

Hepaticoduodenostomy (Right Intrahepatic Biliary Duct) Using a Lumen-Apposing Metal Stent

Carolina Chálim Rebelo Nuno Nunes Margarida Flor de Lima
Diogo Bernardo Moura José Renato Pereira Maria Antónia Duarte

Gastroenterology Department, Hospital do Divino Espírito Santo de Ponta Delgada, Ponta Delgada, Portugal

Keywords

Hepaticoduodenostomy · Lumen-apposing metal stent ·
Endoscopic ultrasound-guided biliary drainage

Hepatoduodenostomia (ducto biliar intrahepático direito) com prótese lumen-apposing

Palavras Chave

Hepatoduodenostomia · Prótese de aposição luminal ·
Drenagem biliar · Ecoendoscopia

Biliary decompression in cases of hilar obstruction is challenging, and the intrahepatic approach is often necessary [1]. We describe a case of endoscopic ultrasound-guided biliary drainage (EUS-BD) for unresectable hilar malignant obstruction, using lumen-apposing metal stent (LAMS).

A 85-year-old woman was admitted due to abdominal pain, jaundice, and choloria. From the personal history, it is worth noting a rectovaginal septum gastrointestinal stromal tumor (GIST), treated surgically in 2002 and with imatinib for 2 years. She was also being followed for pul-

monary nodules, suspected of malignancy. Abdominal computed tomography showed a 76 × 57 × 61 mm mass on the left hepatic lobe, with irregular borders, and central necrosis, suggestive of metastasis. This mass compressed the biliary tree at the hilar plaque and led to intrahepatic biliary dilatation (Fig. 1). She had portal vein invasion, pulmonary and peritoneal metastasis. Biochemical workup showed a cytocholestatic pattern and total bilirubin of 26 mg/dL. The patient refused liver biopsy. After multidisciplinary discussion it was decided for an endoscopic palliative treatment. Transpapillary access through endoscopic retrograde cholangiopancreatography (ERCP) was attempted but failed due to impossibility of biliary cannulation.

The procedure was performed under deep sedation. A linear echoendoscope (GF-UCT260; Olympus Medical Systems, Tokyo, Japan) was used. There was a significant intrahepatic biliary dilation (12.8 mm), and the right intrahepatic biliary duct was close enough to the duodenal bulb (5 mm), without intervening vessels (as confirmed by color doppler). As so, we performed an hepaticoduodenostomy using a 6 × 8 mm LAMS (HotAxios™, Boston Scientific®, Marlborough, MA, USA): under ultrasound control, the right intrahepatic biliary duct was punctured

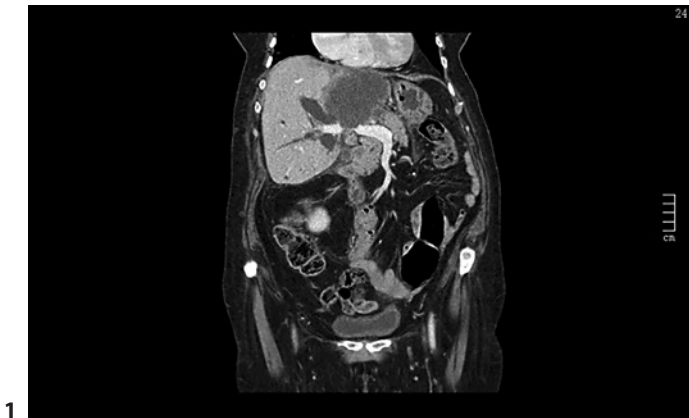


Fig. 1. Abdominal CT before the procedure.

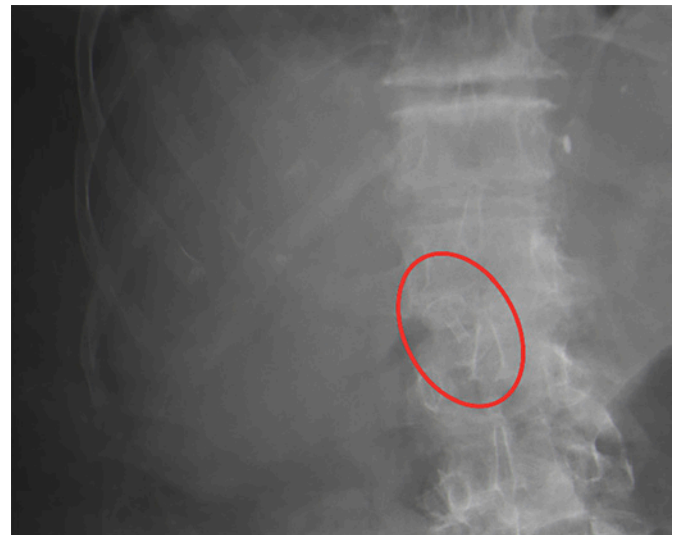


Fig. 2. Hepaticoduodenostomy at the end of the procedure on fluoroscopy.

