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Endoscopic retrieval of a proximally migrated biliary stent using extracorporeal shockwave lithotripsy, electrohydraulic lithotripsy, and cholangioscopy with minisnare

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CASE

A 69-year-old woman with a history of choledocholithiasis underwent ERCP in 2014 with complete removal of intraductal stones and placement of a plastic biliary stent. She was subsequently lost to follow-up without stent removal. Six years later, she presented to an outside hospital with right upper quadrant pain and fever. CT demonstrated intrahepatic and extrahepatic biliary ductal dilation, choledocholithiasis, and a common bile duct stent that had proximally migrated.

ERCP was performed, and the previously placed biliary stent was not endoscopically visible at the major papilla and had migrated proximally. Attempts were made to remove the stent during ERCP with traction retrieval using a biliary balloon and a lithotripsy basket, but this was unsuccessful. Balloon sweeps were performed with removal of multiple stones. A 10F stent was placed, and the patient was referred to a tertiary care center for repeat ERCP and attempt at removal of the proximally migrated stent (Video 1, available online at www.VideoGIE.org).[1-4]

PROCEDURE

ERCP was performed with a TJF 160VF duodenoscope (Olympus America, Chelmsford, Mass, USA), and initial fluoroscopic images demonstrated a proximally migrated stent alongside the recently placed 10F stent (Fig. 1). A cholangiogram demonstrated multiple filling defects consistent with choledocholithiasis surrounding the previously placed, proximally migrated biliary stent (Fig. 2). A SpyGlass Direct Visualization System (Boston Scientific, Marlborough, Mass, USA) was inserted, and cholangioscopy was performed; findings were notable for

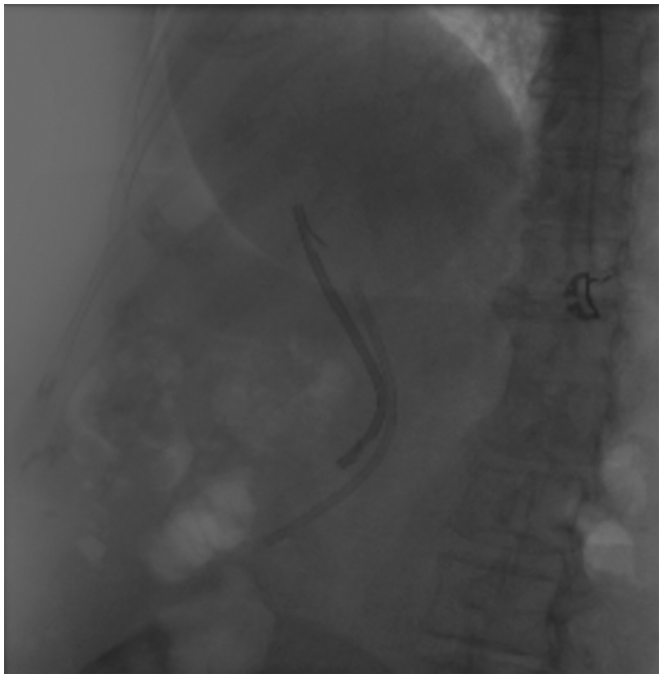

Figure 1. Initial fluoroscopic images demonstrated a proximally migrated biliary stent alongside the recently placed 10F stent.

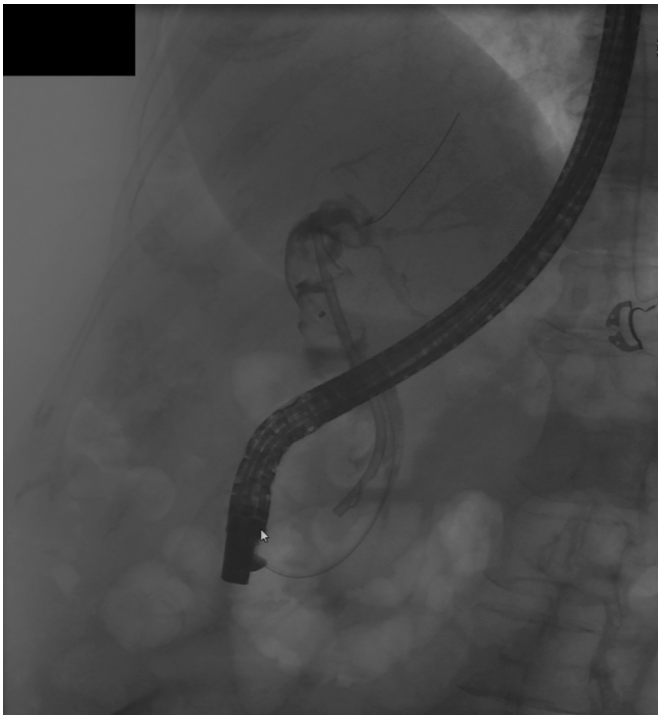

Figure 2. A cholangiogram demonstrated multiple filling defects consistent with choledocholithiasis surrounding the previously placed, proximally migrated biliary stent.

