

Endoscopic ultrasound-guided cholangiography and intraluminal needle puncture through a tight subhilar bile duct stricture for biliary stenting following failed ERCP

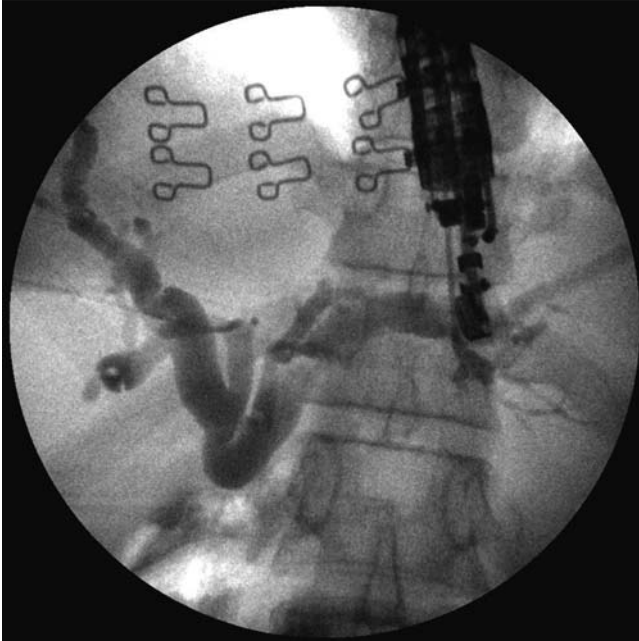


Fig. 1 Endoscopic ultrasound (EUS)-guided puncture of dilated left biliary radical showing a tight subhilar stenosis in a 39-year-old woman with obstructive jaundice, 1 month after cholecystectomy.



Fig. 2 Endoscopic retrograde cholangiopancreatography (ERCP) following EUS-guided puncture, showing details of the stricture and biliary radicals.

Endoscopic therapy by endoscopic retrograde cholangiopancreatography (ERCP), stricture dilation, and sequential multiple stent placement is the standard treatment option for benign biliary strictures, and has favorable results [1]. Occasionally,

tight biliary stricture can pose a technical challenge by not allowing the guide wire to pass. Recently, endoscopic ultrasound (EUS)-guided biliary access has been shown to be safe and successful in cases of failed ERCP due to inability to cannulate

[2]. It is not known whether the EUS-guided rendezvous procedure also facilitates guide wire passage across difficult strictures. We report a case of post-cholecystectomy subhilar stricture in which ERCP-guided passage of the guide wire across the stricture was unsuccessful. Hence, EUS-guided cholangiography was carried out followed by intraluminal needle puncture of the stricture with a 18-gauge needle device to pass the guide wire, with completion of the ERCP and stenting.

A 39-year-old woman presented with obstructive jaundice 1 month after cholecystectomy. Magnetic retrograde cholangiopancreatography (MRCP) revealed a stricture in the subhilar region. An ERCP was attempted and the cholangiogram showed a tight stricture in the subhilar region with minimal opacification of the common hepatic duct. The guide wire (.035 inches and .032 inches Terumo, Terumo Corporation, New Jersey, USA) could not be negotiated through the stricture. Endoscopic ultrasound (EUS) was done for two reasons: first, to attempt a rendezvous procedure, and second, to obtain a cholangiogram of the proximal biliary system to assist with rescue intraluminal needle puncture across the stricture at ERCP if the rendezvous procedure was not technically feasible. A 19-gauge EUS fine needle aspiration (FNA) needle (Cook Medical, Winston-Salem, North Carolina, USA) was used to puncture the left hepatic system. Contrast injection showed a type I stricture (● Fig. 1). However the 0.032-inch guide wire could not be passed across the stricture. Opacification of the intrahepatic biliary system allowed complete delineation of the 1.5-mm long stricture from above (● Fig. 2). There was complete cut-off at the level of the common hepatic duct, and hence we decided to abandon the rendezvous procedure and attempt ERCP-guided intraluminal needle puncture across the stricture.

During the ERCP, an Artifon suprapapillary bile duct puncture catheter (SCITECH, Sao Paulo, Brazil), was passed through the papilla and positioned fluoroscopically at the distal end of the stricture. The needle from the catheter was advanced into the stricture and sustained pressure applied in the direction of the common hepatic duct, which was visualized on the EUS-guided cholangiogram. The needle easily traversed through the stricture into the common hepatic duct. A 0.032-inch guide wire was then passed into the right hepatic system (● Fig. 3). The stricture was dilated using a biliary dilator and a



Fig. 3 The Artifon catheter with the guide wire across the stricture.

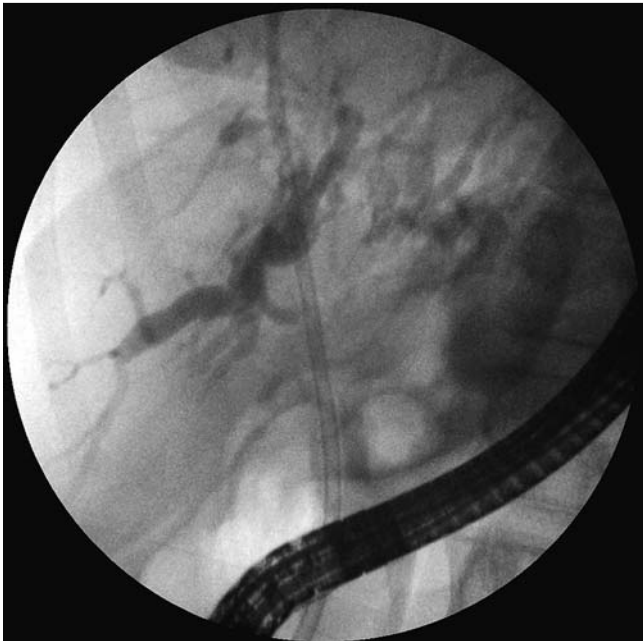


Fig. 4 A 10-Fr plastic stent is seen across the stricture with good drainage.

10-Fr plastic biliary stent was placed into the right hepatic duct (● Fig. 4). There were no post-procedural complications and patient was discharged after 72 hours.

This is the first report of negotiation of a bile duct stricture using a biliary puncture catheter after EUS-guided cholangiography and direct intraluminal puncture of the stricture. The biliary puncture catheter

(Artifon catheter) was originally devised for EUS-guided suprapapillary transduodenal bile duct puncture to avoid cannulation through the papilla [3]. Since then, it has been used by Gupta et al for blind puncturing of common bile duct strictures after MRCP to determine the stricture characteristics [4]. We believe that blind puncture of the stricture poses a risk of perforation, which could be pre-

vented in our patient by use of EUS-guided contrast injection in the intrahepatic biliary tree. The subhilar position of the stricture allowed us to pass an adequate length of the puncture catheter in the common bile duct, which we believe is critical for positioning the catheter in the required direction of puncture.

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Competing interests: None

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