

Endoscopic ultrasound-guided antegrade diathermic dilation followed by self-expandable metal stent placement for malignant distal biliary stricture

Endoscopic ultrasound (EUS)-guided antegrade stenting (AGS) is established as an alternative interventional technique in patients in whom endoscopic transpapil-

lary stenting has failed [1,2]. Here, we present a patient who underwent EUS-AGS after diathermic dilation with placement of a self-expandable metal stent

(SEMS) for a malignant distal biliary stricture.

A 58-year-old woman with cancer of unknown origin and obstructive jaundice was referred to our hospital. She had undergone transpapillary stenting using a plastic stent at another hospital 2 months previously. Esophagogastroduodenoscopy (EGD) to reach the papilla of Vater was not feasible because of gastric outlet obstruction. Therefore, we attempted EUS-AGS via the stomach. First the intrahepatic bile



Fig. 1 Radiographic images showing: **a** a guidewire that has been advanced into the duodenum across the distal biliary stricture and the plastic stent that was previously placed via the transpapillary approach; **b** the tapered endoscopic retrograde cholangiopancreatography (ERCP) catheter that could not be advanced across the stricture; **c** the wire-guided diathermic dilation being performed; **d** free drainage of contrast after endoscopic ultrasound-guided antegrade wire-guided diathermic dilation and antegrade placement of a biliary self-expandable metal stent (SEMS).

duct was punctured using a 19-gauge needle and an EUS-guided cholangiogram was performed. Following this a 0.025-inch guidewire was advanced across the stricture alongside the plastic stent under fluoroscopic guidance (▶ Fig. 1 a). Thereafter, we tried to dilate the stricture using a tapered endoscopic retrograde cholangiopancreatography (ERCP) catheter, but it was not possible to pass the catheter across the stricture (▶ Fig. 1 b).

We then performed a dilation of the stricture using a 6-Fr wire-guided diathermic dilator (Cysto-Gastro-Set; EndoFlex, GmbH, Voerde, Germany) with a blended cut mode (▶ Fig. 1 c). Finally, an uncovered SEMS with a fine delivery system (Zilver635; Cook Japan, Tokyo, Japan) was placed across the stricture alongside the obstructed plastic stent without any complications (▶ Fig. 1 d; ▶ Video 1). Recently, EUS-AGS using a tapered ERCP catheter and an uncovered SEMS with a fine delivery system has been reported [3]. We also reported EUS-guided ante-

grade wire-guided diathermic dilation followed by SEMS placement for refractory severe benign biliary stricture [4]. To our knowledge, this is the first report of combined EUS-AGS with diathermic dilation and placement of an uncovered SEMS for a malignant biliary stricture. EUS-guided antegrade wire-guided diathermic dilation is useful for severe strictures that cannot be dilated with conventional techniques as well as for the transpapillary approach [5].

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Hiroshi Kawakami, Masaki Kuwatani, Kazumichi Kawakubo, Taiki Kudo, Yoko Abe, Kimitoshi Kubo, Yoshimasa Kubota, Naoya Sakamoto

Department of Gastroenterology and Hepatology, Hokkaido University Graduate School of Medicine, Sapporo, Japan

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Corresponding author

Hiroshi Kawakami, MD, PhD
 Department of Gastroenterology and Hepatology
 Hokkaido University Graduate School of Medicine
 Kita 15, Nishi 7, Kita-ku
 Sapporo 060-8638
 Japan
 Fax: +81-11-7067867
hiropon@med.hokudai.ac.jp

Video 1

Endoscopic ultrasound (EUS)-guided antegrade diathermic dilation and stenting for a severe refractory distal biliary stricture following conventional transpapillary stenting.