



Severe Hemobilia Due to Arterio-Biliary Fistula. Diagnosis and Treatment by Endoscopic Ultrasound

*Maryana Bozhychko; Carolina Mangas-Sanjuan; Sandra Baile-Maxía; Lucia Medina-Prado; Juan Francisco Martinez; Juan Antonio Casellas; José Ramón Aparicio**

Endoscopy Unit, Hospital General Universitario de Alicante, Instituto de Investigación Sanitaria y Biomédica de Alicante, ISABIAL, Alicante, Spain.

***Corresponding Author(s): José Ramón Aparicio**

Endoscopy Unit, Hospital General Universitario de Alicante, C/ Pintor Baeza 12, 03010 Alicante, Spain.
Fax: +34-965933468; Email: japariciot@gmail.com

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Case report

Hemobilia or bleeding from the hepatobiliary tract and is an uncommon cause of upper gastrointestinal bleeding that it may be caused by iatrogenic biliary injury, malignancy or vascular malformations [1]. The management of significant hemobilia is focused on arterial embolization, however biliary stents have become accepted as alternative therapies [2].

We present the case of a 75-year-old man with locally advanced cholangiocarcinoma who was rejected for surgery and chemotherapy due to major comorbidities. Uncovered Self-Expandable Metal Stent (USEMS) for biliary drainage was initially placed by Endoscopic Retrograde Cholangiopancreatography (ERCP) with palliative intent.

The patient was admitted to the hospital because of hematemesis and hematochezia two months later. Emergent esophagogastroduodenoscopy (EGD) was unsuccessful due to the presence of blood and clots in the gastric lumen precluding the adequate mucosal examination. EGD carried out 12 hours later, documented absence of bleeding-related lesion.

On day 2 of his admission, the patient presented with cholangitis. ERCP demonstrated direct visualization of oozing blood through the papilla after endoscopic sphincterotomy. Therefore, hemobilia was confirmed as the cause of upper gastrointestinal bleeding. Balloon occlusion cholangiogram during ERCP



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showed a filling defect at the level of the USEMS and leaking of contrast dye into a vascular vessel (Figure 1). Pulsatile bleeding through the stent was visualized under fluoroscopic control. The patient presented with hemodynamic instability following the balloon catheter removal. Subsequently, a fully covered self-expandable metal stent (FCSEMS) (10x60 mm; WallFlex Biliary Stent; Boston Scientific Co., Marlborough Massachusetts, USA) was delivered blindly. Despite of stent placement, Endoscopic Ultrasound (EUS) revealed an anomalous artery adjacent to the USEMS with severe and persistent active bleeding into the common bile duct on Doppler view (Figure 2). Thereafter, embolization of the anomalous blood vessel was attempted using a 22-gauge needle and five 0.0018-inch coils (Tornado Em-

bolizations Coils, Cook Medical, Bloomington, Ind., USA) (Figure 3). Bleeding cessation and hemodynamic stabilization were achieved immediately after the procedure. Computed Tomography (CT) angiography didn't show contrast dye extravasation from the FCSEMS to the papilla (Figure 4). Transfusion of six units of packed red blood cells over 3 days was required.

Nevertheless, the patient suffered from a new episode of melena and anemia (7.6 mg/dl) one week later. At CT angiography, irregular anomalous artery with small pseudoaneurysms were observed. Subsequently, embolization of the left branch of the hepatic artery was successfully performed by the interventional radiologist (Figure 5).



Figure 1: The replenishment defect on the prosthesis level with contrast escape to vascular territory.

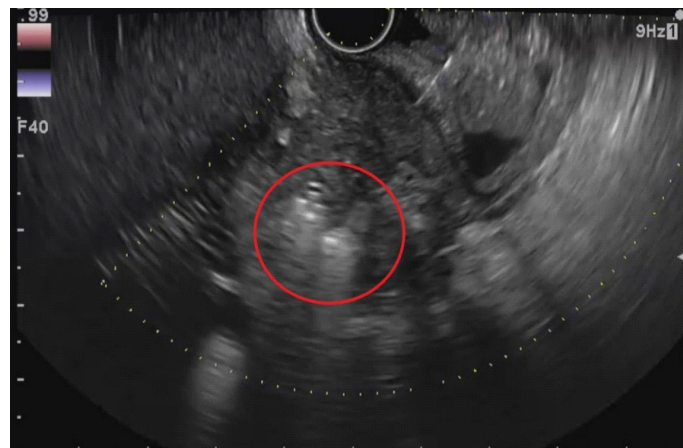


Figure 3: Embolization with 5 Tornado Embolizations Coils (COOK 0.0018") and 22 G needle.

