



Endoscopic hemostatic spray for uncontrolled bleeding after complicated endoscopic mucosal resection or endoscopic submucosal dissection: a report of 2 cases

Kayla M. Hartz, DO,¹ Roland Y. Lee, MD,¹ Leonard T. Walsh, MD,¹ Matthew E. B. Dixon, MD,² Matthew T. Moyer, MD, MS³

Background and Aims: There is a significant bleeding risk after gastric endoscopic submucosal dissection (ESD) and EMR cases. This case series describes the use of an endoscopic hemostasis spray, which is not typically used to treat this type of bleeding, after multiple attempts with other modalities failed.

Methods: We present 2 patient cases of ESD and EMR used to treat a gastric adenoma (case 1) and 2 gastric hyperplastic masses (case 2) with refractory bleeding after use of multiple other treatment modalities. Both patients were not surgical candidates because of their medical comorbidities.

Results: Bleeding was eventually controlled with the use of endoscopic hemostasis spray after attempts were made using SB Knife Jr tip, Coagrasper Hemostatic Forceps, Argon Photocoagulation, and scope tamponade.

Conclusions: In very specific cases, endoscopic hemostasis spray may have some utility for refractory bleeding after dissection of gastric lesions. After using this spray, it became technically challenging to suture endoscopically because of the mud-like quality of the hemostasis material. (VideoGIE 2021;6:481-3.)

Postoperative bleeding occurs in 5.3% to 15.6% of endoscopic submucosal dissection (ESD) cases¹ and 1.4% to 20% of gastric EMR cases.² Endoscopic hemostasis was approved by the Food and Drug Administration in the United States on May 2018 for treatment of nonvariceal GI bleeding. The sprayable powder achieves rapid and reliable hemostasis and can be used as either a primary or salvage treatment.³ We present 2 cases demonstrating the successful achievement of hemostasis with endoscopic hemostasis for post-EMR and post-ESD bleeding that was refractory to conventional methods of endoscopic hemostasis.

Patient 1 was a 68-year-old high-risk surgical patient who underwent ESD-EMR of a known fungating, partially circumferential adenoma measuring 5 × 4 cm on the gastric antrum posterior wall and prepyloric region. After EUS showed the mass to be limited to a T1N0 lesion, the lesion was marked at its periphery with an SB Knife Jr (Olympus America, Center Valley, Pa, USA) and then lifted away from the muscularis propria with targeted submucosal injections. Using the SB Knife Jr, we opened an entry site, and using standard dissection technique, we extended the resection plane, progressively separating the tumor from the underlying muscle layers. We resected the tumor in 2 individual sections owing to the tumor's size and location (Fig. 1). Persistent bleeding, which appeared to be from neoplastic-driven angiogenesis pathology, occurred

throughout the procedure. Multiple attempts with the SB Knife Jr tip, Coagrasper Hemostatic Forceps (Olympus America), argon plasma coagulation, and endoscope tamponade were unsuccessful in controlling the bleeding. To note, argon plasma coagulation was used because we have had much success in controlling endoscopic bleeds at our institution using this modality, and it has been promoted as a primary endoscopic hemostasis tool in certain guidelines.^{4,5}

Endoscopic hemostasis was then used and provided immediate control of bleeding (Fig. 2). Subsequently, a dual-channel flexible endoscope fitted with an Overstitch suturing device (Apollo Endosurgery, Austin, Tex, USA) was advanced into position, and the resection site was progressively closed with sutures under direct visualization. However, the resection site was only 80% closed because of the adherent and mud-like quality of the hemostasis spray, which made effective suturing difficult, and the case was concluded. The patient was admitted for observation for less than 24 hours, without evidence of serious adverse events⁶ or blood products required. Pathology of the gastric specimens measuring 4.1 × 2.7 cm showed a T1b, invasive, moderately differentiated adenocarcinoma, which involved the submucosa and arose from a tubular adenoma. Eventually, the patient underwent a distal gastrectomy and regional lymphadenectomy with Roux-

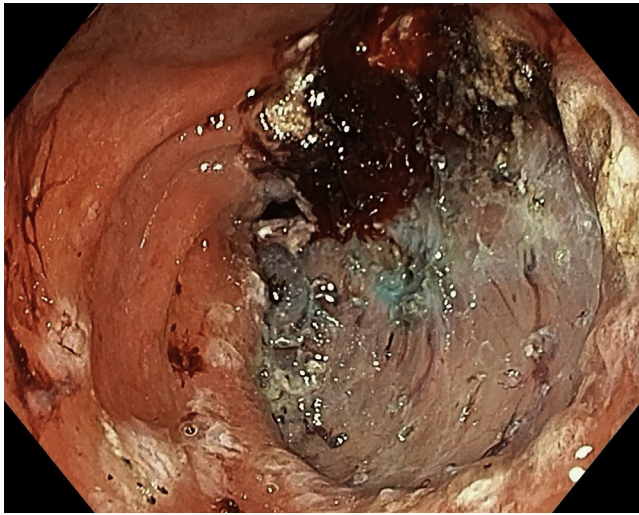


Figure 1. Resection base with persistent bleeding, which could not be controlled with standard techniques.

