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DEN Video Article

Efficacy of PuraStat hemostatic gel for pulsating arterial bleeding during colorectal endoscopic submucosal dissection

Taishi Okumura, Kenichiro Imai and Kinichi Hotta

Division of Endoscopy, Shizuoka Cancer Center, Shizuoka, Japan

BRIEF EXPLANATION

ELECTROSURGICAL COAGULATION IS widely used for hemostasis during colorectal endoscopic submucosal dissection (ESD). However, its excessive application can cause thermal injury to deeper layers, leading to peritonitis or post-ESD coagulation syndrome.[1] Coagulation close to muscle layer using hemostatic forceps or the tip of an ESD knife can increasingly cause deep thermal injury or perforation.[2] A novel endoscopic hemostatic agent (PuraStat; 3-D Matrix Ltd, Tokyo, Japan) is currently available for hemostasis during endoscopic

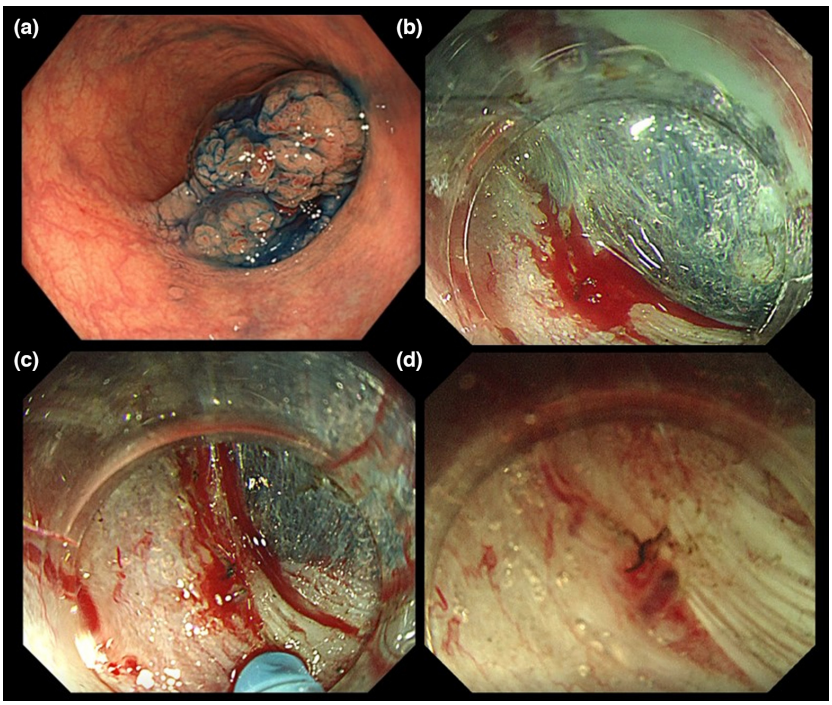

Figure 1 (a) Chromoendoscopy with indigo carmine showed a 35 mm sessile villous polyp in the sigmoid colon. (b) Pulsating arterial bleeding from a perforating muscle branch vessel at the mucosal defect during submucosal dissection. (c) PuraStat (3-D Matrix Ltd, Tokyo, Japan), a novel endoscopic hemostatic agent, was applied to the bleeding site directly using a dedicated catheter. (d) Successful hemostasis for arterial bleeding was achieved by self-assembling peptide spraying only.

Corresponding: Kenichiro Imai, Division of Endoscopy, Shizuoka Cancer Center, 1007 Shimonagakubo, Nagaizumi, Shizuoka 411-8777, Japan. Email: k.imai1977@gmail.com
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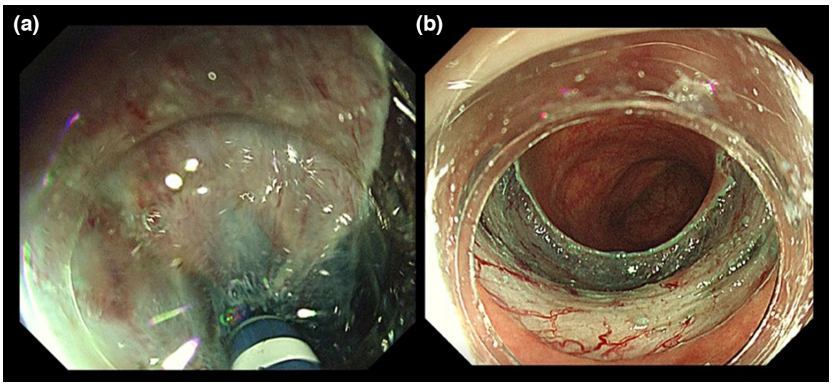

Figure 2 (a) Submucosal dissection could be restarted immediately after hemostasis completion because clear transparency of the peptide solution ensured a good field of view during endoscopic submucosal dissection. (b) En bloc resection without muscle damage was achieved.

treatments. It consists of a synthetic peptide with a novel self-assembling gelation function following exposure to the ion or acid.[3] The self-assembling gel can be a hemostat by sealing bleeding points after spraying into the digestive tract. It has reduced the number of hemostatic coagulation procedures during ESD; however, the agent has not been used for arterial bleeding.[4,5]

A colonoscopy in a 78-year-old man consuming aspirin and edoxaban revealed a 35 mm sessile villous polyp (Fig. 1a). The diagnosis was adenoma; therefore, ESD was planned for complete removal after discontinuing the two drugs. During ESD, arterial bleeding occurred from a perforating branch in the muscle tissue at the mucosal defect (Fig. 1b, Video S1). To avoid thermal injury to the muscular tissue, PuraStat was sprayed on the bleeding site (Fig. 1c). Hemostasis was completed without using electrosurgical coagulation (Fig. 1d). Furthermore, clear transparency of the solution ensured a good field of view, avoiding the interruption of ESD (Fig. 2a). En bloc resection was achieved without muscle layer damage or perforation (Fig. 2b). Postoperatively, abdominal pain, body temperature rise, or bleeding were not observed, unaffected by resumption of two antithrombotic drugs. Pathology was traditional serrated adenoma with negative margins. The findings from this case suggest that this novel hemostatic agent can be used for nonspurting arterial bleeding and may decrease thermal injury, avoiding electrosurgical coagulation to the muscular tissue.

Authors declare no conflict of interest for this article.

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SUPPORTING INFORMATION

ADDITIONAL SUPPORTING INFORMATION may be found in the online version of this article at the publisher's web site.

Video S1 Effective hemostasis without electrosurgical coagulation by a novel self-assembling peptide solution for pulsating arterial bleeding from the muscle layer during colorectal endoscopic submucosal dissection.

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