Novel wire-guided fine-gauge bougie dilator for transpapillary or endoscopic ultrasonography-guided biliary drainage

Endoscopic management of biliary stricture generally requires dilation using devices such as an endoscopic retrograde cholangiopancreatography (ERCP) balloon dilation catheter before stenting [1]. Endoscopic ultrasonography (EUS)-guided biliary drainage (EUS-BD) also requires fistula dilation before stenting. Recently, ultraslim balloon catheters [1] and diathermic dilators [2] have also been developed as dilation devices. These devices must be wire-guided, coaxial with the guidewire, fine-gauge, and sufficiently stiff.

Herein, we present two patients who successfully underwent biliary dilation using a novel wire-guided fine-gauge bougie dilator (ES dilator soft type; Zeon Medical Inc., Tokyo, Japan) (▶ Fig.1 and ▶ Fig.2) for transpapillary drainage and EUS-BD.

The first patient was a 79-year-old man who was admitted with obstructive jaundice having undergone placement of self-expandable metal stents (SEMSs) for perihilar bile duct cancer 5 months previously. An ERCP showed occlusion of the SEMSs (▶ Fig.3a). First, a 0.025-inch hard-type guidewire (VisiGlide 2; Olympus, Tokyo, Japan) was placed. A tapered ERCP catheter and a dilation catheter (SBDC-6; Cook Japan, Tokyo, Japan) could not be passed through the stricture (▶ Video1). The novel dilator was then inserted, resulting in successful passage through the occluded SEMSs (▶ Fig.3b; ▶ Video1). Finally, an uncovered SEMS was placed without any complications.

The second patient was an 85-year-old man who was admitted with obstructive jaundice and a history of total gastrectomy and Roux-en-Y reconstruction for gastric cancer 21 years previously. A computed tomography (CT) scan showed an ampullary tumor and treatment by EUS-BD was selected. Firstly, B3 was punctured with a 19-gauge needle via the jejunum and a 0.025-inch hard-type guidewire (VisiGlide 2; Olympus) was placed. A tapered ERCP catheter was tried without success to dilate the fistula. Subsequently, dilation with the novel dilator was attempted, and this was successfully inserted into the intrahepatic bile duct (▶ Fig.4; ▶ Video2). Finally, EUS-guided antegrade stenting...
was performed without any complications (▶Video 2).
The novel wire-guided fine-gauge bougie dilator is useful for both transpapillary and fistula dilation in EUS-BD owing to its ideal thickness and stiffness.

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Competing interests

The novel bougie dilator has been developed through collaborative research between Dr. Kawakami and Zeon Medical Inc., Tokyo, Japan. Dr. Kawakami is a consultant and gives lectures for the Zeon Medical Inc. The authors declare no conflict of interests for this article.
The Authors

Hiroshi Kawakami, Yoshimasa Kubota
Department of Gastroenterology and Hepatology, University of Miyazaki and Center for Digestive Disease, University of Miyazaki Hospital, Miyazaki, Japan

Corresponding author

Hiroshi Kawakami, MD, PhD
Department of Gastroenterology and Hepatology, University of Miyazaki, Center for Digestive Disease, University of Miyazaki Hospital, 5200, Kihara, Kiyotake, Miyazaki 889-1692, Japan
Fax: +81-985-859802
hiropon@med.miyazaki-u.ac.jp

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Fig. 3 Radiographic images from patient #1 showing: a recurrent perihilar biliary obstruction after multistenting in a stent-in-stent fashion; b the ES dilator soft type (arrow) that has been passed through the refractory biliary stricture.

Fig. 4 Radiographic image from patient #2 showing the ES dilator soft type (arrow) that was successfully advanced through the jejunal wall and intrahepatic bile duct after a failed attempt at fistula dilation using a tapered endoscopic retrograde cholangiopancreatography catheter. Inset: Endoscopic ultrasonography view showing the ES dilator soft type (arrow).