



## Cholangioscopy-guided electrohydraulic lithotripsy of a large bile duct stone through a percutaneous T-tube tract

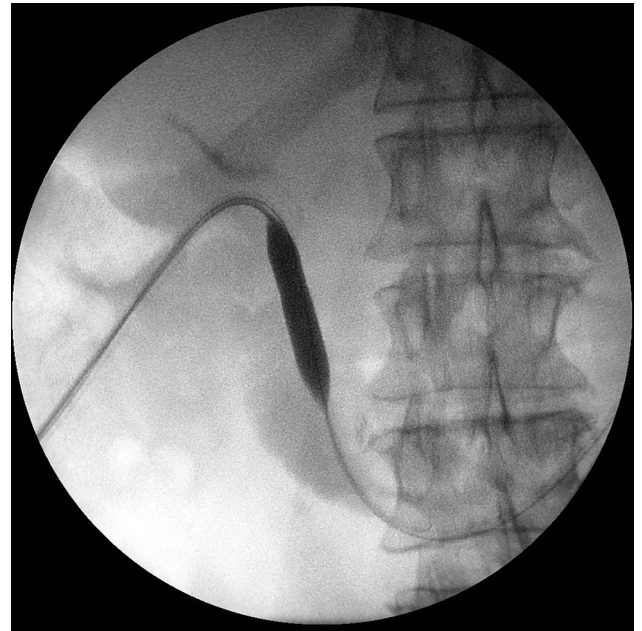
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The management of common bile duct (CBD) stones in a patient with altered surgical anatomy can be challenging.<sup>1-3</sup>

A 73-year-old man with a history of Roux-en-Y partial gastrectomy and previous anterior resection for rectal cancer underwent a CT scan for abdominal pain and jaundice that demonstrated stones in the gallbladder and CBD. He underwent open cholecystectomy and intraoperative choledochoscopy, during which a stone was removed from the CBD, and a T-tube was left in place.

The T-tube was intermittently clamped postoperatively. It continued to drain bile in excess of 700 mL/day, and mild derangement of liver function test results persisted. T-tube cholangiography demonstrated a residual 12-mm CBD stone, with partial obstruction and upstream biliary dilatation. Because repeat surgical exploration of the CBD would have been challenging, we decided to access it by using the T-tube tract. The T-tube was left in place to allow maturation of the tract for further procedure, and it continued to drain meanwhile.

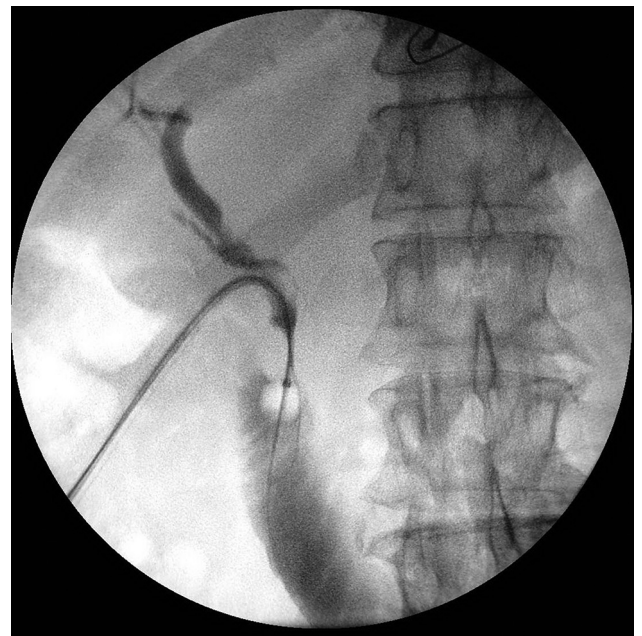
Approximately 7 weeks later, the T-tube was removed, and a sheath (Cordis Avanti+; Cardinal Health, Dublin,



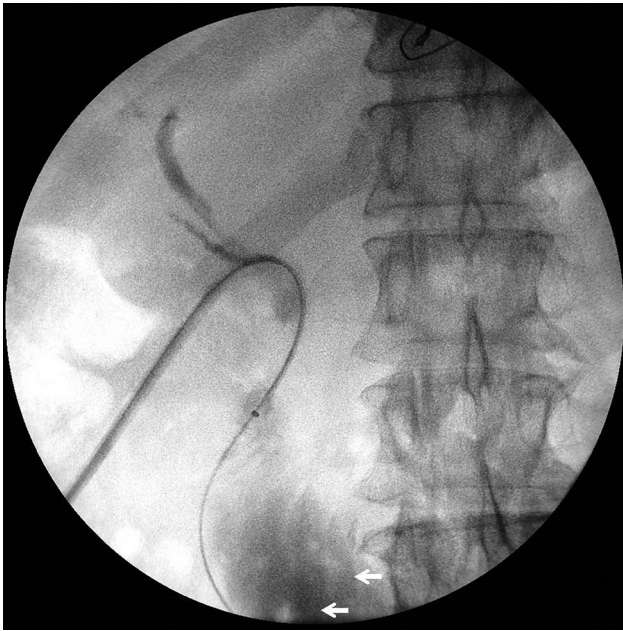
**Figure 2.** Balloon sphincteroplasty being done.



**Figure 1.** Cholangioscopic view showing stone (*white arrow*), guide-wires (*blue arrow*), and tip of lithotripsy catheter (*yellow arrow*).



**Figure 3.** Biliary extraction balloon being used to push stone fragments through ampulla into duodenum.



**Figure 4.** Stone fragments in the duodenum (*arrows*).

Ohio, USA) was inserted. This exchange was done over a guidewire. A single-operator cholangioscope (Spyglass; Boston Scientific, Marlborough, Mass, USA) was inserted through the sheath, and electrohydraulic lithotripsy was performed (Fig. 1; Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)), followed by antegrade ampullary sphincteroplasty (Fig. 2) and delivery of stone fragments into the duodenum by use of a biliary trawl balloon (Figs. 3 and 4). A stoma bag was applied after the procedure at the T-tube removal site, which stopped

draining any bile within 24 hours. The bag was removed the following week, and the T-tube site showed crusting and healing. The patient recovered well.

Cholangioscopy plays an important role in endotherapy for biliary stones in unconventional situations.

## DISCLOSURE

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

*Abbreviation: CBD, common bile duct.*

## REFERENCES

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