



## IMAGES OF THE MONTH

## Direct cholangioscopy using a standard-size gastroscope to guide mechanical lithotripsy after failed ERCP-based basket capture



### Colangioscopia directa utilizando un gastroscopio de tamaño estándar para guiar la litotricia mecánica tras el fracaso de la captura de cestas basada en la CPRE

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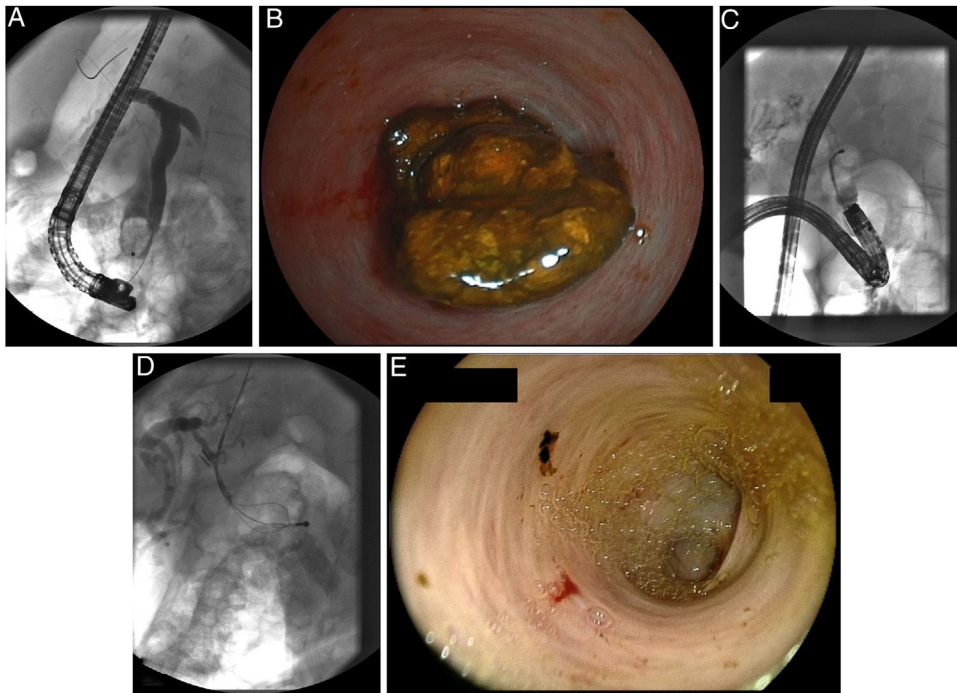
An 85-year-old female underwent urgent endoscopic retrograde cholangiopancreatography (ERCP) under piperacillin/tazobactam due to acute bacterial cholangitis. Biliary access was achieved after transpancreatic sphincterotomy and prophylactic 5-Fr pancreatic single pigtail stenting. On (limited) cholangiogram an estimated 30-mm common bile duct (CBD) stone at the branch-off of a low-inserting cystic duct (CD) came to our notion. (Fig. 1A) Biliary 10-Fr plastic stenting was performed after standard-incision papillotomy to ensure biliary drainage, and repeat ERCP was scheduled with intention to perform endoscopic papillary large-balloon dilation (EPLBD) to assist in stone extraction. This was accomplished up to 15mm using a controlled radial expansion balloon without difficulties taking care to limit introduction of the device into the CBD, so as to avoid inflation alongside the large stone and diverticulum formation.<sup>1</sup> However, since the stone was not to be mobilized by a large-size ERCP balloon nor be captured in a *Dormia* basket, we performed freehand-intubated direct cholangioscopy (DC) using a standard size gastroscope (outer diameter 9.8mm; working channel 2.8mm)

to fully visualize the nearly lumen-occluding giant stone. (Fig. 1B) Basket capture under coordinated endoscopic and fluoroscopic guidance (Fig. 1C) finally succeeded using a rotatable basket with high expansion forces (twist'n'CATCH, Medwork, Höchststadt/Aich, Germany), and mechanical lithotripsy (ML) was performed without complications using an emergency lithotripter device. (Fig. 1D) Following this, additional ML fragments were retrieved from the biliary system by standard ERCP technology. A final repeat DC up to the hilum firmly excluded remnant stone disease in the diffusely dilated biliary system with ample pneumobilia after large-bore EPLBD further reducing the informativeness of pure cholangiography.<sup>2</sup>

DC-guided ML has rarely been reported, mostly because cholangioscopy-based stone management is dominated by electrohydraulic (EHL) and/or laser lithotripsy (LL) techniques considered more elegant and powerful in such setting.<sup>3</sup> Notwithstanding, in this unique case catheter-based lithotripsy had not been planned beforehand. To conclude, cholangioscopy-guided ML using standard size upper endoscopes with a working channel with adequate diameter to accommodate ERCP equipment may represent another viable option, when ERCP-based *Dormia* basket capture as a *sine qua non* for ML fails.

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**Figure 1** (A) An estimated 30-mm large distal common bile duct (CBD) stone – note limited cholangiogram due to acute cholangitis. Note also contrast media mostly flowing into the cystic duct (CD) reflective of the sub-occlusive nature of this “giant” stone. (B) Direct cholangioscopy (DC) using a standard gastroscope likewise exposes the lumen-occlusive stone, and (C) co-ordinated movements under endoscopic and fluoroscopic control resulted in successful basket capture (35-mm rotatable device with high expansion forces). (D) This was followed by an uncomplicated mechanical lithotripsy (ML) using an emergency lithotripter device. (E) After conventional ERCP-based extraction of ML fragments repeat DC up to the hilum firmly excluded remnant stone material in the diffusely dilated biliary system.

### Potential conflict of interest

Nothing to declare.

### References

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