

## Endoscopic treatment of upper-GI ulcer bleeding with hemostatic powder spray

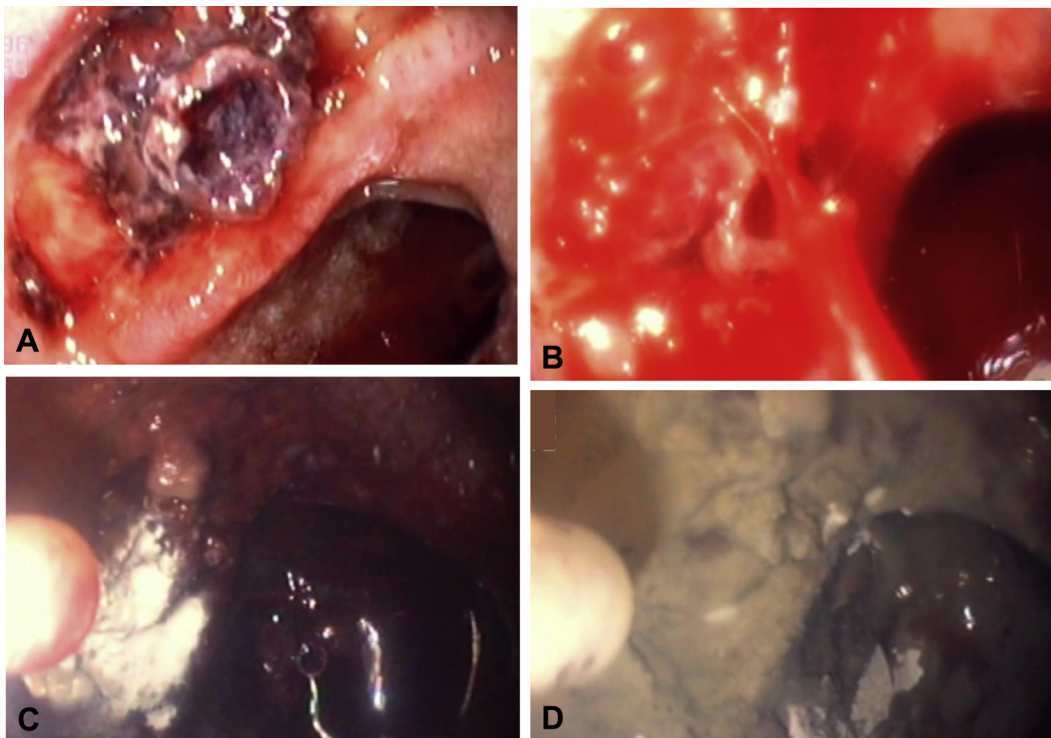


Christiano Makoto Sakai, MD, Ralph Braga Duarte, MD, Felipe Iankelevich Baracat, MD, Renato Baracat, MD, Eduardo Guimarães Hourneaux de Moura, MD

Peptic ulcer is the most common cause of upper-GI bleeding (UGIB). Despite the advances in the management of this condition, mortality remains significant, at 10%.<sup>1</sup> Hemospray (TC-325, Cook Medical, Bloomington, Ind) is a new hemostatic modality that has shown interesting results in a variety of causes, either as monotherapy or as rescue therapy,<sup>2</sup> apparently with the advantage of its easy applicability, especially in difficult situations. Hemospray consists of a mineral powder that absorbs water when applied into the actively bleeding lesion, forming a mechanical barrier over the bleeding site.<sup>3</sup>

A 58-year-old man experienced major in-hospital UGIB. The patient did not describe previous diseases and presented to the emergency department with progressive dyspnea. A CT scan showed small nodules uniformly distributed throughout both lungs, suggesting miliary tuberculosis asso-

ciated with pneumonia. Broad-spectrum antibiotics were initiated. Four days later, the patient was seen with massive hemochezia and hemodynamic instability requiring vasoactive drugs and ventilatory support. Pharmacologic treatment included a proton pump inhibitor, 80 mg/d. Endoscopic evaluation was done promptly and showed a large bulbar ulcer with an adherent clot without active bleeding (Fig. 1A). Epinephrine-hypertonic glucose solution (1:10,000) injection was performed with a 23-gauge sclerotherapy needle to prevent rebleeding. A total of 2 mL was injected per puncture. As the needle was extracted after the third puncture, spurting bleeding was seen (Fig. 1B) and was treated successfully with Hemospray (Figs. 1C and D). The powder was sprayed through a 7F catheter in short bursts (1-2 seconds). The tip of the catheter should remain at a certain distance of the bleeding site (1-2 cm).



**Figure 1.** A, Bulbar ulcer with adherent clot. B, Ulcer with active bleeding. C, Hemospray therapy. D, Final aspect of hemostatic treatment.

Written transcript of the video audio is available online at [www.VideoGIE.org](http://www.VideoGIE.org).

The therapy was performed until no further bleeding was seen. Hemodynamic stability was achieved during the following hours, and both vasoactive drugs and mechanical ventilation were withdrawn. Second-look endoscopy evidenced adequate hemostasis. No other GI bleeding was reported in the following 30 days.

Hematochezia is not the most common presentation of UGIB; however, it indicates severe bleeding and is related to worse outcomes, including mortality.<sup>4</sup> The decision to treat ulcers with adherent clot is based on the medical literature,<sup>5</sup> and this report strengthens this need because the patient would probably have experienced rebleeding and a bad outcome if the physician had used only pharmacologic treatment. Our impressions of Hemospray are very positive based on our early experiences. This video shows successful treatment of a massive bleeding ulcer ([Video 1](#), available online at [www.VideoGIE.org](http://www.VideoGIE.org)). Recently, a large, multicenter trial was published and enrolled 202 patients with UGIB who received Hemospray therapy.<sup>6</sup> These multicenter data confirmed the high rate of immediate hemostasis (96.5%), excellent feasibility, and good safety profile of Hemospray.

## DISCLOSURE

*All authors disclosed no financial relationships relevant to this publication.*

## REFERENCES

1. Hearnshaw SA, Logan RF, Lowe D, et al. Use of endoscopy for the management of acute upper gastrointestinal bleeding in the UK: results of a nationwide audit. *Gut* 2010;59:1022-9.
2. Smith LA, Stanley AJ, Bergman JJ, et al. Hemospray application in nonvariceal upper gastrointestinal bleeding: results of the Survey to Evaluate the Application of Hemospray in the Luminal Tract. *J Clin Gastroenterol* 2014;48:e89-92.
3. Holster IL, van Beusekom HM, Kuipers EJ, et al. Effects of a hemostatic powder hemospray on coagulation and clot formation. *Endoscopy* 2015;47:638-45.
4. Wilcox CM, Alexander LN, Cotsonis G. A prospective characterization of upper gastrointestinal hemorrhage presenting with hematochezia. *Am J Gastroenterol* 1997;92:231-5.
5. Bleau BL, Gostout CJ, Sherman KE, et al. Recurrent bleeding from peptic ulcer associated with adherent clot: a randomized study comparing endoscopic treatment with medical therapy. *Gastrointest Endosc* 2002;56:1-6.
6. Haddara S, Jacques J, Lecleire S, et al. A novel hemostatic powder for upper gastrointestinal bleeding: a multicenter study (the "GRAPHE" registry). *Endoscopy* 2016;48:1084-96.

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São Paulo University Medical School, São Paulo, Brazil.

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