

Peroral cholangioscopy: use of a Roth Net retriever for difficult biliary stones

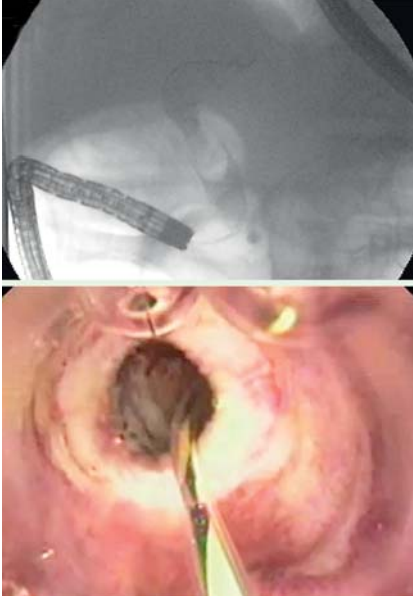


Fig. 1 Cholangiography showing a large stone in the common bile duct. Sphincteroplasty was performed using a large balloon, dilating the sphincter to 17 mm, without prior sphincterotomy.

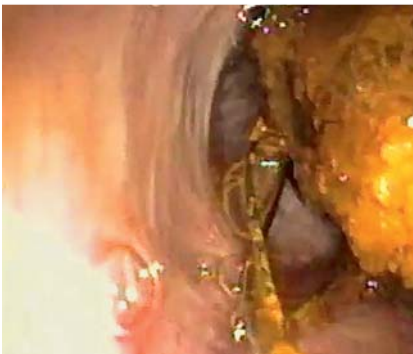


Fig. 2 The largest stone could not be removed using a basket because of its size and position.



Fig. 3 Retrieval of the bile duct stone using a Roth Net (US Endoscopy, Mentor, Ohio, USA). **a** Under direct visualization, the Roth Net was opened. **b** The net captured the largest stone easily. **c** The stone was removed without fragmentation.

Bile duct stones are routinely removed during endoscopic retrograde cholangiopancreatography (ERCP) with biliary sphincterotomy, using standard balloon or basket extraction techniques. However, in approximately 10%–15% of patients, bile duct stones may be difficult to remove owing to challenging access to the bile duct, large bile duct stones (>15 mm in diameter), intrahepatic stones, or impacted stones in the bile duct [1–3]. In such cases, an alternative procedure to ensure biliary drainage may be warranted.

A 65-year-old man was admitted for acute cholangitis with multiple organ dysfunction. Upper abdominal ultrasound showed a dilated common bile duct (CBD, 17 mm), containing multiple stones. After hemodynamic stabilization and the initiation of antibiotic therapy, the patient underwent emergency ERCP. A pyloric and duodenal bulb deformation was noted, which prevented stabilization of the duodenoscope after CBD cannulation. Sphincteroplasty was performed using a large balloon, dilating the sphincter to 17 mm (Fig. 1), without prior sphincterotomy. A pediatric colonoscope was then advanced slowly into the CBD over a catheter, allowing its entry into the biliary tract. Multiple biliary stones were seen under direct visualization, the largest of which was 16 mm.

The largest stone could not be removed using a basket because of its size and position (Fig. 2). Therefore, a Roth Net (US Endoscopy, Mentor, Ohio, USA) retriever was used. Under direct visualization, the



Fig. 4 After the procedure, complete stone removal was confirmed by direct visualization.

Roth Net was opened, and easily captured the largest stone, which was removed without fragmentation (Fig. 3 a, b, c). The remaining small biliary stones and sludge were removed using a balloon. After the procedure, complete stone removal was confirmed by direct visualization (Fig. 4). The procedure was performed using carbon dioxide insufflation. The patient was discharged 1 week later. Peroral cholangioscopy allows therapeutic procedures in the biliary tract under direct visualization [4]. In the present case, a novel retrieval method, which used an accessory that is widely available, was used to remove a difficult bile duct stone.

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Bibliography

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