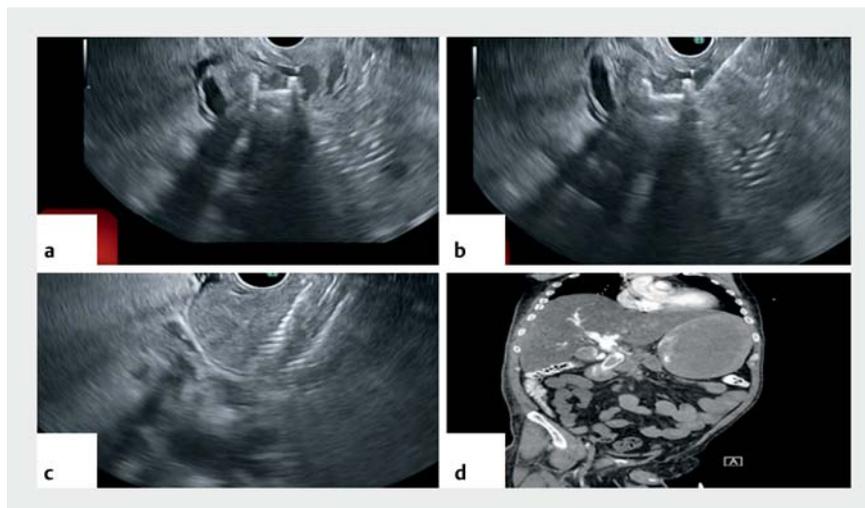


Aneurysm rupture after choledochoduodenostomy with lumen-apposing metal stent: endoscopic ultrasound-guided stenting of the bile duct in an endoscopically blind situation due to massive bleeding

Choledochoduodenostomy is now an alternative treatment when endoscopic retrograde cholangiopancreatography fails to drain the bile duct [1–3]. However, the apposition stent can cause artery erosion leading to severe bleeding [4, 5]. We report the case of a 56-year-old man with pancreatic cancer. Owing to dilation of the biliary tract, a choledochoduodenostomy was performed using a lumen-apposing metal stent (LAMS – Hot Axios; Boston Scientific, Marlborough, Massachusetts, USA). Although the procedure was effective during the early stages, 10 months later two obstructions occurred that required first placement of a double-pigtail stent and then mechanical de-obstruction.

A few minutes before the patient came into the operating room for de-obstruction, he presented hematemesis and signs of hemorrhagic collapse. After a failed attempt to find the LAMS with a colonoscope because of massive bleeding, we decided to use endoscopic ultrasound (EUS) to detect the LAMS within the large amount of blood. Under EUS guidance (► Fig. 1, ► Video 1), the center of the LAMS was punctured in order to introduce a guidewire (endoscopically and blindly), and two covered metallic stents were deployed in the biliary tract. Blood pressure was stabilized at the end of the procedure.

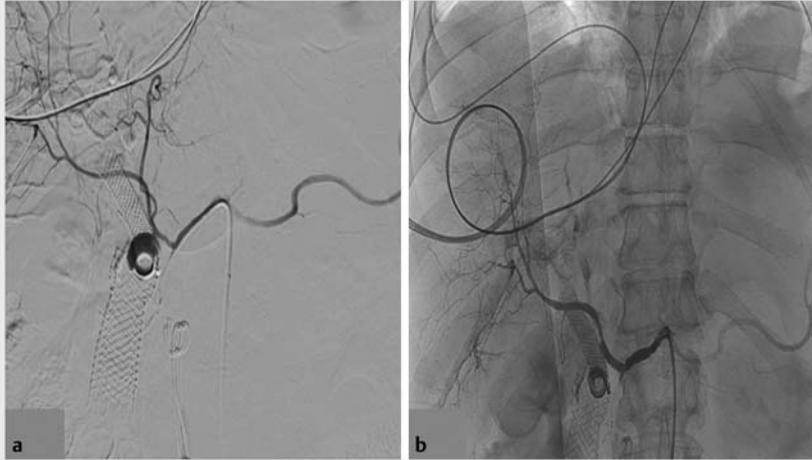
Immediately after the procedure, computed tomography scan showed a large hepatic artery aneurysm with remaining blush. Radiologists successfully placed a covered metallic stent (► Fig. 2) and the aneurysm was excluded. Unfortunately, a few days later, the patient died in the intensive care unit, probably due to massive tumor bleeding.



► **Fig. 1** Massive hemorrhage prevented the lumen-apposing metal stent (LAMS) from being located. **a** The LAMS was detected using endoscopic ultrasound (EUS). **b** The center of the LAMS was punctured under EUS guidance. **c** A covered metallic stent was deployed in the biliary tract. **d** Abdominopelvic computed tomography scan performed the same day showed the covered metallic stent inside the LAMS and intragastric bleeding from the hepatic artery.



► **Video 1** Aneurysm rupture after choledochoduodenostomy with a lumen-apposing metal stent. Stenting of the bile duct under endoscopic ultrasound guidance in an endoscopically blind situation due to the massive bleeding.



► **Fig. 2** Angiography performed by interventional radiology. **a** Extravasation of contrast indicated bleeding from a hepatic artery aneurysm. **b** Successful embolization of the bleeding aneurysm was achieved, next to the covered metallic stent.

This case underlines the risk of choledochoduodenostomy when placed for several months and the important help that ultrasound-guided techniques can offer to detect the bile duct and bleeding source in cases of massive bleeding that precludes endoscopic guidance.

Endoscopy_UCTN_Code_CPL_1AL_2AD

Competing interests

The authors declare that they have no conflict of interest.

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Endoscopy 2022; 54: E322–E323

DOI 10.1055/a-1529-5164

ISSN 0013-726X

published online 9.7.2021

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

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