Novel technique for intraductal cholangioscopy-assisted biliary drainage with over-the-wire microcatheter manipulation

Cholangioscopy-assisted guidewire placement is reported to be a useful method for endoscopic biliary drainage that is made difficult by complex strictures and obstructions [1–5]. However, the guidewire sometimes becomes misdirected because of the lack of contrast-filled images. With the aim of improving safety and certainty, we present two practical cases that employ a novel technique using an over-the-wire microcatheter through digital intraductal cholangioscopy (SpyGlass DS; Boston Scientific, Natick, Massachusetts, USA).

Case 1 involved a 72-year-old woman with hilar cholangiocarcinoma who underwent endoscopic biliary drainage for segmental cholangitis. The cholangiogram showed complete obstruction of the left hepatic duct (Fig. 1). Although direct visualization with IDC allowed advancing the 0.025-inch guidewire over the obstructing tumor in the left hepatic duct, the guidewire lost the pathway to the left intrahepatic bile duct. The 3-Fr outer sheath of a basket catheter (Micro-Catch; MTW Endoskopie, Düsseldorf, Germany), which can be inserted into the SpyGlass DS, was introduced as a microcatheter in order to inject contrast medium and assist guidewire manipulation. The contrast-filled image of the left intrahepatic bile duct allowed successful negotiation (Fig. 2), followed by replacement of the endoscopic nasobiliary drainage tube (Video 1). Case 2 involved a 79-year-old man with acute cholecystitis. The cholangiogram showed complete obstruction of the cystic duct (Fig. 3), which prevented guidewire advancement under fluoroscopic imaging. The orifice of the cystic duct and allows insertion of the guidewire with the over-the-wire microcatheter.
cystic duct (▶ Fig. 4). At one point when the guidewire was advanced in an unknown direction, contrast injection through the microcatheter showed clearly that the guidewire had penetrated the peritoneal cavity (▶ Fig. 5). The microcatheter also assisted with maneuvering of the guidewire to correct its course, resulting in successful access to the gallbladder, completed by insertion of a plastic stent (▶ Video 1).

Cholangioscopic operation with a microcatheter offers advantages both for obtaining selective contrast-filled images and for delicate manipulation of the guidewire as performed in selective angiographic examinations.

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