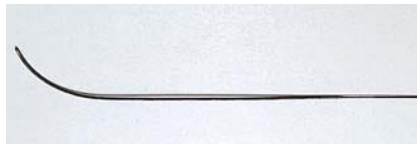


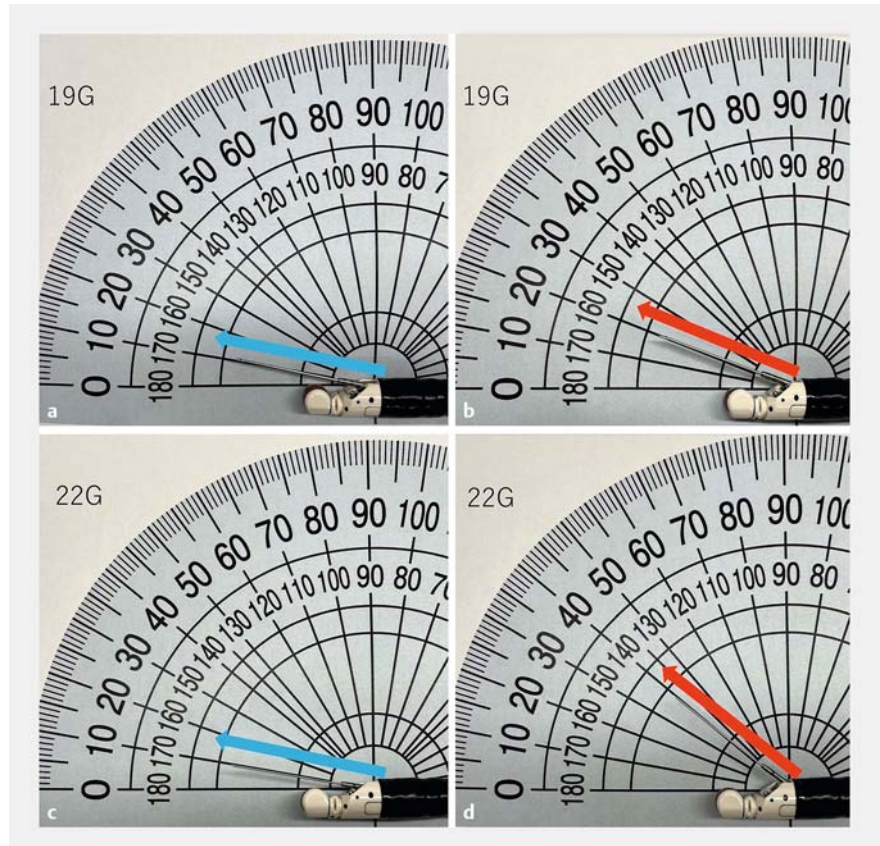


## Endoscopic ultrasound-guided rendezvous technique in a transduodenal long endoscopic position using a 22 G needle combined with a novel 0.018-inch guidewire



► **Fig. 1** The novel 0.018-inch guidewire (Fielder 18; Olympus, Tokyo, Japan).

The endoscopic ultrasound-guided rendezvous technique (EUS-RV) is a salvage technique for failed biliary cannulation with benign disorders, but its success rate is not high [1–3]. The approach in a transduodenal, long endoscopic position (TDL) is preferred because it provides easier access to the bile duct, even if the bile duct is not dilated, as it stabilizes the scope position [4]. However, the TDL method, with a combination of a 19 G needle and 0.025-inch guidewire, directs the puncture needle toward the hepatic hilum because the range of motion of the scope and the needle is limited, making guidewire advance to the papilla challenging. Recently, a novel 0.018-inch guidewire (Fielder 18; Olympus, Tokyo, Japan) has been developed, which is similar to a 0.025-inch guidewire with good visibility, maneuverability, and stiffness (► **Fig. 1**). Compared with the 19 G needle with 0.025-inch guidewire, a 22 G needle with the 0.018-inch guidewire has a more extensive range of motion for puncture, and the scope can be bent more acutely (► **Fig. 2**, ► **Fig. 3**). Therefore, the tip of the puncture needle can be directed toward the papilla, and the excellent maneuverability of this guidewire allows easier advance into the duodenum (► **Fig. 4**). The 22 G needle may prevent bile leakage during the procedure due to its smaller diameter. A 74-year-old man underwent EUS-RV for common bile duct stones after failed biliary cannulation with endoscopic retrograde cholangiopancreatography. The extrahepatic bile duct was punctured



