



T-tube endoscopic removal by ERCP in a liver-transplanted patient after failed percutaneous removal

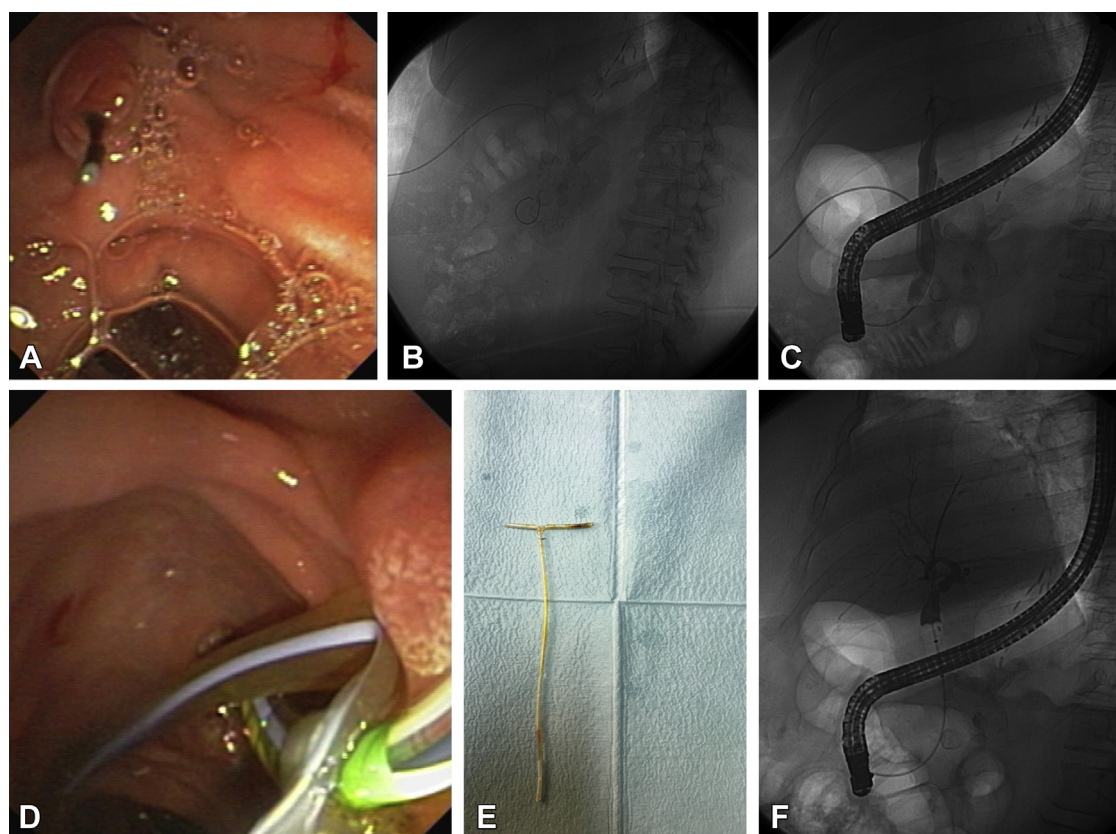


Figure 1. **A**, Endoscopic view showing guidewire percutaneously placed into the T-tube and passed through the major papilla in an anterograde route. **B**, Cholangiographic view showing the guidewire percutaneously placed into the T-tube and passed through the major papilla in an anterograde route. **C**, Guidewire inside of the T-tube and the working channel of the duodenoscope after being caught and pulled with a basket. **D**, T-tube pushed by percutaneous route and maintained inside of the duodenum by a sphincterotome with traction anchored on its top, while the guidewire was cautiously pulled out through percutaneous route. **E**, T-tube after removal by ERCP. **F**, Final occlusion cholangiogram.

The authors describe the case of a 57-year-old woman with nonalcoholic steatohepatitis-related cirrhosis who underwent orthotopic liver transplantation with placement of a 5F T-tube. After unsuccessful attempts at percutaneous removal of the T-tube by traction, it was removed by ERCP. The procedure was performed with the patient in the left lateral and prone position, under deep sedation with propofol (Video 1, available online at www.VideoGIE.org). A 460-cm-long 0.035-inch guidewire (Jagwire, Boston Scientific, Natick, Mass) was percutaneously placed into the T-tube and passed in an anterograde direction through the major papilla (Figs. 1A and B). After

duodenal intubation (TJF-160, Olympus America, Center Valley, Penn) a basket was inserted. The guidewire was passed through this and then pulled through the working channel (Fig. 1C). After the guidewire emerged from the duodenoscope, it was inserted into the tip of a sphincterotome. A large sphincterotomy was performed. The T-tube was pushed through the percutaneous route until the short limb of the T-tube was inside of the duodenum. The T-tube was pulled and maintained inside of the duodenum with the sphincterotome with traction applied, anchored on its top (Fig. 1D), and the guidewire was cautiously pulled out through the percutaneous

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

route. A grasping forceps was introduced, and the T-tube was removed (Fig. 1E). A final occlusion cholangiogram was performed (Fig. 1F).

Biliary tract reconstruction is one of the biggest challenges in liver transplantation. Whether or not this should be done with use of a T-tube is still a matter of debate, even though Huang et al have shown on the largest meta-analyses that the insertion of a T-tube may be useful. Insertion of a T-tube reduces the incidence of biliary strictures. However, it also has adverse events, mostly leakage, peritonitis, and cholangitis. The T-tube is typically removed by the percutaneous route. However, probably as a result of fibrotic and scarring processes, this could be impossible. Those cases are classically treated by surgery. Endoscopic removal by ERCP is a minimally invasive approach that avoids a laparotomy. This procedure follows a percutaneous rendezvous technique that allows easier and safer selective cannulation of the common bile duct. Also of paramount importance is that it allows, during the same procedure, treatment of eventual T-tube-related adverse events (whose incidence could be

as high as 60%), biliary adverse events, or both, which are the most common adverse events after liver transplantation.

DISCLOSURE

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