

Chapter 50

Case on Recurrence of Infection After Video-Assisted Retroperitoneal Debridement

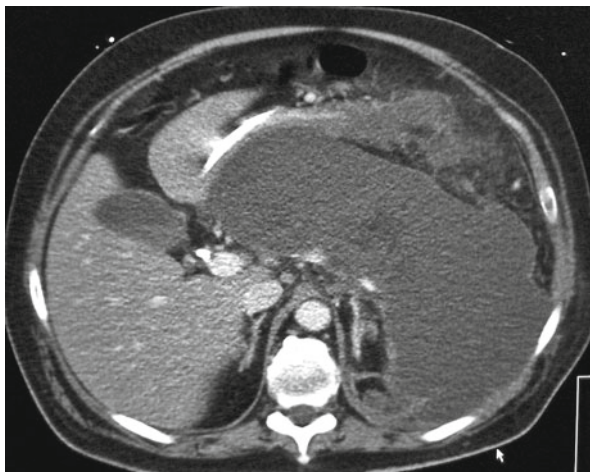
Marc Besselink

Keywords Retroperitoneal debridement • Infection • Dutch PANTER trial • Step-up approach • Drainage • Necrosectomy

After the publication of the Dutch PANTER trial [1], the “step-up approach” is now considered the reference standard for treating infected necrotizing pancreatitis. When infection is diagnosed or suspected, antibiotic treatment is started with the aim to postpone intervention up to 4 weeks, as most collections have become “walled-off” by that time. The first step is percutaneous catheter drainage, preferably retroperitoneal. In the PANTER trial, 35 % of patients could be treated with only percutaneous drainage. Additionally, a recent systematic review suggested that half of all patients with infected necrotizing pancreatitis can be treated with percutaneous drainage only [2]. In patients in whom percutaneous drainage fails, either because they do not improve or because their condition deteriorates after initial improvement, the next step is drain-guided video-assisted retroperitoneal debridement (VARD). In this technique, a 5 cm retroperitoneal incision is made and the drain is followed into the collection with infected necrosis and pus [3]. The debridement is performed under videoscopic assistance. It is not the goal to remove all necrosis; some necrosis may be left for the patient to deal with. In this way the risk of bleeding is minimized. We describe a case in which the step-up approach was used.

M. Besselink, M.D., Ph.D.
Department of Surgery, Academic Medical Center, Amsterdam, The Netherlands
e-mail: m.besselink@amc.uva.nl

Fig. 50.1 CECT 4 weeks after onset of disease, demonstrating a large peri-pancreatic collection with necrosis and fluid



Patient

Diagnosis and Indication for Surgery

A 50-year-old male with alcoholic pancreatitis was treated conservatively on the surgical ward with enteral nutrition. After 4 weeks, his clinical condition deteriorated with clinical and laboratory signs of infection. A contrast-enhanced computed tomography (CECT) revealed a large peri-pancreatic collection with necrosis and fluid (Fig. 50.1).

Because of the clinical suspicion of infected necrotizing pancreatitis and the fact that the majority of the collection had become “walled off,” percutaneous retroperitoneal catheter drainage was performed. Immediately after drainage, some 500 ml of pus and small necrotic particles drained and in a few days the clinical condition of the patient clearly improved. One week after drainage a repeat CECT was performed according to protocol of a CECT (Fig. 50.2).

One week after the drainage procedure, the clinical condition of the patient deteriorated again with new clinical and laboratory signs of acute infection. A repeat CECT was performed and is shown in Fig. 50.3.

It was decided to perform a VARD procedure as initial percutaneous drainage had clinically failed and the remaining collection seemed to contain almost no drainable fluid. Figure 50.4 shows the removal of the first necrosis encountered during the VARD procedure.

Again, the patient’s condition improved. One week after the VARD procedure, the patient again demonstrated clinical signs of infection. A new CECT was performed (Fig. 50.5).

As there was necrosis remaining in the collection and the patient experienced symptoms of infection it was decided to perform a second VARD procedure. During this procedure, several large pieces of infected necrosis were removed under video-scopic assistance. Figure 50.6 shows the necrosis that was removed.

After this second VARD procedure, the patient’s condition improved rapidly and 3 weeks later he left the hospital in a good clinical condition.

