

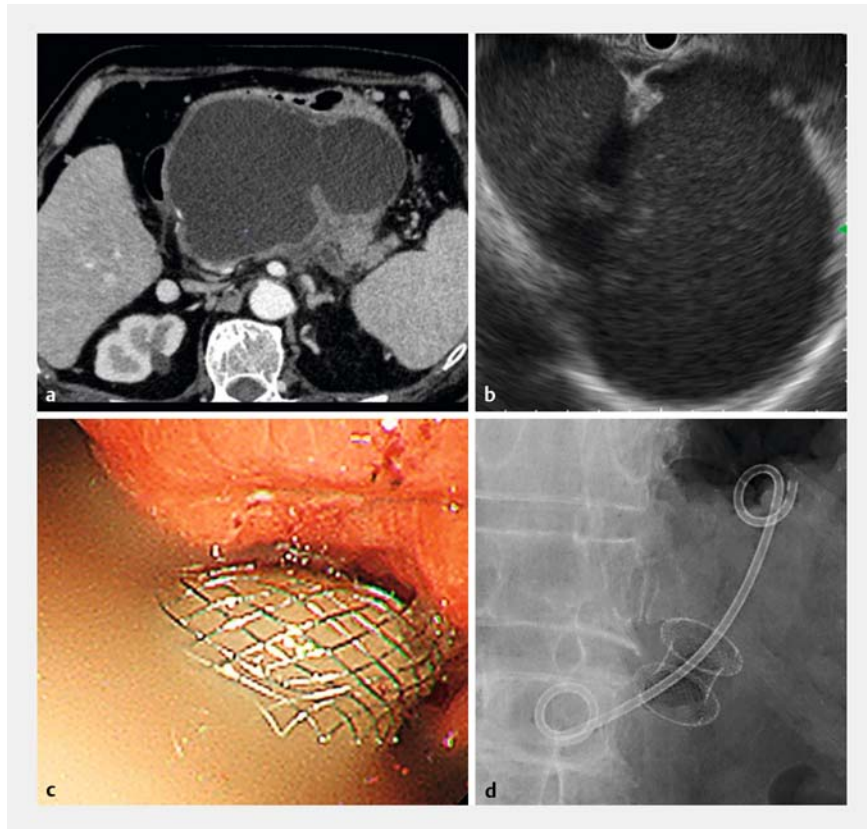
## Novel hemostatic option using self-assembling peptide gel for endoscopic necrosectomy-related bleeding



Bleeding is the most common complication during direct endoscopic necrosectomy (DEN) for walled-off pancreatic necrosis (WON) [1]. However, there is no consensus on the optimal hemostatic method for DEN-related bleeding. Here, we demonstrate endoscopic hemostasis using PuraStat (3D-Matrix Europe SAS, France), a novel self-assembling peptide hemostatic gel for DEN-related bleeding (► **Video 1**).

A 74-year-old man was referred to our hospital due to an infected WON. Computed tomography revealed a 140-mm diameter WON on the dorsal side of the stomach, and endoscopic ultrasound-guided transgastric drainage was performed with a lumen-apposing metal stent (LAMS) (Hot-AXIOS; Boston Scientific, Marlborough, Massachusetts, USA). One week after the procedure, the abscess persisted; therefore, a plastic stent was placed via the LAMS (► **Fig. 1**). Since the patient remained febrile with necrotic debris inside the WON, DEN was performed. An endoscope was inserted into the WON via the LAMS, and necrotic debris was removed using forceps. During this procedure, bleeding from injured granulation tissue was observed. Necrotic debris interfered with the endoscopic view, making the source of bleeding undetectable. PuraStat was then applied to the WON, and the bleeding flow and point were identified under the clear-formed gel (► **Fig. 2**). A catheter was pressed against the bleeding point to apply additional PuraStat, and successful hemostasis was achieved (► **Fig. 3**). No intraprocedural or postprocedural re-bleeding was observed.