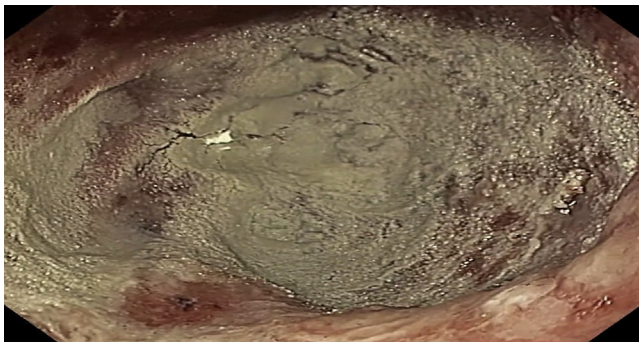


Figure 2. Endoscopic hemostasis spray was applied, with successful control of bleeding.

en-Y anastomosis for T1N0 gastric adenocarcinoma (Video 1, available online at www.VideoGIE.org).

Patient 2 was a 71-year-old man with compensated cirrhosis secondary to nonalcoholic fatty liver disease who underwent EMR of 2 biopsy-proven gastric hyperplastic masses. One was 4 × 5 cm in the gastric antrum and pyloric area and another was 1.5 cm in the duodenal bulb. These tumors were thought to be the source of ongoing blood loss and a low-grade gastric outlet obstruction, and resection of the masses was chosen. The masses were lifted away from the muscularis propria with targeted submucosal injections using Carr Locke injection needles (US Endoscopy, Mentor, Ohio, USA).

Using 3 Duette cap-band EMR kits (Cook Medical, Bloomington, Ind, USA) and a Captivator-I 13-mm hexagonal electrocautery snare (Boston Scientific, Marlborough, Mass, USA), we resected both masses down to the submucosa and muscularis propria. Significant bleeding occurred throughout the procedure, likely because of a combination of portal hypertension, thrombocytopenia, and aspirin use. The bleeding was refractory to multiple methods of

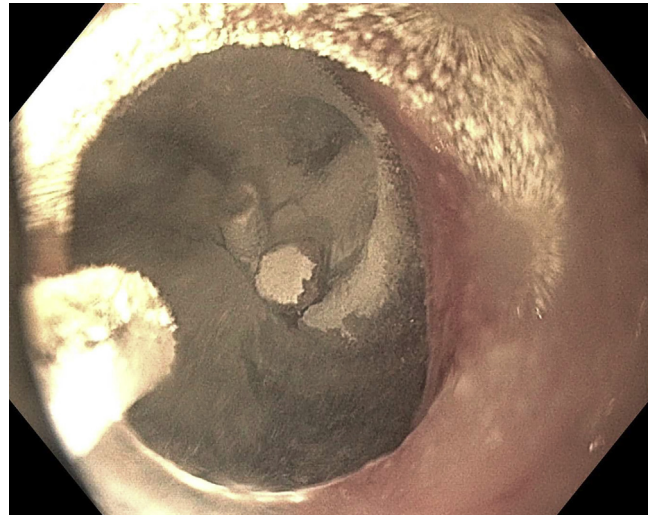


Figure 3. Endoscopic hemostasis spray was used after standard techniques had failed and achieved complete control of bleeding.

hemostasis, including endoscope tamponade, epinephrine injection, Coagrasper Hemostatic Forceps, focal snare tip electrocautery, and hemostatic clips. Endoscopic hemostasis was then used and provided immediate hemostasis, which concluded the case (Fig. 3). Pathology of the gastric and duodenal tumors showed an inflamed and eroded hyperplastic polyp with reactive epithelial changes. Follow-up EGD showed recurrence, which is common in large hyperplastic gastric tumors.⁷

Both patients were observed in the postoperative unit and were discharged the following day without evidence of further bleeding. Our cases demonstrate the potential role of endoscopic hemostasis spray as a salvage agent, providing rapid and effective hemostasis in the setting of post-gastric mass resection bleeding after ESD and EMR. Of note, hemostasis spray can make subsequent resection site suturing technically challenging by limiting visualization and is likely only appropriate when refractory bleeding has defied more conventional hemostatic tools and techniques.

DISCLOSURE

Dr Moyer is a consultant for Boston Scientific. All other authors disclosed no financial relationships.

Abbreviation: ESD, endoscopic submucosal dissection.

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Department of Internal Medicine, Penn State Health Milton S. Hershey Medical Center, Hershey, Pennsylvania (1), Department of Surgery, Penn State Health Milton S. Hershey Medical Center, Hershey, Pennsylvania (2), Division of Gastroenterology and Hepatology, Penn State Health Milton S. Hershey Medical Center, Hershey, Pennsylvania (3).

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If you would like to chat with an author of this article, you may contact Dr Hartz at khartz@pennstatehealth.psu.edu.

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