Figure 3. Cholangioscopy revealed a large amount of stone material obstructing and surrounding the previously placed stent.

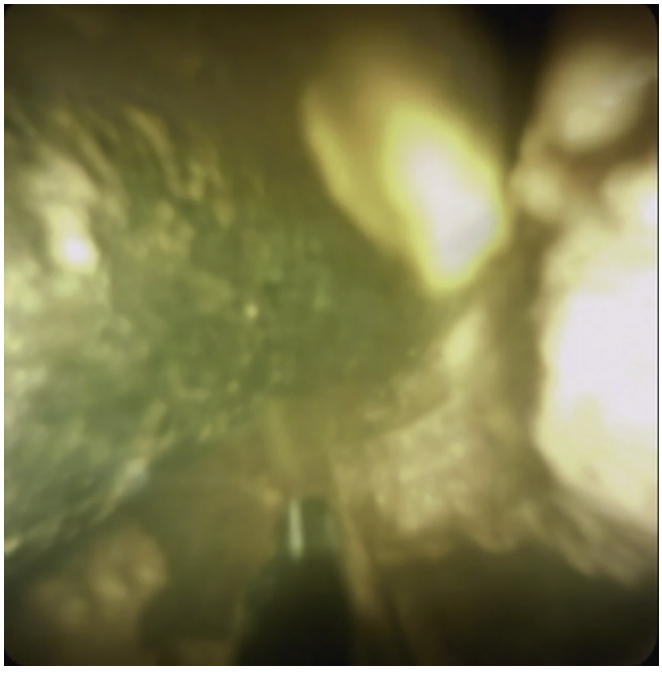

Figure 4. Cholangioscopy-directed electrohydraulic lithotripsy was performed; however, complete stone fragmentation was unsuccessful during the first ERCP because of multiple electrohydraulic lithotripsy probes breaking.

a large amount of stone material obstructing and surrounding the previously placed stent (Fig. 3). Cholangioscopy-directed electrohydraulic lithotripsy (EHL) was performed; however, complete stone fragmentation was unsuccessful during the first ERCP (Fig. 4).

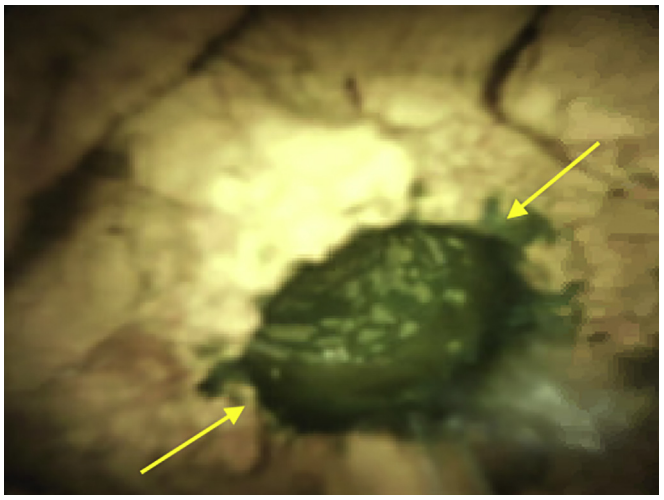

Figure 5. A repeat ERCP 3 weeks later with cholangioscopy demonstrated significant stone material surrounding the proximally migrated stent.

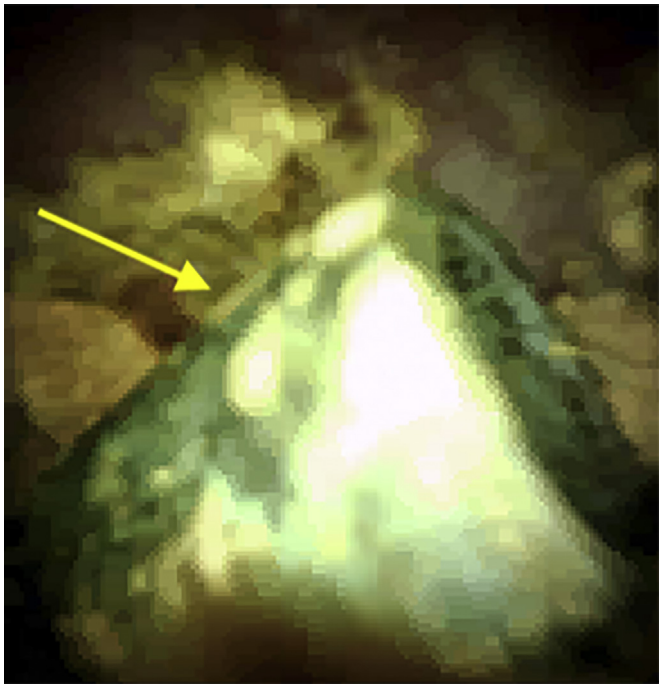

Figure 6. Cholangioscopy-directed electrohydraulic lithotripsy was again performed, resulting in complete stone fragmentation. This freed the proximally migrated stent and allowed subsequent removal with a minisnare.

