

Giant Choledocholithiasis Treated by Direct Cholangioscopy with Gastroscope and Electrohydraulic Lithotripsy

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Introduction

- Choledocholithiasis is a relatively common gastrointestinal condition that is frequently treated with endoscopic retrograde cholangiopancreatography. However, the extraction of very large stones can pose significant challenges.
- In the following report, we describe the use of direct cholangioscopy with a gastroscope to facilitate electrohydraulic lithotripsy (EHL) and removal of a giant common bile duct stone.

Case Description

- A 71-year-old female presented to the emergency department with three months of intermittent right upper quadrant pain. She denied having nausea, vomiting, or loss of appetite, and physical examination was unremarkable.
- Laboratory results showed a total bilirubin of 0.6 mg/dL, AST 52 IU/L, ALT 90 IU/L, and ALP 239 IU/L.

Figure 1: A CT of the abdomen and pelvis was performed, which revealed a large 9 x 4 x 4 cm hyperdense mass underneath the liver, adjacent to the gallbladder.



- EUS images showed a very large radiopaque filling defect in the a very dilated bile duct

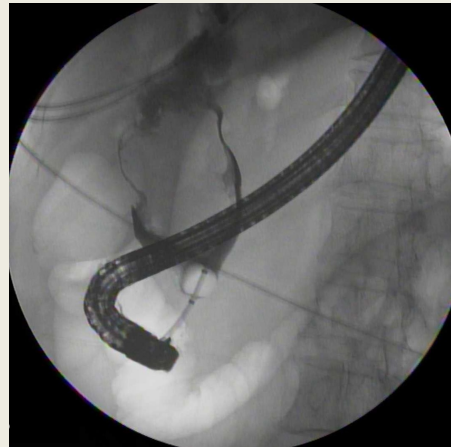


Figure 2: A cholangiogram during ERCP confirmed a very large stone occupying the entire common bile duct.

- A biliary sphincterotomy was performed, and the bile duct orifice was dilated with a 12-15 mm balloon.
- Next the duodenoscope was replaced with a standard adult gastroscope.

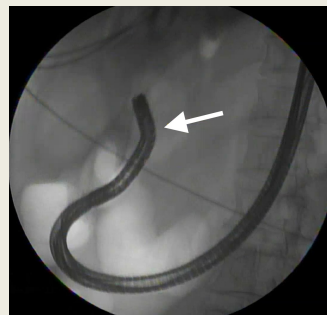


Figure 3: The gastroscope was guided through the major papilla into the bile duct.

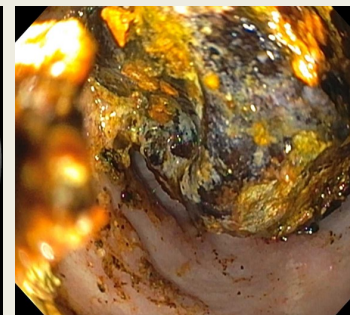


Figure 4: Electrohydraulic lithotripsy was used for stone fragmentation.

- Direct cholangioscopy with a standard gastroscope allowed for great visualization and irrigation during the EHL.

- Large stone fragments were removed under direct visualization using a wire basket through the gastroscope.
- Due to large size of this stone, two sessions of EHL via direct cholangioscopy with the gastroscope were required to achieve complete bile duct clearance.

Discussion

- Choledocholithiasis is the presence of a gallstone in the common bile duct (CBD), occurring in up to 20% of patients with cholelithiasis.
- While smaller stones (< 1.5 cm) can often be removed intact via endoscopic sphincterotomy and sphincteroplasty, larger stones can be more difficult to remove and may require lithotripsy (mechanical, EHL or laser).
- In rare instances and depending on local expertise, surgery is also considered. Nevertheless, cholangioscopy using SpyGlass and EHL is the most common technique for bile duct stone fragmentation.
- In this case, due to the large size of the CBD and giant size of the stone, we decided to use direct cholangioscopy via a standard adult gastroscope and EHL.
- Scope stability and visibility within such a large bile duct was significantly superior to SpyGlass, and irrigation and suction through the gastroscope allowed for high quality EHL and removal of large debris.
- This technique can only be applied to bile ducts that are dilated more than 15 mm in diameter and requires advancing the gastroscope into the distal bile duct using a free-handed technique.