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

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 (>15mm 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, 17mm), 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 17mm (● 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 16mm.

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 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.

Competing interests: None
Vera Costa Santos, Nuno Nunes, Filipa Ávila, Ana Catarina Rego, José Renato Pereira, Nuno Paz, Maria Antónia Duarte
Department of Gastroenterology, Hospital do Divino Espírito Santo, Ponta Delgada, Portugal

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Corresponding author
Vera Costa Santos, MD
Department of Gastroenterology
Hospital do Divino Espírito Santo
Rua Professor Alfredo Bensaude nº 10, 1º direito
9500-700, Ponta Delgada
Portugal
vera@multi.pt
veracostsantos@gmail.com