

Successful use of Hemospray to control refractory duodenal diverticular bleeding

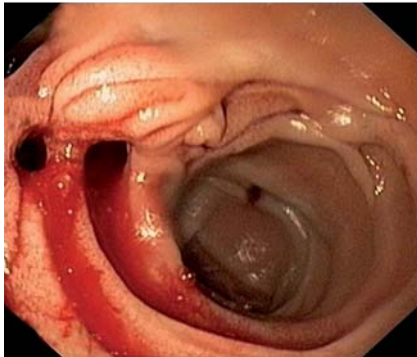


Fig. 1 Bleeding diverticulum in the descending duodenum of a 78-year-old woman on rivaroxaban medication because of atrial fibrillation.

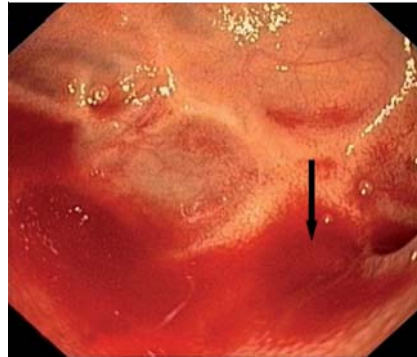


Fig. 2 Bleeding site (arrow) inside the diverticulum near the papilla.

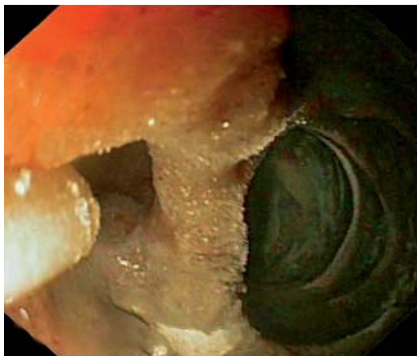


Fig. 3 Application of Hemospray with a 10-Fr catheter (left) on the third day after admission.

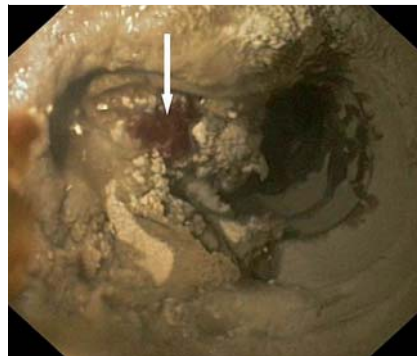


Fig. 4 Ongoing bleeding (arrow) after the first Hemospray application. Bleeding subsided after further Hemospray administration.

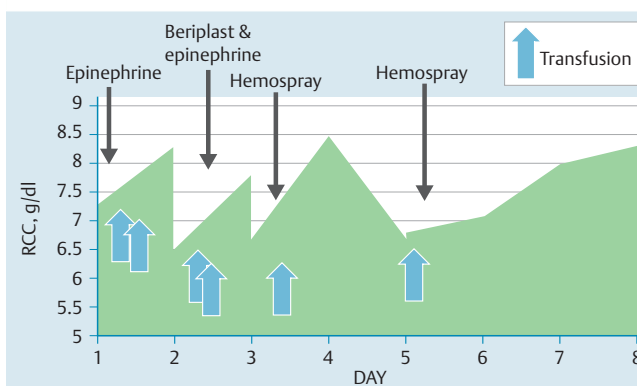


Fig. 5 Overview of hemoglobin level, endoscopic interventions, and transfusions. RCC, red cell count.

A 78-year-old woman, on rivaroxaban medication because of atrial fibrillation, was referred to our department with upper gastrointestinal bleeding. Emergency esophagogastroduodenoscopy (EGD) revealed multiple duodenal diverticula with oozing bleeding from inside a large diverticulum near the papilla (● Fig. 1 and ● Fig. 2). Because of the location, clips

were not applicable, hence injection of epinephrine and later injection of fibrin glue were administered. In spite of these interventions, signs of bleeding recurred. On the third day after admission, 10 g of Hemospray was applied into the descending duodenum using a 10-Fr catheter (● Fig. 3 and ● Fig. 4). After several bursts of Hemospray, bleeding stopped. During

control examination 1 day later, Hemospray had disappeared from the gastrointestinal tract, but bleeding from the duodenal diverticulum had recurred. The remaining Hemospray was applied into the diverticulum and bleeding subsided. An overview of hemoglobin level, endoscopic interventions, and transfusions is shown in ● Fig. 5. Follow-up EGD 2 days later was unremarkable and the patient resumed an oral diet. After discharge, no further bleeding occurred during a 30-day follow-up.

Hemospray is an inorganic powder that has been shown to be effective in patients with upper and lower gastrointestinal bleeding [1–3]. It is theoretically ideal to control diverticular bleeding because complete coverage of the mucosal surface in the diverticulum can be achieved. In the literature, two cases of Hemospray as primary therapy in duodenal diverticular bleeding have been reported [2,3]. In both cases, Hemospray was unsuccessful and patients underwent rescue angiography. Effective application of Hemospray into a diverticulum can be difficult, especially if the diverticular orifice is small. In our case, full bleeding control was only achieved after the second administration. Clinical experience with repeated Hemospray applications is limited, however, in our patient this proved to be an effective treatment. Anticoagulant therapy could have contributed to delayed bleeding control although rivaroxaban had been stopped earlier.

In conclusion, Hemospray is a possible tool to achieve hemostasis in refractory diverticular bleeding and might be an option to avoid surgery or angiographic interventions.

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Competing interests: None

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Bibliography

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