

BRIEF REPORT

Long-scope position insertion for a challenging bile duct access by a novel digital single-operator cholangioscope (SpyGlass DS) in periampullary diverticulum

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bile duct stone disease, cholangioscopy, endoscopic retrograde cholangiopancreatography.

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A 67-year-old patient presented with acute stone-related cholangitis. On urgent endoscopic retrograde cholangiography (ERC), biliary cannulation proved to be complicated by a periampullary diverticulum (PAD) with the orifice at 4 o'clock, rendering proper axial and en face alignment in the short axis impossible. Biliary access was finally accomplished in a long 'kissing' position, and papillotomy was performed. However, given a giant proximal common bile duct stone-defying basket capture, a 10 Fr stent was inserted, and cholangioscopy-directed electrohydraulic lithotripsy (EHL) was scheduled. Repeat ERC indicated a well-matured and small, albeit maximal, papillotomy, which cannot be intubated by the SpyScope delivery catheter (Boston Scientific, Natick, MA, USA) neither freehand nor guidewire-assisted. This was most likely attributable to the complex PAD anatomy with skewed bile duct axis combined with a small papillotomy and long duodenoscope tip-to-papilla distance in the short position. Therefore, similar to the implemented ERC cannulation strategy, we positioned

the duodenoscope in the long axis and cautiously advanced the SpyScope deep into the bile duct over a guidewire, avoiding too much scope tension and thus mechanical damage to the fragile SpyGlass technology (Fig. 1). After that, the long axis was resolved, and EHL using the Autolith system (Northgate Technologies, Elgin, IL, USA) succeeded in complete stone clearance.

Technical failure of SpyScope bile duct intubation is uncommon, and procedural success (variably defined but mostly) as advancement in the biliary system to a predefined target lesion, such as stone or stricture, is reported to be high, reaching up to or above 90%.^{1,2} However, most failures (if specified at all) were due to distal stones and/or limited duct diameter, with primary sclerosing cholangitis identified as a significant predictor.^{2,3} By contrast, imminent true 'anatomic' failure might be rare and/or underreported and may be tackled by troubleshooter techniques, such as the one presented here, to rescue procedural success in this high-cost, limited-access procedure.

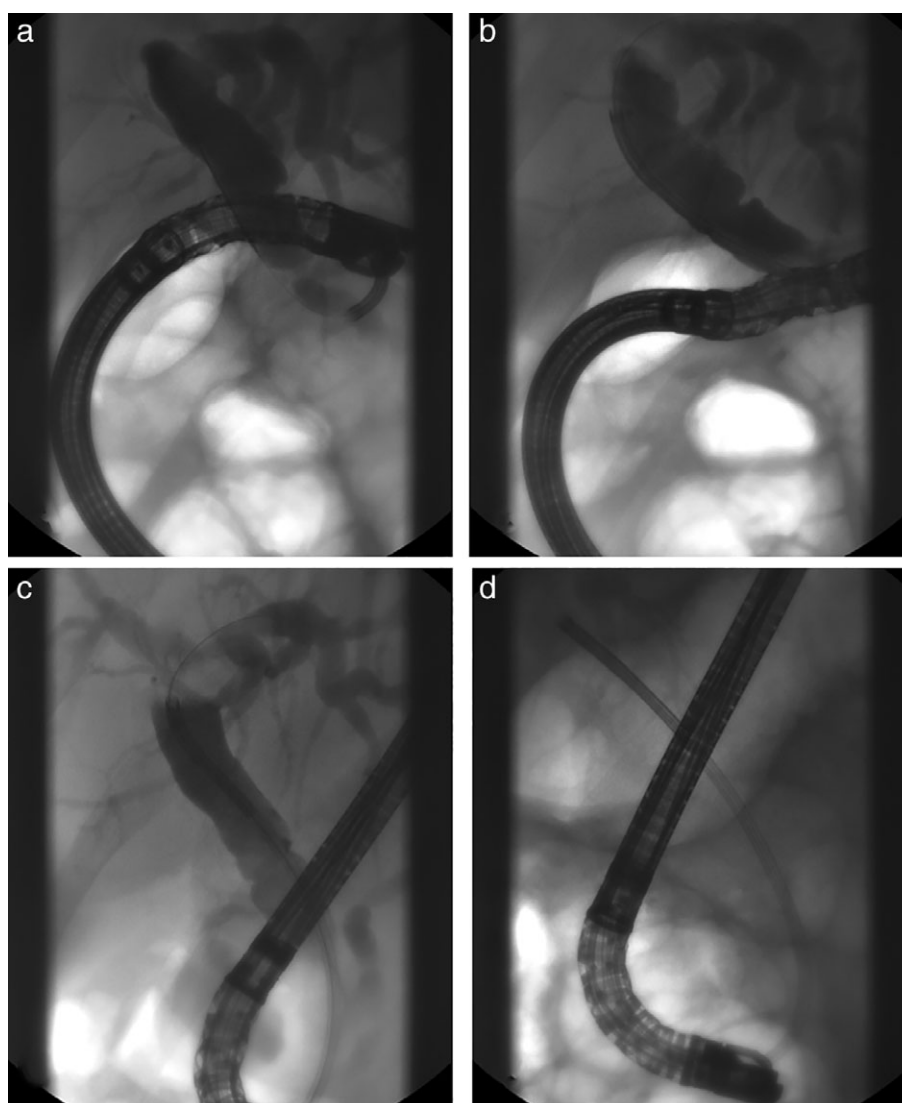


Figure 1 Endoscopic retrograde cholangiography illustration of the 'long scope position insertion' for a challenging bile duct access for a novel digital single-operator cholangioscope (SpyGlass DS). (a) With the duodenoscope in the long scope axis, the four-way steerable SpyScope catheter is gently advanced over a pre-inserted guidewire into the biliary system. (b) Successful advancement up to the level of the stone in the proximal common bile duct (CBD) to provide for enough backup scope length for resolution of the scope axis. (c) Again, the delivery catheter is navigated without difficulties into the target region after reestablishment of a short scope axis (initially, the catheter expectedly slipped back into the middle portion of the CBD). (d) Stable short axis position to allow for better maneuverability, less mechanical stress, and improved device passage through the SpyScope accessory channel.

References

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