Several studies have reported the suitability of PuraStat for gastrointestinal bleeds [2–5]. However, to our knowledge, this is the first report of successful hemostasis using PuraStat in DEN-related



► **Fig. 1** Endoscopic ultrasound-guided drainage using a lumen-apposing metal stent for walled-off pancreatic necrosis. **a** A computed tomography image showing walled-off pancreatic necrosis (WON) on the dorsal side of the stomach. **b** An endoscopic ultrasound image of the WON. **c** An endoscopic image after lumen-apposing metal stent (LAMS) placement. **d** A plastic stent (double-pigtail type) was placed via the LAMS 1 week after the procedure.

bleeding. Additionally, PuraStat facilitated detection of the bleeding point. Conventional endoscopic hemostatic methods such as coagulation, clipping, and epinephrine injection are often challenging to perform for DEN-related bleeding due to poor visibility inside the WON and fragile granulation tissue. Therefore, PuraStat might be a safer and simpler option for initial hemostasis in DEN-related bleeding.

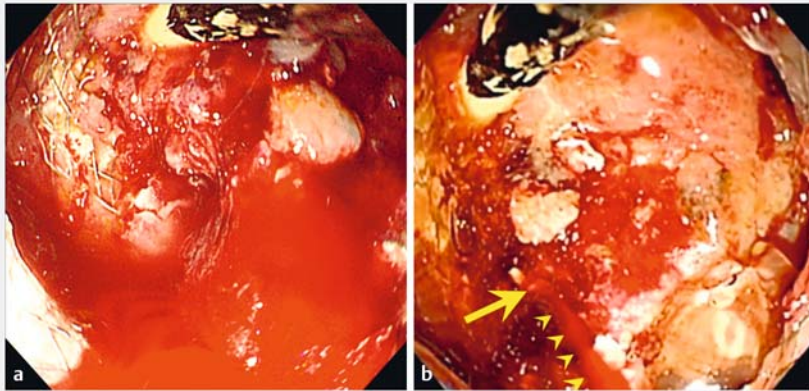
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### Competing interests

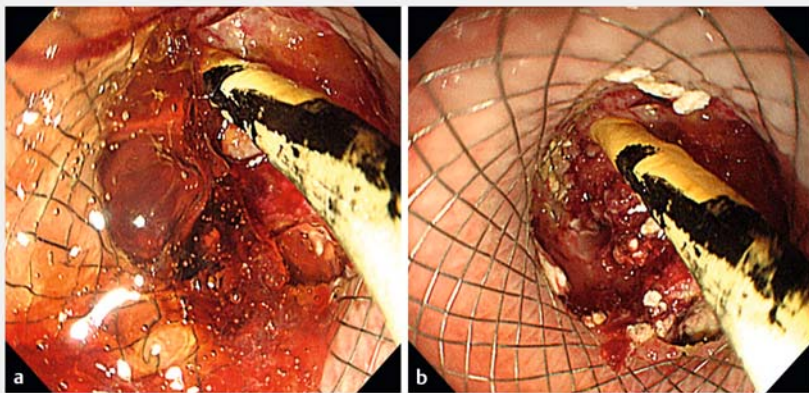
The authors declare that they have no conflict of interest.

### The authors

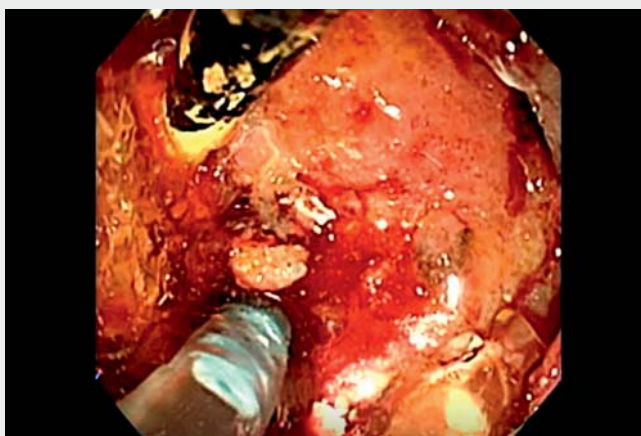
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► **Fig. 2** Direct endoscopic necrosectomy-related bleeding. **a** Bleeding was observed during direct endoscopic necrosectomy. **b** PuraStat was applied to the WON, resulting in the bleeding point (arrow) and flow (arrowheads) being detectable under the clear-formed gel.



► **Fig. 3** Endoscopic images of hemostasis using the novel self-assembling peptide gel. After the application of additional PuraStat to the bleeding point (**a**), successful hemostasis was achieved (**b**). A total of 2.5 mL of PuraStat was used.



► **Video 1** This video shows endoscopic hemostasis with a novel self-assembling peptide gel for endoscopic necrosectomy-related bleeding.

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## Bibliography

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