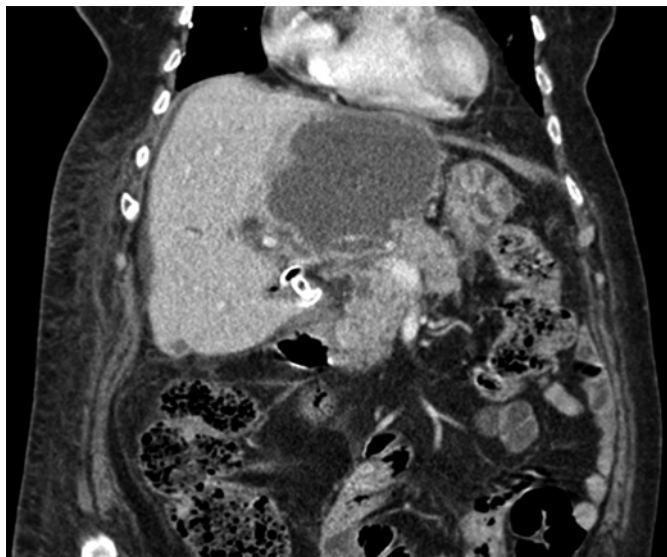


Fig. 3. Hepaticoduodenostomy on abdominal CT.

through the duodenal bulb. After deployment of the stent, we assisted to an abundant drainage of bile (online supplementary video, available at www.karger.com/doi/10.1159/000522578). Position of the stent was confirmed at the end of the procedure by fluoroscopy (Fig. 2).

The patient showed a clinical and laboratory improvement, with a total bilirubin of 7.37 mg/dL 72 h after the procedure. Control abdominal CT showed an improvement in intrahepatic biliary dilatation (Fig. 3). She was followed in palliative care, remained asymptomatic and

without complications related to the LAMS. She died 33 days after the procedure, due to disease progression.

The ease of deployment, lumen apposition configuration, and wider diameter of LAMS led to its use in an expanding variety of clinical scenarios, with a good safety profile [2]. Nevertheless, there are risks associated with its use, most commonly misdeployment of the distal or proximal flange and massive bleeding during fistulotomy [3]. Long-term complications described with the use of LAMS are stent migration or obstruction due to tumor progression or food impaction [4].

Although EUS-BD with LAMS has been extensively reported at the extrahepatic duct, LAMS may be an option to intrahepatic EUS-BD when there is enough intrahepatic duct dilation, no intervening vessels, and a stable access route [5]. We describe one of the first cases of hepaticoduodenostomy using LAMS.

Statement of Ethics

The subject's family gave their written informed consent to publish this case and images.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

None.

Author Contributions

Carolina Chálim Rebelo was responsible for writing the clinical case, review of literature, editing the video, and script of the manuscript. Nuno Nunes performed the procedure, gave important scientific input, and reviewed the manuscript. Margarida Flor de Lima and Diogo Bernardo Moura contributed with review of the literature and figure selection. José Renato Pereira and Maria Antónia Duarte guaranteed the accuracy of the content and did the final review before submitting.

Data Availability Statement

All data generated or analyzed during this study are included in this article and its online supplementary material files. Further enquiries can be directed to the corresponding author.

References

- 1 Minaga K, Takenaka M, Kitano M, Chiba Y, Imai H, Yamao K, et al. Rescue EUS-guided intrahepatic biliary drainage for malignant hilar biliary stricture after failed transpapillary re-intervention. *Surg Endosc*. 2017;31:4764–72.
- 2 DeWitt JM, Arain M, Chang KJ, Sharaiha R, Komanduri S, Muthusamy VR, et al. Interventional endoscopic ultrasound: current status and future directions. *Clin Gastroenterol Hepatol*. 2021;19(1):24–40.
- 3 Jacques J, Privat J, Pinard F, Fumex F, Valats JC, Chaoui A, et al. Endoscopic ultrasound-guided choledochoduodenostomy with electrocautery-enhanced lumen-apposing stents: a retrospective analysis. *Endoscopy*. 2019;51(6):540–7.
- 4 Anderloni A, Troncone E, Fugazza A, Cappello A, Del Vecchio Blanco G, Monteleone G, et al. Lumen-apposing metal stents for malignant biliary obstruction: is this the ultimate horizon of our experience? *World J Gastroenterol*. 2019;25(29):3857–69.
- 5 López AYC, Sanchez-Ocana R, Sevilla-Ribota S, De la Serna C, Perez-Miranda M. 974 Hepatico-duodenostomy with a lumen-apposing metal stent (LAMS) to achieve complete biliary drainage in a metastatic bilateral hilar stricture. *Gastrointest Endosc*. 2018;87:AB139.