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Rapid hemostasis using a self-assembling peptide matrix for midprocedural bleeding in endoscopic sphincterotomy

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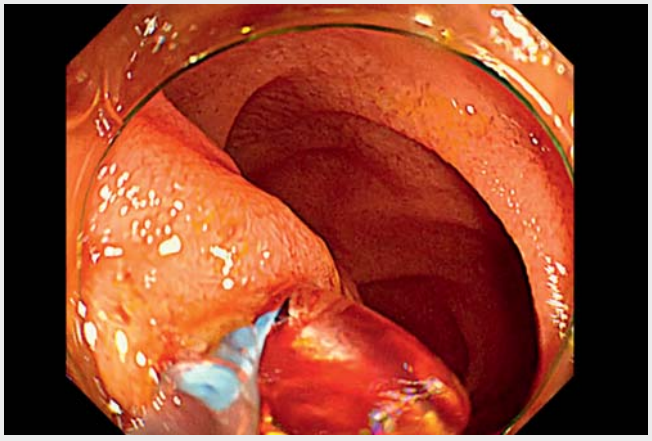
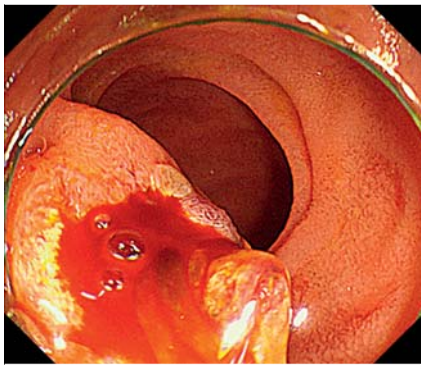


Video 1 Effective application of a self-assembling peptide matrix (PuraStat) for rapid hemostasis of post-sphincterotomy bleeding during endoscopic retrograde cholangiopancreatography-related procedures.

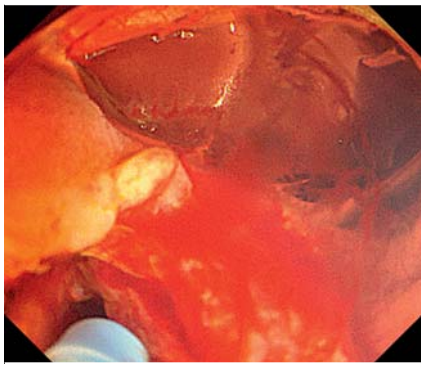
Post-sphincterotomy bleeding during or after endoscopic retrograde cholangiopancreatography (ERCP)-related procedures is often problematic. Although various hemostatic techniques, such as balloon compression, clipping, cautery, and covered metallic stents, are usually carried out, they are time-consuming, costly, risky, and difficult to perform [1]. Recently, the efficacy of a novel self-assembling peptide matrix (PuraStat; 3-D Matrix Europe SAS, France) has been reported for hemostasis in gastrointestinal endoscopic procedures [2–5]. We describe two cases in which PuraStat was effective for rapid hemostasis of post-sphincterotomy bleeding during ERCP (▶ **Video 1**).

Case 1: A 65-year-old man who had previously had a Billroth II gastrectomy underwent ERCP for acute cholangitis due to a stone in the common bile duct. After successful biliary cannulation, needle-knife sphincterotomy was performed to remove the stone; however, bleeding occurred in the middle of the sphincterotomy, making it difficult to continue the procedure (▶ **Fig. 1**). PuraStat was easily applied and hemostasis rapidly achieved (▶ **Fig. 2**). We resumed the sphincterotomy and completed the procedure (▶ **Fig. 3**).

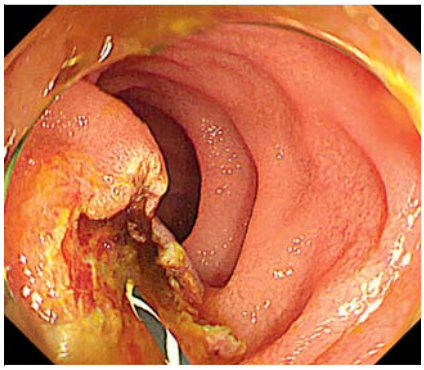
Case 2: A 48-year-old woman with obstructive jaundice caused by pancreatic head cancer underwent ERCP for biliary decompression. We planned to place drainage stents in the pancreatic duct and gallbladder before deploying covered self-expandable metal stents (CSEMS), in order to prevent cholecystitis and pancreatitis after stent placement. We successfully performed pancreatic duct stenting and endoscopic sphincterotomy, but after the sphincterotomy, bleeding occurred (▶ **Fig. 4**). Because pulsatile bleeding persisted and there was a risk of losing the visual field before gallbladder stenting and CSEMS placement, to reduce the momentum of the bleeding we applied PuraStat using red dichromatic imaging (Olympus, Japan) (▶ **Fig. 5**). The bleeding was controlled by the PuraStat, and the procedure was completed with a secure visual field.



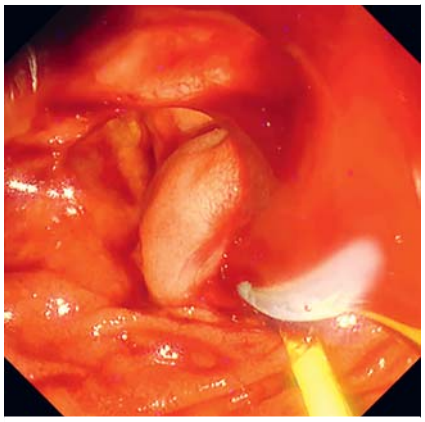
▶ **Fig. 1** Case 1. Bleeding occurred in the middle of sphincterotomy, which made it difficult to continue the procedure.



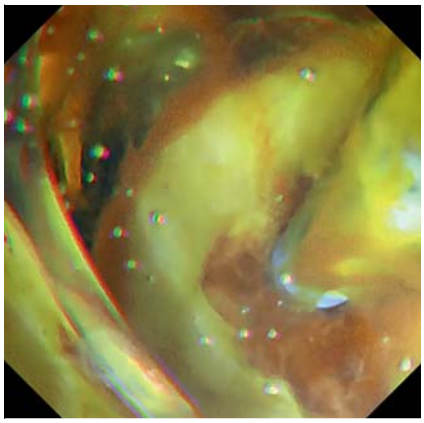
▶ **Fig. 2** Case 1. Novel self-assembling peptide matrix (PuraStat) was applied and hemostasis was rapidly obtained.



▶ **Fig. 3** Case 1. Prompt hemostasis allowed the procedure to be resumed after only a brief interruption.



▶ **Fig. 4** Case 2. Pulsatile bleeding persisted after endoscopic sphincterotomy.



▶ **Fig. 5** Case 2. PuraStat was applied under red dichromatic imaging using a dedicated catheter for bleeding after endoscopic sphincterotomy.

Complete hemostasis of the post-sphincterotomy bleeding was seen after CSEMS deployment.

Once post-sphincterotomy bleeding occurs, it is difficult to continue the procedure with a clear visual field. PuraStat can provide rapid and easy hemostasis of midprocedural bleeding, allowing the procedure to continue.

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Competing interests

A. Katanuma has received lecture fees from Olympus Co., Tokyo, Japan. The other authors have no conflicts of interest to declare.

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