Removal of a biliary stent encrusted with a large stone by use of a new digital cholangioscope with a holmium: yttrium aluminum garnet laser

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There are many reports of encrusted ureteral stents that are difficult to remove.[1] However, it is relatively rare that a biliary stent cannot be removed because of encrustation.[2] We describe a case in which a biliary stent encrusted with a large stone was treated by use of the SpyGlass DS (Boston Scientific Corp., Natick, Mass), a new digital cholangioscope with a holmium: yttrium aluminum garnet laser (Lumenis, Tokyo, Japan).

An 81-year-old woman with mental illness was admitted to our hospital because of fever and right hypochondrial pain. She received a diagnosis of acute pancreatitis with obstructive jaundice resulting from common bile duct stones. Endoscopic biliary drainage was performed with a plastic stent, and her condition improved. Elective stone removal was scheduled; however, she rejected additional treatment for common bile duct stones. She was discharged without biliary stent removal, and she did not come to our hospital for a follow-up examination. Twenty-one months later, she was readmitted to our hospital because of upper abdominal pain and fever. CT revealed that the biliary stent was encrusted with a large stone in the dilatated common bile duct (Fig. 1). She received a diagnosis of severe cholangitis with septic shock. ERCP revealed migration of the plastic stent, which had moved together with the large stone (Fig. 2A). At first, stone fragmentation was attempted by use of a mechanical lithotripter; however, it was difficult to grasp the stone because of its large size and because of the connected stent.

Although laser lithotripsy with use of a cholangioscope is typically performed in such situations, we decided to delay that procedure until her condition improved because irrigation during cholangioscopy might risk aggravation. An additional plastic stent was, therefore, inserted as a temporary measure (Fig. 2B). Because she recovered earlier than expected and could not endure a long period of hospitalization because of her mental illness, laser lithotripsy was performed by use of a cholangioscope the next day. The stent flap on the liver side was initially in the stone (Fig. 3A); however, it became visible after fragmentation of the stone by laser lithotripsy (Fig. 3B and Video 1, available online at www.VideoGIE.org). The stent was then successfully removed with a basket catheter and a snare. Complete biliary clearance was subsequently achieved with a mechanical lithotripter, a basket catheter, and a balloon catheter during the second ERCP procedure (Fig. 4).

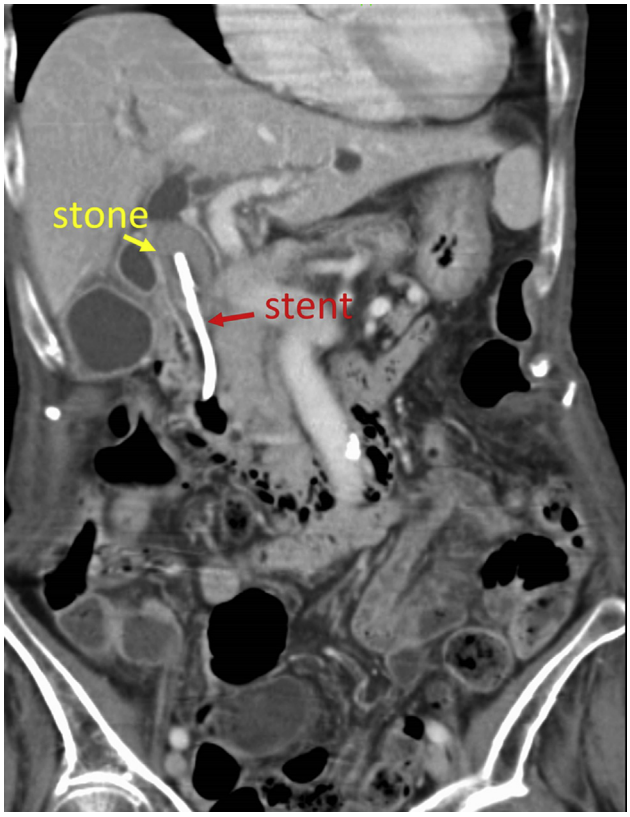

Figure 1. CT view showing biliary stent encrusted with a large stone in the dilatated common bile duct.

Recent reports suggest efficacy of treatment for pancreaticobiliary diseases by use of a new digital cholangiopancreatoscope.[3,4] In the present case, laser lithotripsy with a new digital cholangioscope was feasible and useful for the treatment of the biliary stent, which was encrusted with a large stone.

