

Percutaneous direct-endoscopic necrosectomy for walled-off pancreatic necrosis



Fig. 1 A contrast-enhanced computed tomography (CT) scan showed extensive walled-off pancreatic necrosis (WOPN): **a** upper abdomen, **b** pelvic region.

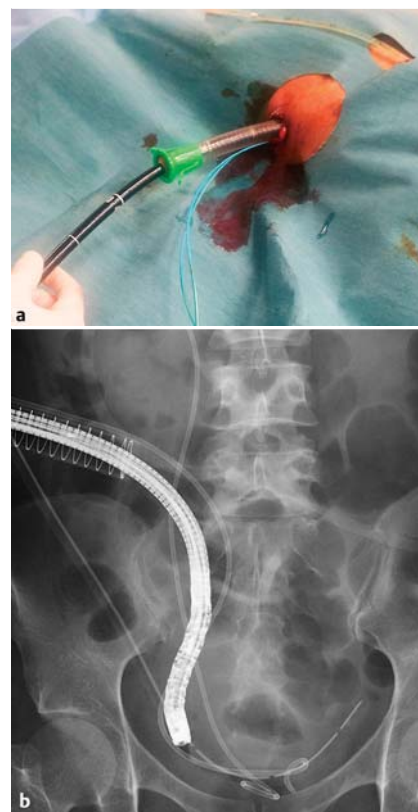


Fig. 2 Direct necrosectomy: **a** the flexible overtube was placed from the right flank region, **b** the gastroscope reached the pelvic floor.



Fig. 3 Three drainage catheters and two irrigation catheters inserted from the single fistula.

We report a case where percutaneous direct-endoscopic necrosectomy was successfully used to treat walled-off pancreatic necrosis (WOPN) that could not be accessed via the transluminal approach.

A 36-year-old woman with severe alcoholic pancreatitis was referred to our institute. The computed tomography (CT) scan showed extensive WOPN (larger diameter 26 cm) spreading from the level of the pancreas to the pelvic floor (• Fig. 1). *Citrobacter freundii* was detected from the aspiration fluid obtained from the WOPN. Transluminal observation of the WOPN by endoscopic ultrasonography was not possible, because of the presence of an inflammatory duodenal stricture.

The patient initially underwent percutaneous drainage 17 days after the onset of pancreatitis. A stent was placed in the right urinary tract to prevent urinary duct injury during necrosectomy. In total, two percutaneous drainage catheters

were placed in the right flank region and right lower abdomen. During the second session, the percutaneous fistula in the right flank was dilated up to 18 mm with a balloon dilator (CRE™ wire-guided balloon dilator; Boston Scientific, Natick, Massachusetts, USA). Next, a flexible overtube (diameter 20 mm), whose length had been shortened by 20 cm, was placed to maintain carbon dioxide insufflation of the cavity (• Fig. 2).

Direct necrosectomy was performed using a gastroscope through the overtube. All the procedures were performed under intravenous anesthesia. The maximum duration of necrosectomy was 2 hours. Abundant solid and purulent necrotic material was removed using a snare, a basket catheter, and alligator forceps. At the end of each necrosectomy session, three drainage catheters (diameter 24 Fr) were placed to maintain the fistula, and two irrigation catheters were also placed

(• Fig. 3). After 11 necrosectomy sessions, the patient was discharged without complications.

Endoscopic necrosectomy via the percutaneous approach can be used as a treatment option if the WOPN is located adjacent to the abdominal wall.

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