

# Endoscopic ultrasound-guided choledochoduodenostomy for obstructive jaundice with venous collaterals around the bile duct wall (with video)

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Endoscopic treatments using endoscopic ultrasound (EUS), such as biliary drainage,<sup>[1-3]</sup> have been developed as alternatives to endoscopic retrograde cholangiopancreatography (ERCP) or percutaneous transhepatic drainage by experienced endoscopists. Herein, we described EUS-guided biliary drainage performed for obstructive jaundice with venous collaterals around the bile duct wall.

A 70-year-old man presented to our hospital because of obstructive jaundice, after failed ERCP at another hospital. Contrast-enhanced computed tomography showed pancreatic cancer [Figure 1]. In addition, venous collaterals have developed around the common bile duct due to tumor embolization of the portal vein [Figure 2]. EUS showed large venous collaterals from around the ampulla of Vater to around the middle common bile duct [Video 1 and Figure 3]. If metallic stent placement had been performed under ERCP guidance, the large diameter of the metal stent would have resulted in compression of the venous collaterals around the site of bile duct stenosis or lower bile duct walls. Collateral growth may thus result. EUS-guided biliary drainage was, therefore, selected as an alternative method.

First, an echoendoscope was introduced into the duodenum. The common bile duct was then punctured using a 19-gauge fine needle aspiration needle (Sono Tip Pro Control 19G; Medi-Globe GmbH, Medico's Hirata, Osaka, Japan) under Doppler mode EUS [Figure 4]. Bile juice was aspirated, and contrast medium was injected. After obtaining cholangiography, a 0.025-inch guidewire (VisiGlide; Olympus Medical Systems, Tokyo,



Figure 1. Pancreatic cancer seen in the pancreatic head

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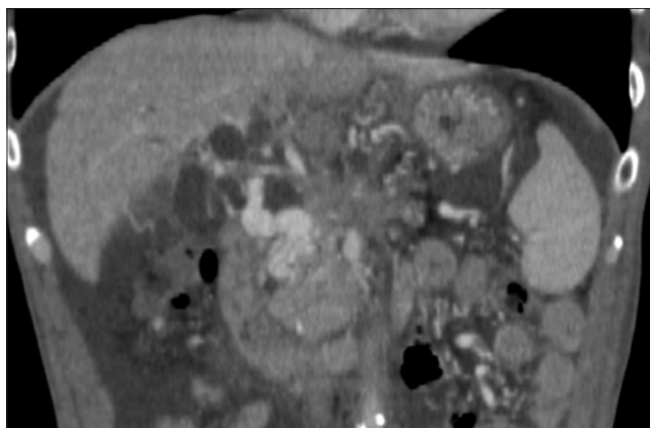
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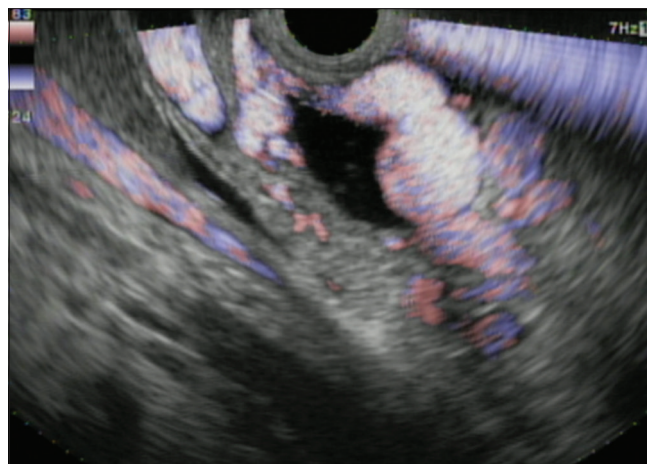
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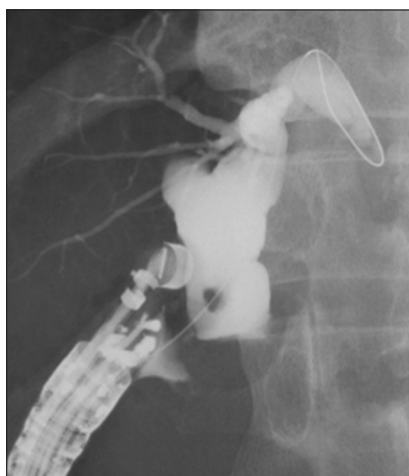
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**Figure 2.** On computed tomography, massive venous collaterals are evident around common bile duct



**Figure 3.** Venous collaterals are seen from the middle common bile duct to the ampulla of Vater



**Figure 4.** Dilation of the common bile duct and duodenal wall using a balloon catheter



**Figure 5.** Placement of a fully covered metallic stent placement from the common bile duct to the duodenum

Japan) was inserted into the intrahepatic bile duct. The bile duct and duodenal wall were then dilated using a 4 mm balloon catheter (ZARA EPBD Balloon Catheter; Century Medical, Tokyo, Japan). Finally, a fully covered metallic stent placement (10 mm × 6 cm, BONASTENT; Standard Sci Tech, Seoul, South Korea) was performed from the bile duct to the duodenum [Figure 5]. There was no adverse event related to the procedure. In addition, the patient underwent chemotherapy after EUS-guided choledochoduodenostomy (CDS). Until his death 5 months later, no adverse events associated with EUS-CDS were seen.

In patients showing venous collaterals around the common bile duct, EUS-guided biliary drainage may offer advantages such as avoiding collaterals' injury or development.

#### *Declaration of patient consent*

The authors certify that they have obtained all appropriate patient consent forms. In the form the

patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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#### *Conflicts of interest*

There are no conflicts of interest.

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