

Water-irrigation disimpaction endoscopic retrograde cholangiopancreatography – an approach to impacted distal biliary stones

Distal common bile duct impaction is common during management of large choledocholithiasis. Despite lithotripsy, impaction of the stone fragments, ampullary edema, and the presence of a periampullary diverticulum can limit balloon extraction [1]. We present a case where water irrigation of the common bile duct proved to be a useful adjunct in the atraumatic removal of impacted distal biliary stone fragments, allowing for successful completion of the procedure (► **Video 1**).

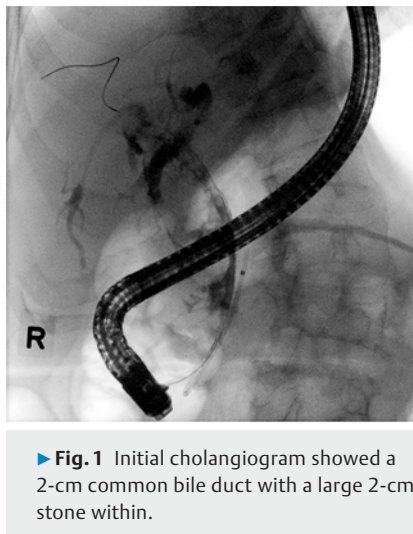
An 80-year-old woman was admitted with acute cholangitis. Contrast-enhanced computed tomography revealed choledocholithiasis within a dilated biliary tree, with the common bile duct measuring up to 2 cm.

An endoscopic retrograde cholangiopancreatography (ERCP) was performed, which showed the ampulla on the edge of a large duodenal diverticulum. There was difficulty with the initial biliary cannulation because of axis distortion, and a pancreatic duct stent was inserted to facilitate biliary access. Initial cholangiogram (► **Fig. 1**) showed a 2-cm common bile duct with a large 2-cm stone within. Balloon dilatation of the biliary orifice to 10 mm was performed to match the size of the distal duct. Larger dilatation was not carried out in view of the patient's age, frailty, and the periampullary diverticulum.

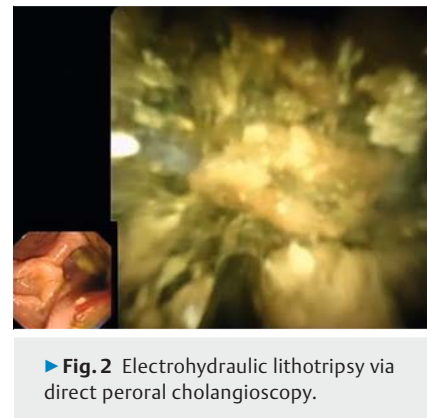
Spyglass cholangioscopy-guided electrohydraulic lithotripsy (► **Fig. 2**) was followed by attempts at balloon trawling of the fragmented stones with an extraction balloon. However, there was difficulty in extraction owing to impaction of distal biliary stone fragments as well as edema. Water irrigation of the bile duct (► **Fig. 3**) led to atraumatic removal of the impacted stones and subsequent successful clearance of all ductal stones (► **Fig. 4**).



► **Video 1** Video demonstrating the technique of water irrigation disimpaction endoscopic retrograde cholangiopancreatography.



► **Fig. 1** Initial cholangiogram showed a 2-cm common bile duct with a large 2-cm stone within.



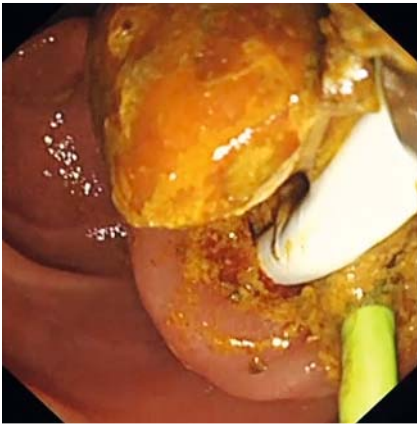
► **Fig. 2** Electrohydraulic lithotripsy via direct peroral cholangioscopy.

Water irrigation has previously been shown to be useful in reducing the risk of residual common bile duct stones [2]. Here, we demonstrate its utility as an adjunct in the removal of impacted biliary stones with minimal trauma.

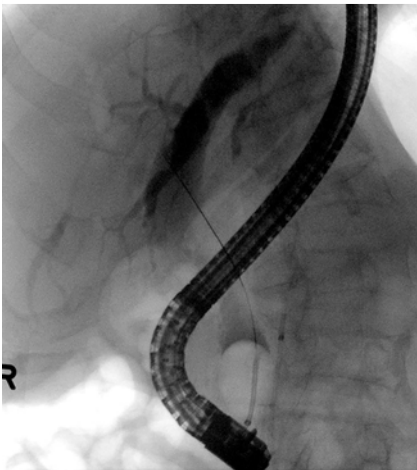
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Competing interests

The authors declare that they have no conflict of interest.



► **Fig. 3** Large stone removed via water irrigation.



► **Fig. 4** Final cholangiogram after stone removal.

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Bibliography

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