

Antegrade stenting combined with hepaticogastrostomy using a 5.4-Fr novel ultra-slim metallic stent and dedicated stent under EUS guidance (with video)

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EUS-guided biliary drainage (EUS-BD) has been developed for failed or difficult ERCP. In particular, EUS-guided antegrade stenting (EUS-AGS) combined with EUS-guided hepaticogastrostomy (EUS-HGS) is suitable for gastric outlet obstruction (GOO) or surgically altered anatomy.^[1] However, EUS-BD requires fistula dilation before stenting and carries the potential risk of bile leak from the fistula. Herein, we present the case of a patient who underwent EUS-HGS combined with EUS-AGS for unresectable duodenal cancer, using novel ultra-slim devices.

A 78-year-old woman presented with a 1-week history of vomiting and obstructive jaundice. Esophagogastroduodenoscopy revealed advanced duodenal cancer and GOO [Figure 1a]. Contrast-enhanced computed tomography showed distal bile duct obstruction caused by the duodenal cancer [Figure 1b]. We performed EUS-AGS combined

with EUS-HGS for BD. First, a B₃ branch was punctured using a 19G needle, and a 0.025" stiff guidewire (VisiGlide 2, Olympus Inc. Tokyo, Japan) was placed [Video 1]. Next, a tapered ERCP catheter was used to dilate the fistula following successful passage of the guidewire through the distal bile duct stricture. Then, EUS-AGS was performed using a novel ultra-slim uncovered self-expandable metal stent (ZEOSTENT V; 5.4-Fr delivery system, 10-mm diameter; Zeon Medical Inc. Tokyo, Japan) [Figure 2a and b]. Finally, a novel 7-Fr plastic stent (TYPE-IT stent; Gadelius Medical Co. Ltd., Tokyo, Japan) [Video 1] was placed to create an EUS-HGS without any complications [Figure 2c and Video 1].

Bile leaks are a concern during EUS-BD, and they can be minimized by avoiding unnecessary dilation

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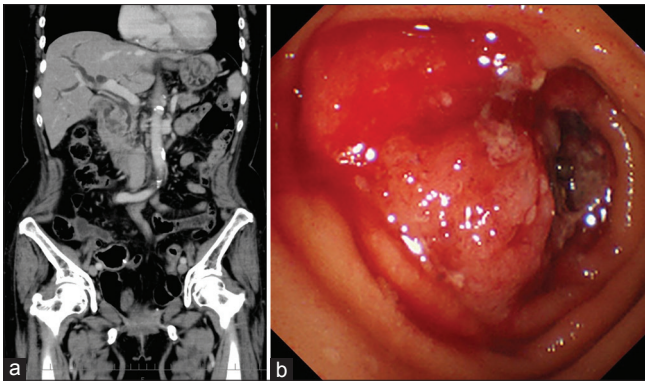


Figure 1. (a) Endoscopic image showing duodenal cancer and gastric outlet obstruction. (b) Radiograph showing distal bile duct obstruction caused by duodenal cancer

and reducing device exchanges. Ultra-slim devices (7-Fr or less) are suitable as they can facilitate the procedure.^[1,2] Ultra-slim devices also allow for relatively easy stent deployment with less frequent microdamage to the echoendoscope. Although a consensus cannot be reached in EUS-BD, EUS-AGS combined with EUS-HGS using ultra-slim devices is safe. Thus, the development of uncovered metallic stents with ultra-slim delivery is a key for successful procedure.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

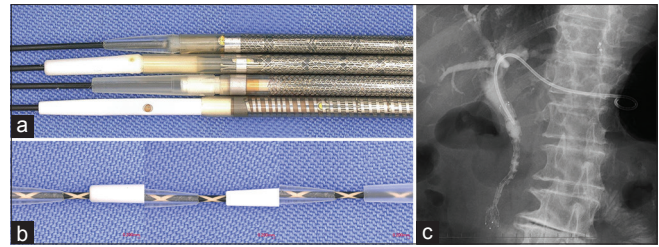


Figure 2. (a) Tips and delivery systems of various ultra-slim self-expandable uncovered metallic stents. Top: ZEOSTENT V (Zeon Medical Inc. Tokyo, Japan; 5.4-Fr maximum diameter), the drawer second: BileRush Selective (Piolax Medical Devices, Yokohama, Japan; 5.7-Fr maximum diameter), the drawer third: Epic™ Biliary Stent (Boston Scientific Japan, Tokyo, Japan, 6.0-Fr maximum diameter), bottom: Zilver635 Biliary Metallic Stent (Cook Medical, Bloomington, IN, USA, 6.0-Fr maximum diameter). (b) Comparison of tips over a 0.025" guidewire with various ultra-slim self-expandable uncovered metallic stents (left side in each: ZEOSTENT V). (a) (left) BileRush Selective (maximum diameter of 5.7 Fr, Piolax Medical Devices, Yokohama, Japan), (b) (middle) ZILVER635 (maximum diameter of 6.0 Fr, Cook Medical, Bloomington, IN, USA), (c) (right) Epic™ Biliary Stent (maximum diameter of 6.0 Fr, Boston Scientific Japan, Tokyo, Japan). (c) Radiograph showing EUS-guided antegrade stenting with a novel 5.4-Fr uncovered self-expandable metallic stent combined with EUS-guided hepaticogastrostomy with a novel dedicated 7.0-Fr plastic stent

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Nil.

Conflicts of interest

There are no conflicts of interest.

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