Through-the-cholangioscope metal biliary stent placement as a novel endoscopic technique for bile duct strictures

The management of biliary strictures remains challenging. Biliary drainage via endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasound (EUS) are the currently preferred approaches [1–3], but advances in cholangioscopy are allowing new tools to be considered [4]. We present our experience using a novel through-the-cholangioscope self-expandable metal stent (TTC-SEMS; Micro-Tech, Nanjing, China) (▶ Video 1).

A 61-year-old woman who had had a plastic stent in place for 3 months for a long stricture in the common bile duct presented with weight loss and right upper quadrant abdominal pain. EUS revealed biliary tract dilatation and a Bismuth-Corlette type 1 stricture (▶ Fig. 1). The patient refused to undergo surgery and instead underwent artificial intelligence (AI)-assisted cholangioscopy (AIworks-Cholangioscopy; mdconsgroup, Ecuador). A malignancy was detected, and a tissue sample was obtained, with rapid on-site evaluation being positive for malignancy. A 5Fr, 10-mm × 6-cm TTC-SEMS was delivered, without technical difficulties, with its position confirmed by direct visualization (▶ Fig. 2). The patient’s symptoms resolved within 24 hours of the procedure.

A 74-year-old man presented with a 2-month history of jaundice, weight loss, and ascites. ERCP revealed a type I Bismuth-Corlette stricture (▶ Fig. 3), and a plastic stent was placed. EUS revealed a 20 × 24-mm hypoechoic irregular lesion. Biliary drainage was performed via a gastric approach with a 10 × 10-mm lumen-apposing metal stent (LAMS), and the plastic stent was removed 1 month later.
AI-assisted cholangioscopy detected a digitiform lesion (Fig. 4 and Fig. 5); biopsy confirmed cholangiocarcinoma. Radiofrequency ablation was performed, with subsequent placement of a 5F, 10-mm × 6-cm TTC-SEMS. No adverse events were reported within 48 hours. We achieved both technical (correct stent positioning under direct visualization) and clinical (symptom reduction) success. The use of AI significantly contributed to effective tissue sampling. No adverse events were reported. One advantage of TTC-SEMSs is their placement under direct visualization, resulting in a reduction in fluoroscopic radiation—a first step for the future of stent placement procedures without fluoroscopic guidance. The use of TTC-SEMSs is promising and needs to be explored for the management of biliary strictures.

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Conflict of Interest
C. Robles-Medranda is a consultant and key opinion leader for Pentax Medical, Steris, Medtronic, Motus, Micro-Tech, G-Tech Medical Supply, CREO Medical, and mdconsgroup. M. Egas-Izquierdo, J. Alcívar-Vásquez, M. Puga-Tejada, M. Arevalo-Mora, D. Cunto, and J. Baquerizo-Burgos declare that they have no conflict of interest.

Bibliography
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