

## Cholangioscopic forceps-assisted retrieval of a forgotten biliary stent through a distal biliary stricture



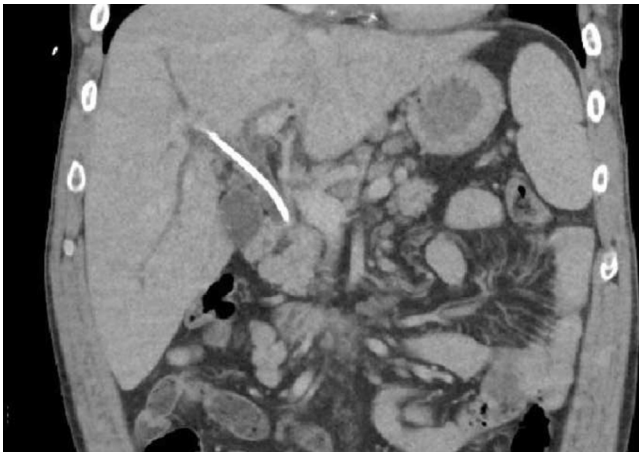
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A 51-year-old man with a history of traumatic bile duct injury and subsequent biliary stent placement in about 2010 was admitted to the hospital after a motor vehicle accident for management of rib fractures. The gastroenterology service was consulted for further evaluation of right-

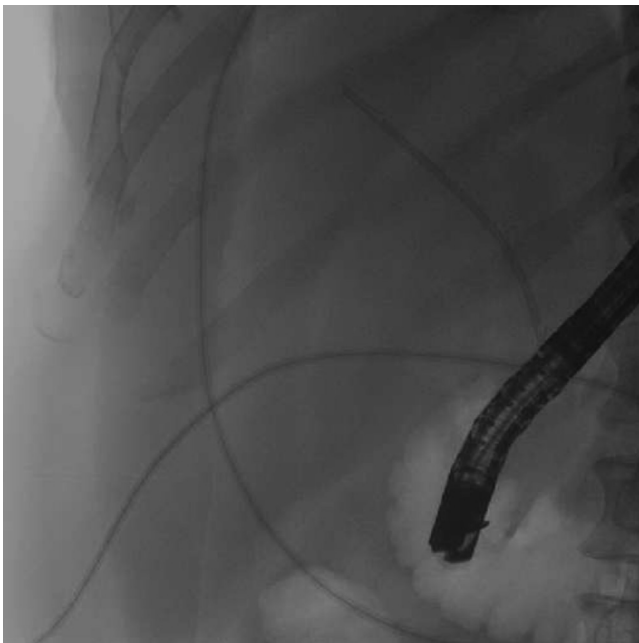
upper quadrant pain with associated fever and chills, nausea, and vomiting. Informed consent was obtained from the patient.

US of the right-upper quadrant revealed a biliary stent that had totally migrated into the distal common bile duct (CBD) and CBD dilation, with the proximal portion measuring 13.6 mm and midduct measuring 9.4 mm (Figs. 1 and 2). Intrahepatic ductal dilation was present as well. A decision was made to perform ERCP with subsequent use of cholangioscopically guided techniques (Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)).