A repeat ERCP was performed 3 weeks later with successful stone fragmentation using a combination of extracorporeal shockwave lithotripsy, EHL, mechanical lithotripsy, and stent removal using a minisnare (Figs. 5 and 6). Complete stone removal and duct clearance were completed with mechanical lithotripsy and balloon sweeps (Figs. 7 and 8).

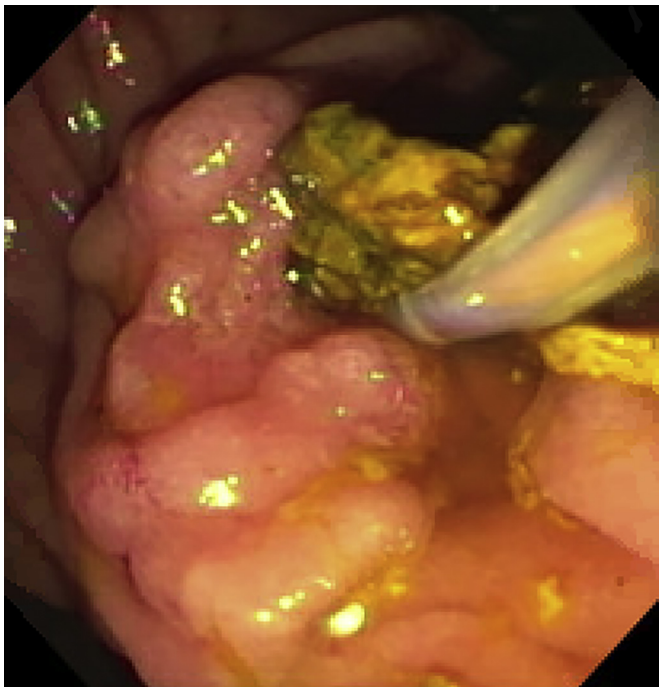

Figure 7. Balloon sweeps were performed with removal of biliary stones.

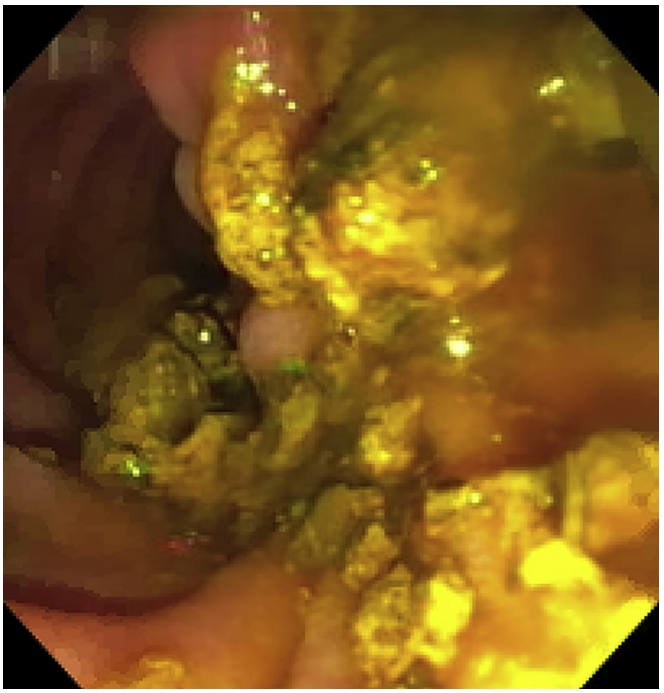

Figure 8. Multiple balloon sweeps were performed with removal of multiple stones and complete duct clearance.

CONCLUSIONS

ERCP with a combination of extracorporeal shockwave lithotripsy, cholangioscopy-directed EHL, mechanical lithotripsy, and minisnare can be used to retrieve a proximally migrated retained biliary stent with stone impaction. Care should be taken to ensure both judicious use of stent placement with strong indications as well as timely removal of biliary stents to prevent stent-related adverse events.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviation: EHL, electrohydraulic lithotripsy.

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