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Is Percutaneous Endoscopic Necrosectomy Really Safe and Effective for Symptomatic Laterally Placed Walled-off Necrosis?

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See “Pancreatic Necrosectomy through Sinus Tract Endoscopy” by Mahesh Kumar Goenka, Usha Goenka, Md. Yasin Mujoo, et al., on page 279-284.

I read with great interest the paper by Goenka et al.,¹ titled “Pancreatic Necrosectomy through Sinus Tract Endoscopy”, published in the January 2018 issue of *Clinical Endoscopy*. The authors concluded that sinus tract endoscopy is a minimally invasive endoscopic technique for the management of laterally placed walled-off necrosis (WON) complicated by infected necrotizing pancreatitis and can prevent or delay surgery with minimal adverse events.

Infected pancreatic necrosis with or without abscess is a serious complication of acute necrotizing pancreatitis, and the mortality rate under the conservative approach can be as high as 100%.² The current management guideline recommends a step-up approach³ in which endoscopic or surgical necrosectomy is needed for patients with failed conservative treatment, including the percutaneous approach. Sometimes, open surgical debridement is needed for selected patients, although this approach is associated with high rates of morbidity (34%–95%) and mortality (11%–39%), and with risks of long-term adverse events such as pancreatic endocrine and exocrine deficiency even in specialized centers.² Recently, endoscopic ultrasonog-

raphy (EUS)-guided transmural drainage of the WON with or without direct endoscopic necrosectomy (DEN) has been widely accepted as a more effective and safer standard intervention than surgical approaches among other minimally invasive procedures.⁴ Furthermore, studies have shown that the EUS-guided drainage with DEN is more effective and safer in respect to resolution and adverse events than surgical approaches.⁴⁻⁶ Although EUS-guided drainage with DEN has been shown to be safe and effective in some patients with peripancreatic fluid collection (PFC) within a matured sac, it is not suitable for PFC far from the stomach or duodenum, such as paracolic and pelvic collections on either side.⁵ In this observational, cross-sectional study, authors report their experience of treating WON, which is distant from the stomach or duodenum, by endoscopic necrosectomy through a sinus tract created percutaneously.¹ In addition, their results showed that among 10 patients, nine had complete success without significant morbidity and mortality, and one had fever and chose to undergo surgery.

Until now, four reports, including this study, have also shown that percutaneous sinus tract endoscopy provides a safe and effective alternative for patients who are not suitable for or at high risk from undergoing surgical interventions.^{1,2,5,6} Of 44 patients who underwent percutaneous endoscopic necrosectomy in four studies, 27 (61.4%) had clinical success, defined as resolution of fluid collection and control of infection or sepsis without the need for surgical necrosectomy. The overall mortality rate related to percutaneous endoscopic necrosectomy is 9.1% (4/44). In fact, these studies have reported promising results of percutaneous endoscopic necrosectomy. However, these

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included only a few cases and may have the possibility of unintentional selection bias, in which cases less severe than those treated with surgical necrosectomy or that were suitable for minimally invasive methods were selected. In a well-designed controlled study (PANTER trial),⁷ the surgical step-up approach (combination of percutaneous approach with a subsequent minimal invasive retroperitoneal necrosectomy, if necessary) reduced the combined mortality and morbidity rate from 69% to 40%. In addition, this study demonstrated that 35% of patients with infected necrotizing pancreatitis fully recovered with only percutaneous drainage, without the need for surgical necrosectomy. Thus, we cannot conclude that percutaneous endoscopic necrosectomy is superior to surgical necrosectomy in all patients with infected necrotizing pancreatitis, although the endoscopic approach has theoretical advantages.

Furthermore, application of percutaneous endoscopic necrosectomy in clinical settings requires precautions because of its association with significant adverse events. One of the major concerns involving the application of this technique is the possibility of persistent fistula in the percutaneous sinus tract. The approach also has technical limitations in some difficult locations with intervening organs between the peritoneum and target cystic lesion, although percutaneous endoscopic necrosectomy is good enough for paracolic and pelvic collections as compared with the EUS-guided approach. Thus, this technique requires careful inclusion criteria and should not be used in the acute stage, when the cystic lesion is extensive, diffuse, or poorly localized. In addition, it should be better to deflate the cavity frequently during necrosectomy to prevent overinflation especially in metabolic disorders, such as carbon dioxide retention and decrease in SpO₂.⁵ Furthermore, percutaneous endoscopic necrosectomy is an advanced interventional technique that requires not only a specialist in interventional endoscopy but also a multidisciplinary approach that involves skillful interventional radiologists and pancreatic surgeons as backup to prepare for potential fatal adverse events.⁶ A potential limitation of this approach is that periprocedural adverse events such as hemorrhage, intraperitoneal leakage, or perforation may be more difficult to control than adverse events during surgical necrosectomy.⁸ Unlike surgical necrosectomy, the hemostasis for bleeding from the tract of the percutaneous approach is likely to be technically difficult. Thus, it is necessary to agonize a little beforehand over the possibility of percutaneous bleeding and to prepare appropriate endoscopic devices and tech-

niques for bleeding control. Finally, percutaneous endoscopic necrosectomy requires substantial effort and perseverance to eliminate necrotic debris step by step, especially owing to the lack of specially designed endoscopic devices and the need for multiple sessions to control the infection.

Whenever any new techniques are introduced, achieving outstanding positive results is always possible by careful selection of cases. However, we should focus on the limitations of the procedure for a more universal application to clinical fields. Nevertheless, we consider several initial trials to support the clinical impression that percutaneous necrosectomy for infected WON is a safe and effective promising approach, although greater experience is warranted through prospective randomized trials to establish its effectiveness. Formal evaluation of this technique is ongoing.

Conflicts of Interest

The author has no financial conflicts of interest.

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