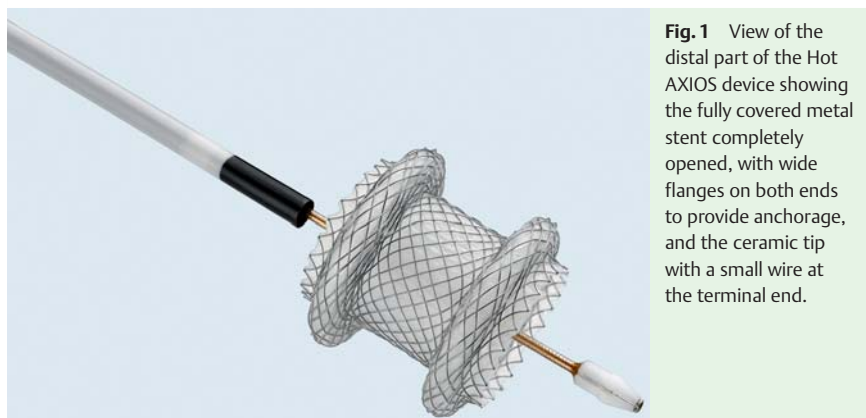
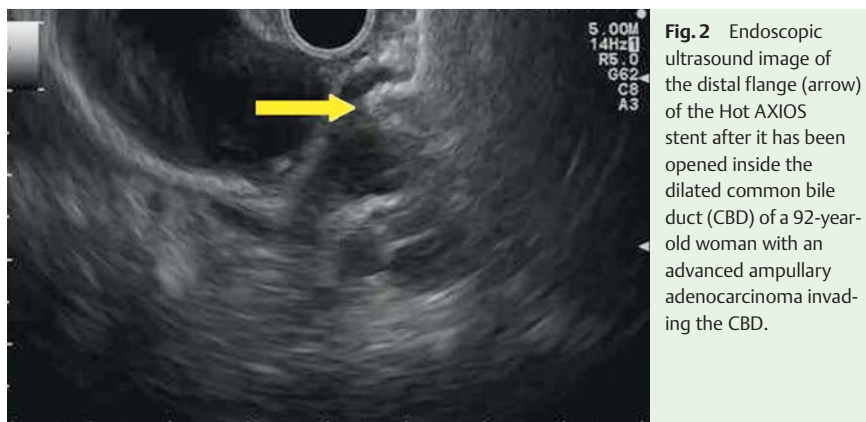


## Fluoroless endoscopic ultrasound-guided biliary drainage after failed ERCP with a novel lumen-apposing metal stent mounted on a cautery-tipped delivery system



**Fig. 1** View of the distal part of the Hot AXIOS device showing the fully covered metal stent completely opened, with wide flanges on both ends to provide anchorage, and the ceramic tip with a small wire at the terminal end.



**Fig. 2** Endoscopic ultrasound image of the distal flange (arrow) of the Hot AXIOS stent after it has been opened inside the dilated common bile duct (CBD) of a 92-year-old woman with an advanced ampullary adenocarcinoma invading the CBD.

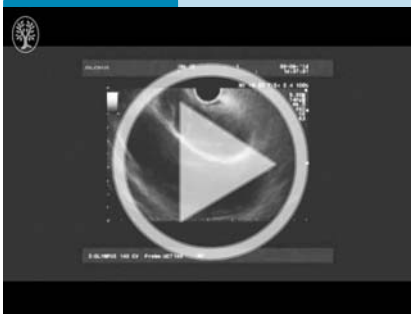
Endoscopic ultrasound (EUS)-guided biliary drainage in patients in whom endoscopic retrograde cholangiopancreatography (ERCP) has failed is rapidly gaining acceptance as a valid alternative to percutaneous drainage [1]. In the last few years, fully covered self-expandable metal stents specifically designed for EUS transmural drainage procedures have become available [2,3]. Recently, one of these stents has been incorporated into an electrocautery-enhanced delivery system (Hot AXIOS; Boston Scientific, Natick, Massachusetts, USA) [4,5] (► **Fig. 1**), allowing the procedure, from puncturing to delivery of the stent, to be performed in one step.

We present the case of a 92-year-old woman with an advanced ampullary ade-

nocarcinoma invading the common bile duct (CBD). ERCP had failed in this patient because of an inability to cannulate the duct. She consented to undergo EUS-guided biliary drainage.

The dilated CBD (17 mm) was visualized from the duodenal bulb. A Hot AXIOS device with a stent 8 mm long and 8 mm wide was advanced outside the working channel to obtain full contact with the duodenal wall. Current with pure cut was then applied, allowing the device to enter the CBD. Once fully inside the CBD, the distal flange was opened under EUS guidance (► **Fig. 2**, ► **Video 1**). Subsequently, the flange was retracted toward the EUS transducer under ultrasound guidance, and once a change in its shape from flat to oval had been noted, the proximal

### Video 1



Fluoroless endoscopic ultrasound-guided biliary drainage after failed ERCP with a novel lumen-apposing metal stent mounted on a cautery-tipped delivery system.

flange was released. Good drainage of bile was observed at the end of the procedure (► **Video 1**). No complications occurred, and the stent remained completely patent until the patient died 4 months later.

This case shows the possibility of accomplishing EUS-guided biliary drainage in a one-step procedure with the Hot AXIOS device, which allows performance of the procedure completely under EUS guidance, without fluoroscopy. This eliminates the need for accessories exchange, theoretically decreasing the risk for complications, in particular bile leak.

Endoscopy\_UCTN\_Code\_CPL\_1AN\_2AD

**Competing interests:** Alberto Larghi is a consultant for Boston Scientific Corp., Natick, Massachusetts, USA. The other authors have no relevant competing interests to declare.

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