Written transcript of the video audio is available online at www.VideoGIE.org.

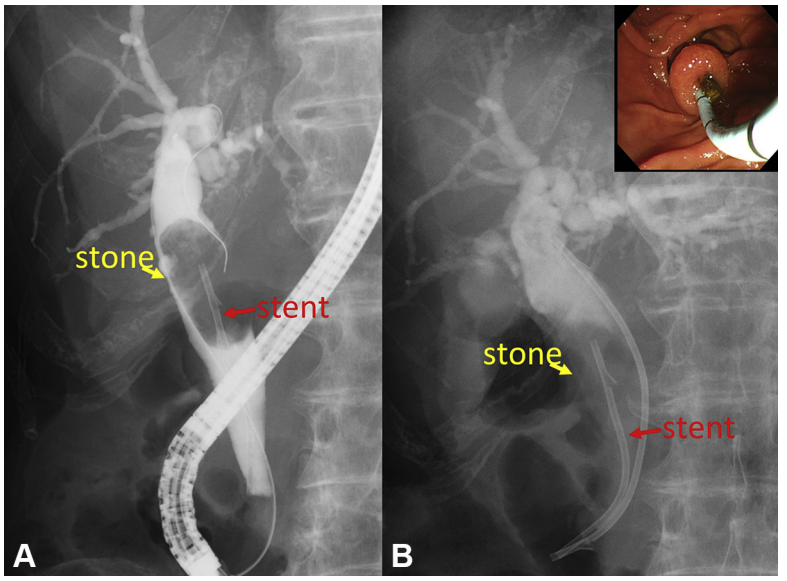

Figure 2. A, ERCP view showing migration of the plastic stent, which had moved together with a large stone. **B,** Insertion of an additional plastic stent as a temporary measure.

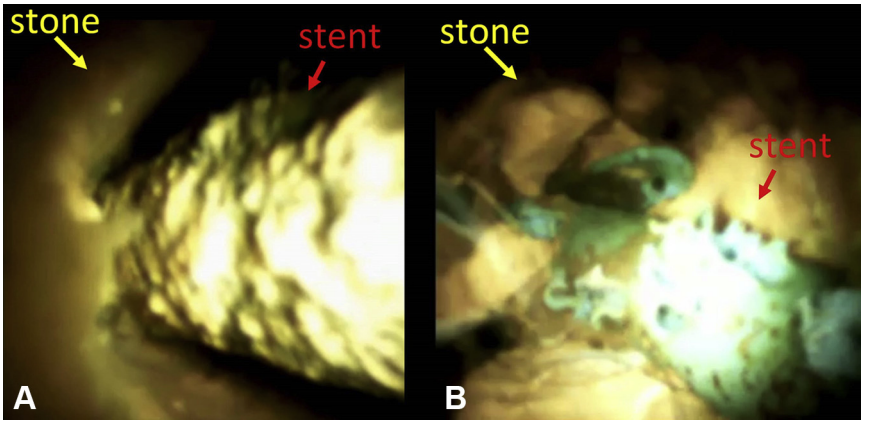

Figure 3. A, Cholangioscopic view with SpyGlass DS showing migration of the plastic stent, encrusted with a large stone. The stent flap on the liver side was initially in the stone and could not be visualized. **B,** Laser lithotripsy performed under direct visualization with use of cholangioscopy. The stone was fragmented and the stent flap on the liver side became visible.

Figure 4. Successful removal of stent and achievement of biliary clearance with a mechanical lithotripter, a basket catheter, and a balloon catheter.

DISCLOSURE

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REFERENCES

1. Blutitude MF, Tiptaft RC, Glass JM, et al. Management of encrusted ureteral sents impacted in upper tract. Urology 2003;62:6226.
2. Gromski MA, Vuppalanchi R, Sherman S, et al. A not-so-sweet diagnosis: secondary biliary cirrhosis from a "lollipop" stone. Gastrointest Endosc 2016;84:198-200.
3. Tyberg A, Zerbo S, Kahaleh M, et al. Digital cholangioscopy-assisted gallbladder drainage: seeing is accessing. Endoscopy. Epub 2015 Sep 23.
4. Tanaka R, Itoi T, Honjo M, et al. New digital cholangiopancreatoscopy for diagnosis and therapy of pancreaticobiliary diseases (with videos). J Hepatobiliary Pancreat Sci 2016;23:220-6.

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