Fig. 50.2 CECT 5 weeks after onset of disease and 1 week after percutaneous retroperitoneal catheter drainage of infected necrotizing pancreatitis, the collection has clearly diminished in size

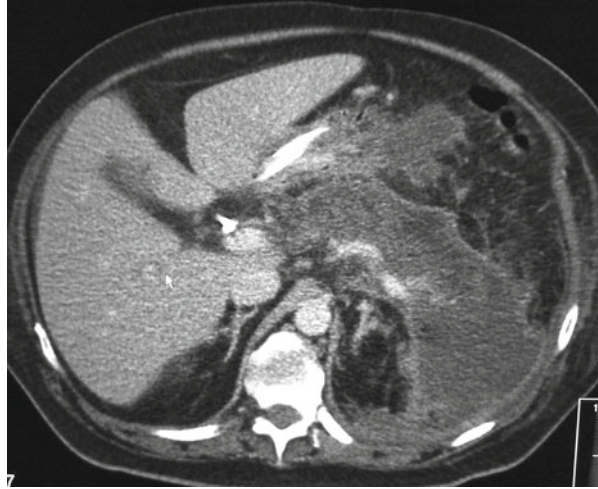


Fig. 50.3 CECT 6 weeks after onset of disease and 2 weeks after percutaneous retroperitoneal catheter drainage of infected necrotizing pancreatitis

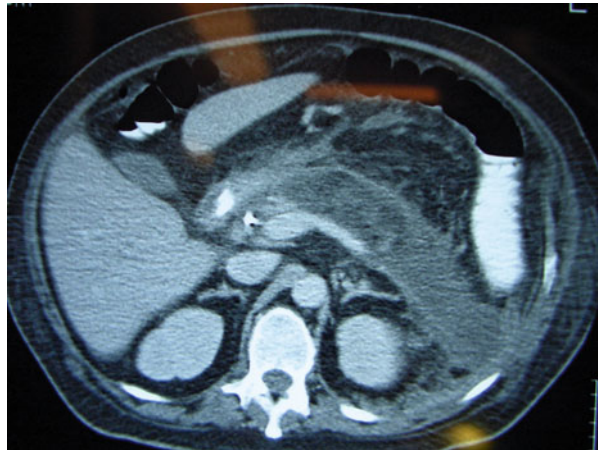


Fig. 50.4 VARD procedure: a small incision is made in the left flank next to the retroperitoneal drain. The drain is followed into the infected collection and the first necrosis encountered is removed. Later, video-assistance is used to clear the collection of necrosis and two surgical drains are placed for continuous postoperative lavage



Fig. 50.5 CECT 7 weeks after onset of disease, demonstrating the surgical drain in the collection and residual necrosis

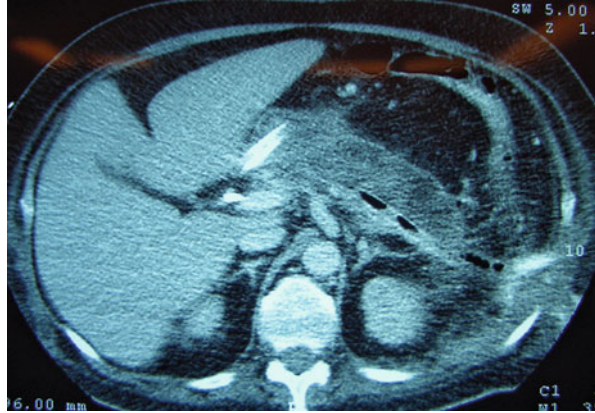


Fig. 50.6 Necrosis removed during the second VARD procedure, 7 weeks after onset of disease



Discussion

Several drainage and necrosectomy procedures may be required to remove all infected necrosis and pus. Some argue that a formal primary laparotomy, without drainage or minimally invasive necrosectomy, would have been a better option as all necrosis would have been removed in one procedure. This may seem as a valuable argument, but, according to the PANTER trial, such a strategy is not in the best interest of the patient. The PANTER trial demonstrated that a primary laparotomy leads to more new onset organ failure after intervention than the “step-up approach” [1]. The reason for this may be the larger “hit” to the immune system caused by laparotomy as compared to (multiple) minimally invasive procedures. Patients undergoing interventions for infected necrotizing pancreatitis are usually quite ill and have already been hospitalized for several weeks, weakening their condition. Thus, the least invasive approach is likely to be beneficial, or rather less harmful. Apparently, the fact that with these minimally invasive approaches more procedures are required is not detrimental to the patient’s condition.

This case also clearly describes the use of repeat CECT for optimal planning of the optimal treatment strategy. When performing CECT in necrotizing pancreatitis, one should be very aware of the fact that CECT is not capable of detecting necrosis in fluid-predominant collections. Imaging modalities that are capable of doing so are magnetic resonance imaging and ultrasound.

References

1. Van Santvoort HC, Besselink MG, Bakker OJ, et al. A step-up approach or open necrosectomy for necrotizing pancreatitis. *N Engl J Med*. 2010;362:1491–502.
2. Van Baal MC, Van Santvoort HC, Bollen TL, et al. Systematic review of percutaneous catheter drainage as primary treatment for necrotizing pancreatitis. *Br J Surg*. 2011;98:18–27.
3. Van Santvoort HC, Besselink MG, Horvath KD, et al. Videoscopic assisted retroperitoneal debridement in infected necrotizing pancreatitis. *HPB (Oxford)*. 2007;9:156–9.