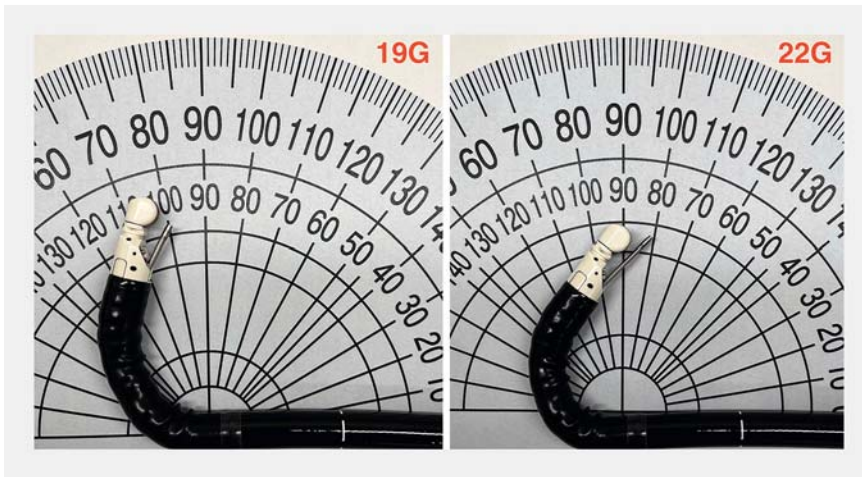
► **Fig. 2** Compared with the 19 G needle, the 22 G needle has a larger range of motion for puncture. **a** 19 G needle inserted in the scope, with flat forceps elevation. **b** 19 G needle inserted in the scope, with maximum up-angle forceps elevation. **c** 22 G needle inserted in the scope, with flat forceps elevation. **d** 22 G needle inserted in the scope, with maximum up-angle forceps elevation.

during the TDL approach using a 22 G needle, with the 0.018-inch guidewire allowing easy advance into the duodenum. After passing through the papilla with the guidewire, biliary cannulation was achieved along the guidewire (► **Video 1**). Finally, the stones were successfully removed without complications. Combining a 22 G needle and 0.018-inch guidewire may facilitate the EUS-RV technique and lead to a higher success rate of biliary cannulation.

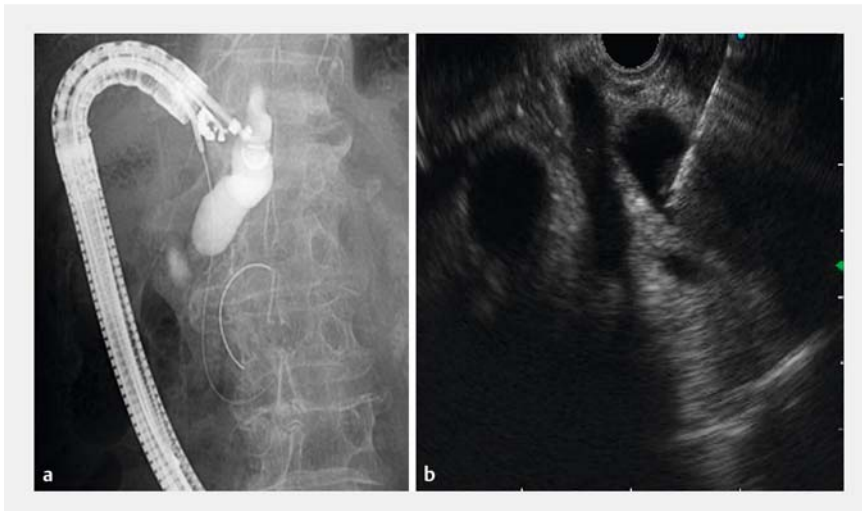
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### Competing interests

The authors declare that they have no conflict of interest.



► **Fig. 3** The scope with a 22 G needle can be bent more acutely than a scope with a 19 G needle.



► **Fig. 4** Endoscopic ultrasound (EUS)-guided rendezvous technique using the novel 0.018-inch guidewire in combination with a 22 G needle. **a** Fluoroscopic image. **b** EUS image.

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Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany



## The authors

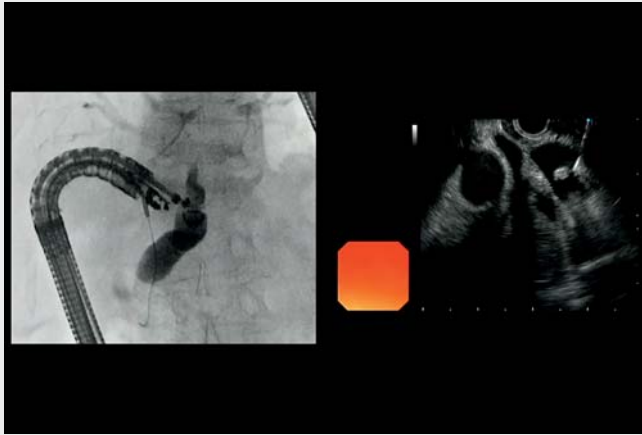
Shogo Ota, Hideyuki Shiomi, Ryota Nakano, Hiroko Iijima

Division of Gastroenterology and Hepatobiliary and Pancreatic Diseases, Department of Internal Medicine, Hyogo Medical University, Nishinomiya, Japan

## Corresponding author

Hideyuki Shiomi, MD

Division of Gastroenterology and Hepatobiliary and Pancreatic Diseases, Department of Internal Medicine, Hyogo Medical University, 1-1 Mukogawa-cho, Nishinomiya 663-8501, Hyogo, Japan  
hideshio0403@gmail.com



**Video 1** Endoscopic ultrasound-guided rendezvous technique using a 22 G needle and a 0.018-inch guidewire. The extrahepatic bile duct was punctured using the needle during the transduodenal, long endoscopic position approach, and the guidewire was advanced into the duodenum.

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