

A case of successful endoscopic hemostasis with a covered self-expandable metal stent for the treatment of spurting hemobilia



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We occasionally encounter severe biliary hemorrhage due to pseudoaneurysm rupture after drainage with self-expandable metal stents (SEMSs) for malignant hilar biliary strictures. The incident rate of such hemorrhage was reported as 0.5% to 3.6%.¹⁻⁴ Most cases can result in mortality without suitable hemostasis therapy. Although we generally choose transcatheter arterial embolization (TAE), there are times when it is difficult to perform an emergency TAE. Herein, we present a rare case of biliary hemorrhage that was improved by endoscopic hemostasis therapy with a fully covered SEMS, which we demonstrate in this video (Video 1, available online at www.videogie.org).

A 91-year-old man was diagnosed with hilar cholangiocarcinoma and underwent endoscopic biliary drainage with 3 SEMSs using the partial stent-in-stent method approximately 14 months before presentation. Six months after SEMS placement, stent dysfunction occurred, and 3 plastic stents were inserted into the SEMSs. The plastic stents were replaced 3 times, whenever stent dysfunction occurred. He was admitted to our hospital with a fever. Blood examination revealed elevated white blood cells (10,170/ μ L), C-reactive protein (4.3 mg/dL), and total bilirubin (1.9 mg/dL). CT revealed a dilated intrahepatic bile duct and an invasive mass in the hilar region (Fig. 1). Therefore, the patient was diagnosed with a fever due to stent dysfunction. Although the cholangitis was mild, because the patient was elderly and had advanced cancer, we determined that early resolution was desirable and decided to proceed with an earlier stent replacement. A side-viewing endoscope (JF-260V or TJF-260v; Olympus Co, Ltd, Tokyo, Japan) was inserted through the duodenal stent (Fig. 2). Massive arterial bleeding was observed immediately after the removal of the first plastic

stent in the right posterior bile duct. When we finished removing all stents, spurting bleeding continued from the duodenal papilla (Fig. 3). We reviewed the CT images, and the right hepatic artery, located near the tumor, was found running inside the SEMS at the crossing site of the bile duct (Fig. 4). In addition, the findings suggested the formation of a pseudoaneurysm near the SEMS in the common hepatic duct. Based on these CT findings, we hypothesized that the cause of the spurting bleeding was pseudoaneurysm rupture. Although the typical hemostasis method is TAE, there was excessive blood loss, and the patient could have died before TAE. We performed endoscopic hemostasis using a covered SEMS placement. We inserted a guidewire into the right anterior bile duct and placed a fully covered SEMS (BONASTENT; Medico's Hirata Inc, Osaka, Japan) 10 mm in diameter and 8 cm in length (Fig. 5). The stent was placed so that the upper edge aligned with the upper part of the common hepatic duct, and the lower edge was placed across the papilla, in order to avoid obstructing the right and left hepatic ducts. The active bleeding from the papilla stopped immediately (Fig. 6). Contrast-enhanced CT showed no extravasation. Subsequent TAE was recommended because of the possibility of recurrent bleeding. However, TAE of the right hepatic artery was associated with the risk of uncontrollable cholangitis; the patient was already older, and the tumor was severely advanced. Therefore, TAE was refused, and palliative care was continued. After the endoscopic procedure, a transfusion of 2 units of red blood cells and a 1-week course of antibiotics were administered. The patient was discharged from our hospital 13 days after the endoscopic procedure. Up to approximately 1 month before death due to tumor progression, there was no recurrence of bleeding or cholangitis.

A previous report showed that the right hepatic artery was the most common site of pseudoaneurysms (47%). In this case also, we identified a pseudoaneurysm in the right hepatic artery on the CT images. Therefore, we successfully performed hemostasis using a covered SEMS. In 2022, Ishii et al⁵ first reported endoscopic hemostasis with a covered SEMS after the placement of 2 SEMSs using the side-by-side method.

In conclusion, covered SEMS placement is an effective hemostasis method for hemorrhages caused by pseudoaneurysms after multi-SEMS placement.

Abbreviations: SEMS, self-expandable metal stent; TAE, transcatheter arterial embolization.

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<https://doi.org/10.1016/j.vgie.2024.10.005>

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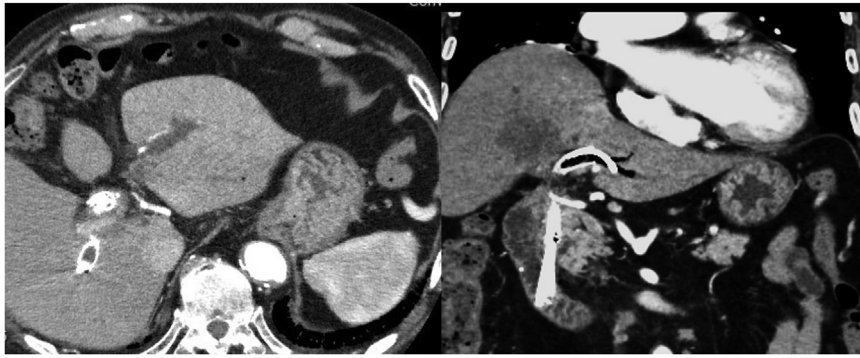


Figure 1. CT showed dilated intrahepatic bile ducts and an enlarged tumor involving the hilar region.