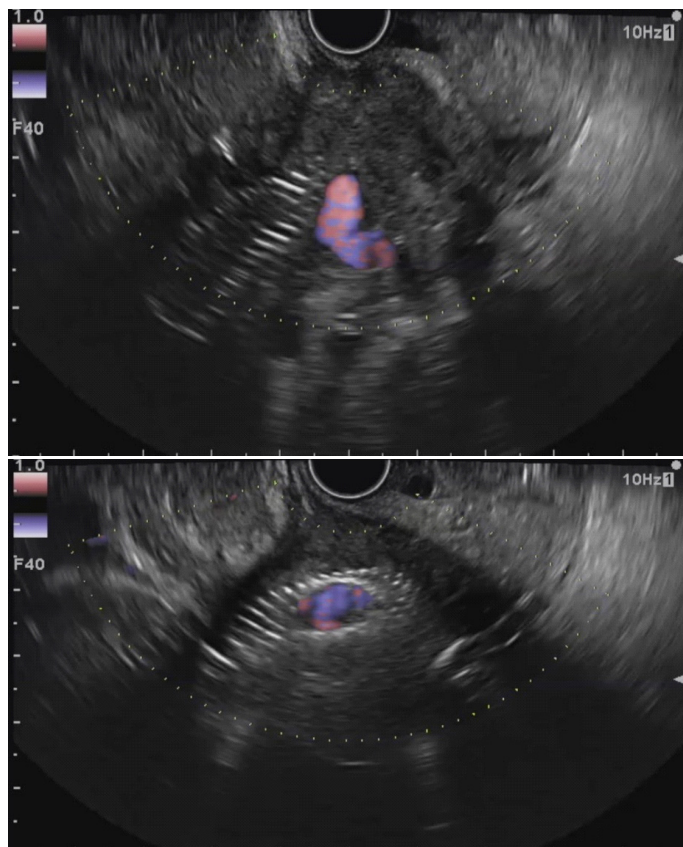


Figure 2: EUS view of the anomalous artery adjacent to the uncovered self-expandable metal stent.



Figure 4: Computed tomography (CT) angiography didn't show contrast dye extravasation.

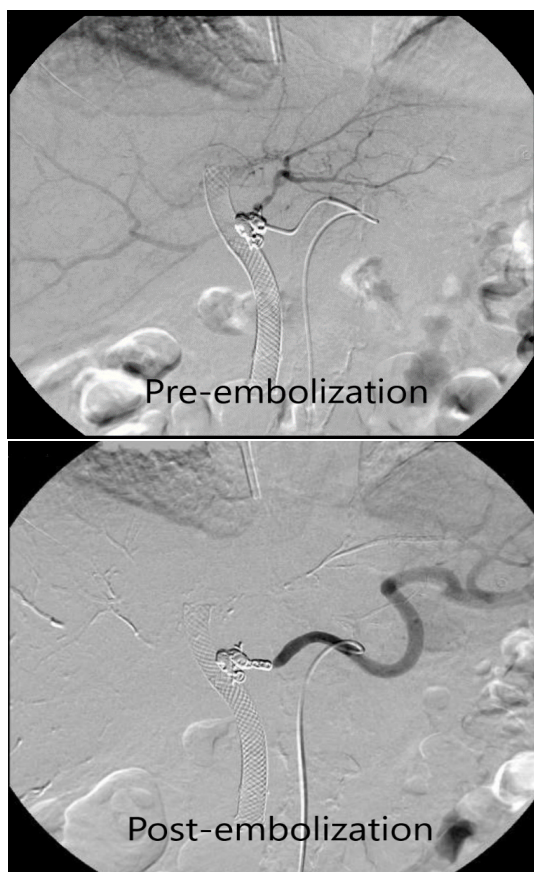


Figure 5: Embolization of the left branch of the hepatic artery.

No more bleeding or hemoglobin drop (final hemoglobin value 10.2 mg/dl) happened within the first days after the procedure. The patient received Vancomycin and Meropenem as antibiotics of choice due to cholangitis. Finally, the patient was discharged home after twenty-two days of hospitalization and no further bleeding or adverse events have occurred after 3 months of follow-up.

In certain cases, stents have shown to achieve immediate hemostasis by creating a tamponade effect on the bile wall while maintaining luminal patency and thus bile flow. [3]. In our case, hemobilia persisted because the proximal edge of the FC-SEMS didn't reach the arterio-biliary fistulae. CT angiography with arterial embolization should be considered as the initial therapy of choice if non-invasive imaging shows significant arterial extravasation, the presence of large arterial aneurysms or pseudoaneurysms or presence of arterio-biliary fistulae [4]. The placement of a covered metal stent over the site of vascular injury might be an alternative to embolization. Stenting has the advantage of preserving flow through the artery.

In our patient, EUS demonstrated the cause of hemobilia and allowed safe endovascular treatment with coils. The use of EUS and endoscopic endovascular embolization can be a safe and effective tool for selective treatment of a vascular lesion and, therefore, for the management of hemobilia.

Disclosure

Author JR.A. is consultant for Boston Scientific. Other authors have no COI to disclose.

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