Endoscopic ultrasound-guided one-step antegrade metal stent placement with an ultra-slim introducer for preoperative biliary drainage

A 55-year-old-female suffered from advanced obstructive jaundice due to resectable pancreatic cancer (▶ Fig. 1). Preoperative biliary drainage via endoscopic retrograde cholangiopancreatography (ERCP) was attempted but unsuccessful due to duodenal obstruction. We then attempted endoscopic ultrasound-guided antegrade stenting using a novel uncovered self-expandable metal stent (SEMS) with an ultra-slim 5.4-Fr introducer and an ultra-tapered stiff tip (YABUSAME; Kaneka Medix, Osaka, Japan) (▶ Fig. 2) after placement of a duodenal stent (▶ Video 1). B2 was punctured with a 19-gauge needle via the stomach followed by contrast injection to depict the biliary tree (▶ Fig. 3a). Then, a 0.025-inch angle-tip guidewire (INAZUMA; Kaneka Medix) was successfully manipulated antegrade into the duodenum through the stricture. Just after a removal of the needle, an introducer of a YABUSAME (10×60 mm) was inserted into the bile duct without any tract dilation and easily passed through the stricture (▶ Fig. 3b). Finally, the stent was deployed (▶ Fig. 3c). No adverse events had occurred for two weeks until surgery. EUS-guided biliary drainage includes bilioenterostomy, the rendezvous technique, and antegrade stenting. In preoperative biliary drainage, EUS-guided antegrade stenting is a simpler method; however, tract dilation with a dilator [2] or catheter [3] prior to insertion of a SEMS introducer is usually required and that increases a risk of the bile leak. In antegrade stenting, this novel introducer is likely to allow a SEMS to be placed just after needle removal and the bile leak and procedural time to be decreased. This method could be a useful alternative after failed ERCP in preoperative biliary drainage.

Competing interests

The authors declare that they have no conflict of interest.

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**Fig. 3** Fluoroscopic views of endoscopic ultrasound-guided one-step antegrade stenting. a Cholangiogram after the puncture of B2 via the stomach depicted the dilated intrahepatic bile ducts and proximal common bile duct. A duodenal stent was placed in the second part of the duodenum (arrow). b Just after the removal of the needle leaving a guidewire in the duodenum, an introducer of an uncovered self-expandable metal stent was inserted into the duodenum over the guidewire. c The stent (10 × 60 mm) was deployed across the stricture.