripsy*

INTRODUCTION

Recently, endoscopic papillotomy (E.P.T.) has achieved wide acceptance as an alternative to surgery for the management of choledocholithiasis¹⁻⁴.

However, there are several of problems, one of which relates to the size of the stone. A stone larger than 2.5 cm in diameter has been regarded as a contraindication of endoscopic papillotomy due to complications and frequent failures^{5,6}. A new method in which the stone is partially crushed in place and then extracted has been developed and has been successfully used on large stones.

We experienced a patient who had a cholecystectomy and presented with a very large stone (6×2×2 cm) (Fig. 1) on endoscopic retrograde cholangiography. Although endoscopic papillotomy was contraindicated in this case, it was performed with the usual lithotripter, because the patient refused surgery. The stone was extracted without significant complications.

Herein we report and review a case of nonsurgical extraction of a large stone.

REPORT OF CASE

A 34 year-old man was admitted to the Department of Internal Medicine complaining of a colicky right-upper abdominal pain accompanied by chills and fever of 2 days duration. He had a cholecystectomy for a gall stone in 1982. He was healthy until 5 months earlier when he experienced the abrupt onset of right-upper abdominal pain accompanied by mildly icteric sclera.

Under the impression of postcholecystectomy syndrome, endoscopic retrograde cholangiopancreatography was performed which revealed a large stone in the distal common bile duct. Endoscopic papillotomy and irrigation of common bile duct were done in the endoscopic room at that time.

Thereafter he was healthy until 2 days prior to his present admission, when right-upper abdominal pain accompanied by chills, fever and cold sweats recurred.

All vital signs were within normal limits except body temperature which was 38°C. On physical examination his sclera was icteric, the hepatic edge was not palpable and no other abnormal findings were noted.

Laboratory data included WBC 11,600 with 76% neutrophils; alkaline phosphatase, 21.6 KA/U (normal 2.7-10); serum aspartate aminotransferase

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(GOT/GPT), 351/318 IU./L.; and total bililubin/direct bililubin 3.7/1.5 mg/dl. All other determinations were normal.

A plain abdominal film revealed a mild paralytic ileus pattern. Initially the patient's condition was

diagnosed as obstructive jaundice with cholangitis. On the 2nd hospital day, endoscopic retrograde cholangiography was performed revealing a large stone (6×2×2.0) (Fig. 1) in the common bile duct which was partially removed by endoscopic

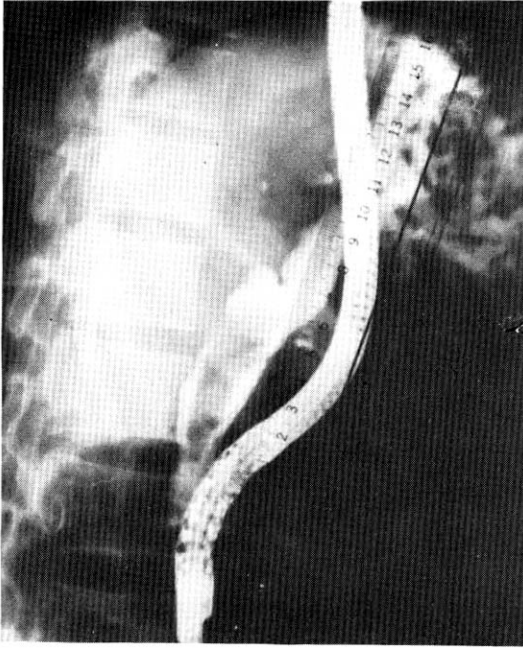


Fig. 1. *E.R.C.P. film demonstrated very large stone (6 x 2 x 2cm) in the common bile duct.*