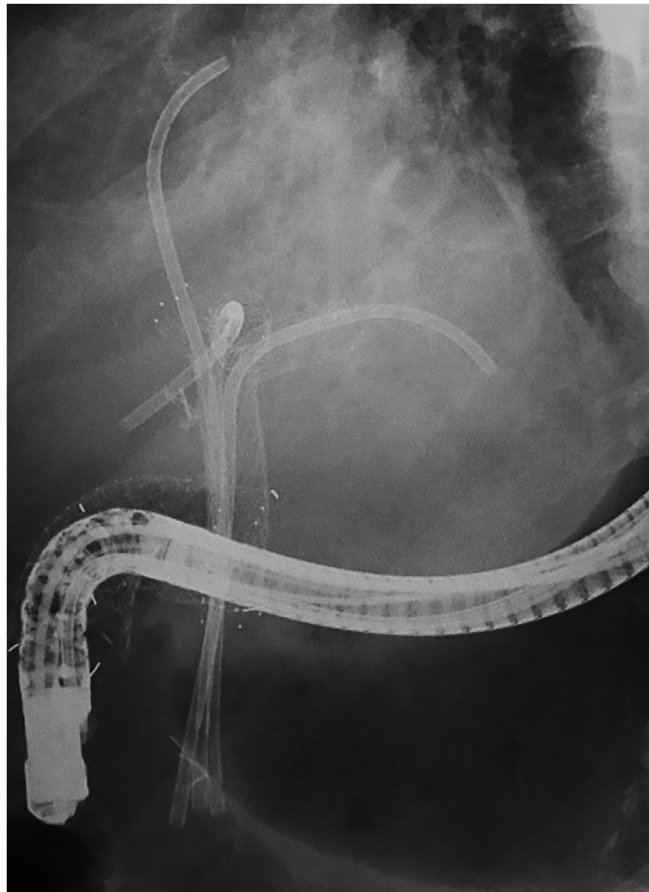


Figure 2. Radiographic image of endoscope insertion into the duodenum through the duodenal stent.

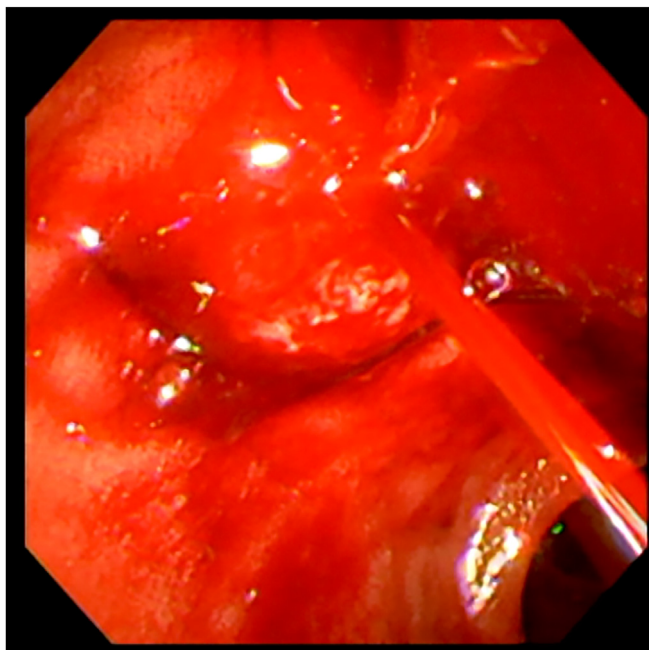


Figure 3. Continuous spurting bleeding from the duodenal papilla after the removal of the 3 plastic stents.