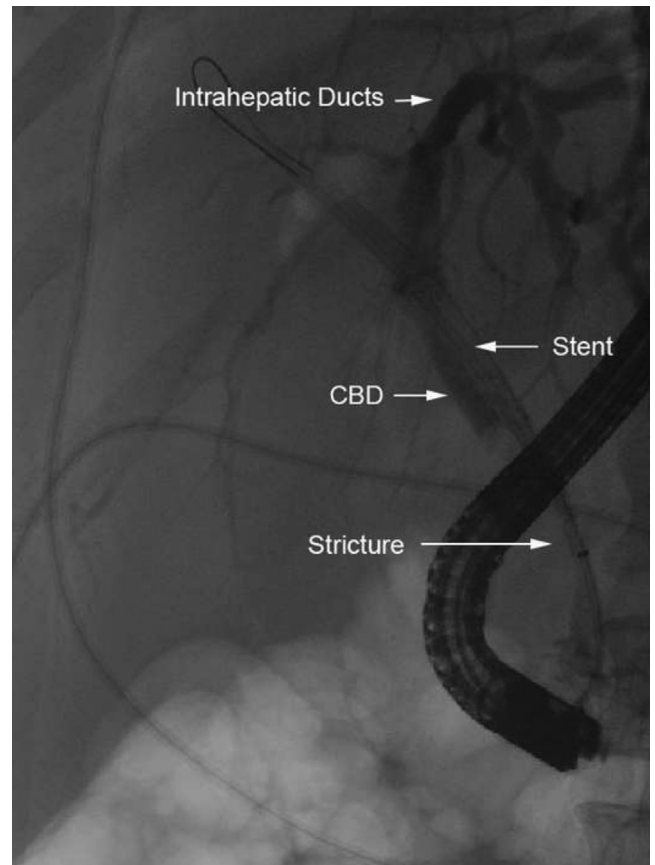
ERCP showed the ampulla in the second portion of the duodenum without a biliary stent. Cholangiography



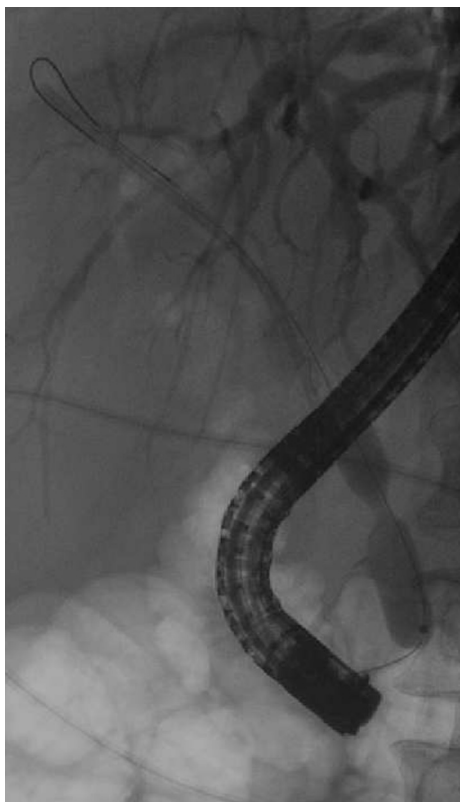
**Figure 1.** Coronal CT view establishing a retained biliary stent.



**Figure 2.** Radiograph demonstrating a migrated biliary stent.



**Figure 3.** Cholangiogram showing dilation of the common bile duct, intrahepatic ductal dilation, a retained biliary stent, and distal biliary stricture.



**Figure 4.** Cholangiogram showing narrowing in the midportion of a biliary balloon demonstrating a distal biliary stricture.

revealed intrahepatic and extrahepatic ductal dilation, with CBD dilation up to 12 mm, multiple filling defects, a distal biliary stricture, and a retained biliary stent in the right anterior biliary segment (Figs. 3 and 4).

Using several instruments, including extraction balloons and a basket, we removed multiple stones, sludge, and pus. However, the biliary stent could not be removed

because of the distal stricture. Dilation of the biliary stricture up to 12 mm was performed with a balloon, and further passes were made with an extraction balloon in an attempt to remove the stent but were unsuccessful.

Cholangioscopy revealed adherent debris and a retained biliary stent. Cholangioscope forceps were used to dislodge the biliary stent distally beyond the stricture. Under fluoroscopic guidance, rat-tooth forceps were then used to remove the biliary stent. Cholangioscopy also revealed a distal biliary fibrotic stricture, likely stent induced. Cytology brushings from the stricture were performed, and a 10-mm × 6-cm fully covered metal stent was placed across the stricture.

Analysis of cytology brushings from the distal CBD showed them to be benign. The patient's clinical condition improved with resolution of his cholangitis and sepsis. He was discharged home on a 14-day course of broad-spectrum antibiotics and was instructed to return in 3 months for follow-up ERCP.

## DISCLOSURE

*All authors disclosed no financial relationships relevant to this publication.*

*Abbreviation: CBD, common bile duct.*

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