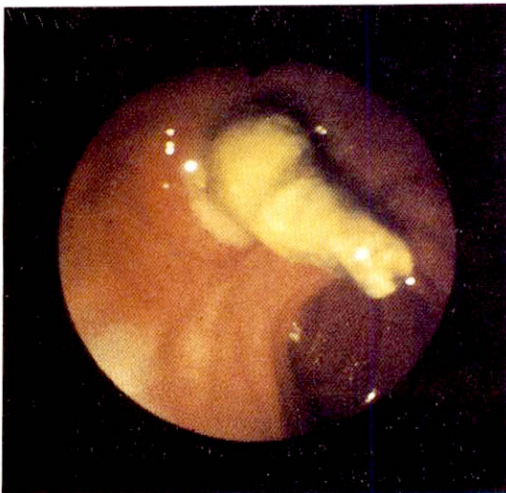


Fig. 2. *The large stone impacted in papillotomy orifice.*

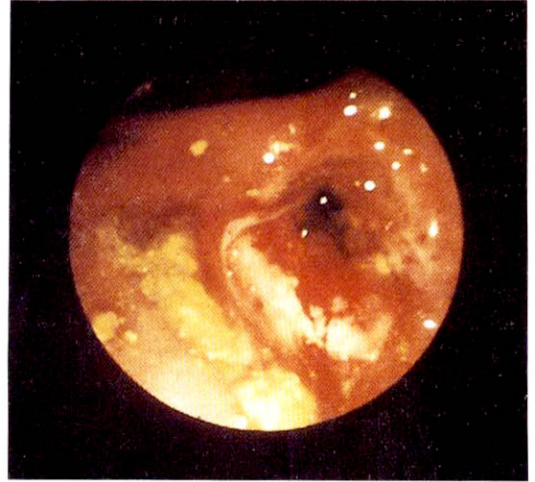


Fig. 3. *After procedure, E.R.C.P. showed stone fragment around orifice.*

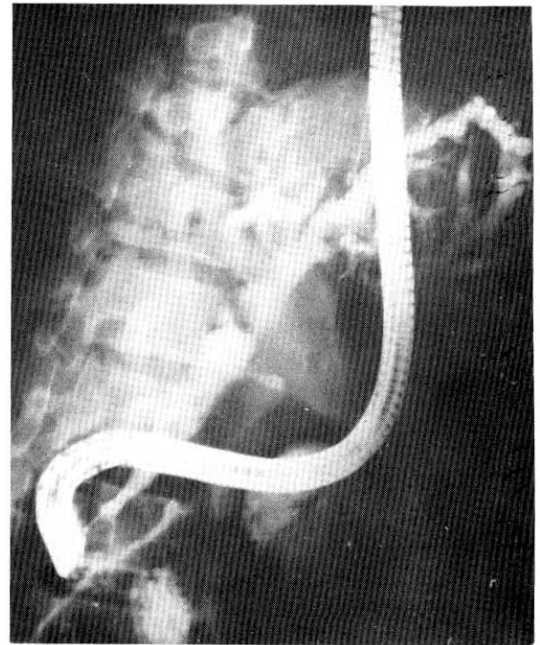


Fig. 4. *After all procedures, E.R.C.P. did not show stone shadow but air bubbles.*

papillotomy and lithotripsy with irrigation. 4 days later, right-upper abdominal pain returned and a follow-up E.R.C.P. showed a large stone (3×3×3) impacted in the orifice of the papillotomy site (Fig. 2). This stone was removed using a wire. After widening the papilla by cauterization and incision a wire was inserted through the papillotomy site into the bile duct, and by repeated crushing and extraction the remaining stones were removed (Fig. 3).

The E.R.C.P. performed 2 days after those procedures showed air bubbles in the common bile duct but no definite stone shadows were visualized (Fig. 4). The patient's condition improved and he was discharged one week later.

DISCUSSION

The development of endoscopic retrograde cholangiography as a diagnostic tool for biliary tract and pancreatic disease, has resulted in non-surgical treatment for diseases of the biliary tract (1-4, 8). Since endoscopic papillotomy was performed successfully in 1973(9), it has also contributed to the therapeutic procedures for common bile duct stone and papillary stenosis.

The main indication for endoscopic papillotomy is the extraction of common bile duct stones from cholecystectomized elderly or high risk patients. However, endoscopy should not be routinely performed in patients with common bile duct stones larger than 2.5 cm in diameter because of complications and frequent failures (5, 6). Following papillotomy the majority of common bile duct stones were extracted with the aid of a basket or passed spontaneously (6), but more than 10% of the stone were not extracted easily due to their large size or a narrowing of the bile duct above the papilla. Although there is a report that some large stones may pass spontaneously (10, 11), most can not be extracted despite a large papillotomy which may result in complications. To overcome these problems, nonsurgical mechanical procedures such as electrohydraulic lithotripsy, dissolution therapy, and lithotripter have been developed with varying success(12). While electrohydraulic lithotripsy and dissolution therapy have failed to gain wide acceptance because of technical problems and adverse reactions(13, 14), mechanical lithotripsy has proved to be of value(14, 15). presently some centers report a high success rate(97%) with few complications using this method(12).

It is difficult to conclude that the endoscopic papillotomy is always more effective than surgical procedures for the treatment of common bile duct

stones (including large ones), but it has definite advantages in some selected cases. It should be the treatment of choice for elderly and high risk surgical patients.

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