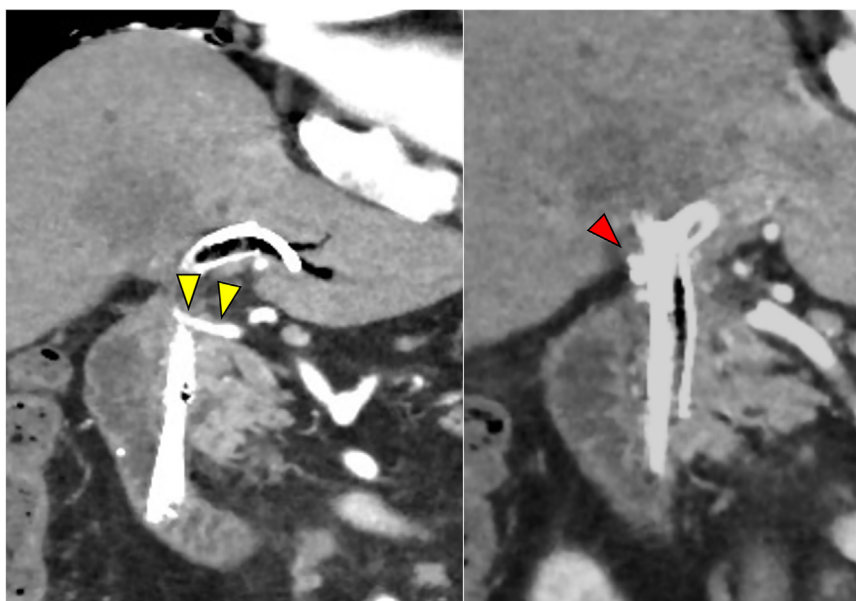


Figure 4. A pseudoaneurysm (*red arrowhead*) on the right hepatic artery (*yellow arrowheads*) near the self-expandable metal stents in the common hepatic duct.

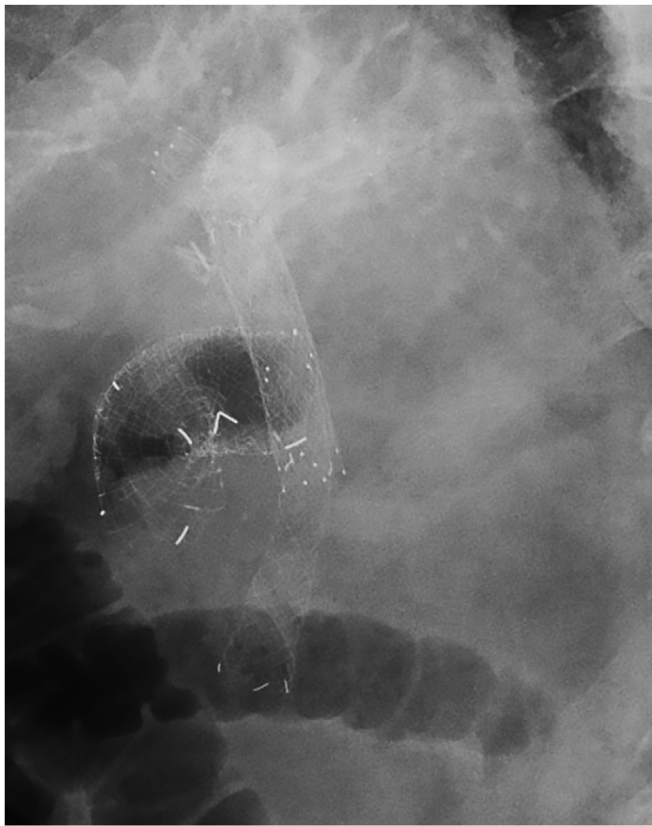


Figure 5. A covered self-expandable metal stent across the papilla from the right hepatic duct to control the spurting bleeding.

PATIENT CONSENT

The patient in this article has given written informed consent to publication of their case details.

DISCLOSURES

All authors disclose no financial relationships.

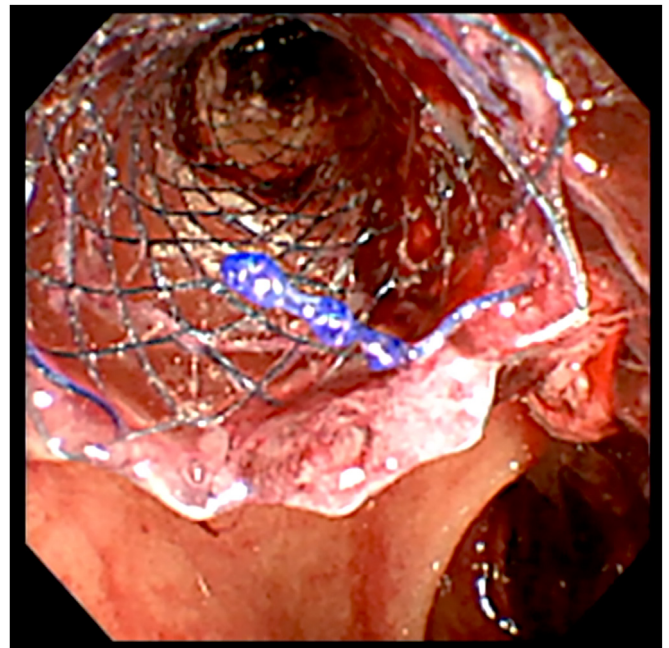


Figure 6. No bleeding from the duodenal papilla immediately after stent placement.

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