



Transabdominal self-expandable metal stent placement as a rescue therapy for drainage of walled-off necrosis

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BACKGROUND

The current management for intervention in necrotizing pancreatitis consists of a step-up approach with percutaneous drainage as the first choice for infected necrotic collections that are not in contact with the stomach or the duodenum wall.¹ However, the presence of large solid necrotic areas often requires direct debridement for complete resolution.

We report our case of percutaneous endoscopic necrosectomy with the powered endoscopic debridement system (EndoRotor; Interscope Inc, Whitinsville, Mass, USA) to treat an isolated abdominal infected walled-off necrosis (WON). We placed an esophageal fully covered self-expandable metal stent (FC-SEMS) through the percutaneous access after removing the drainage catheter.

CASE AND PROCEDURE

A 60-year-old woman was hospitalized for severe post-ERCP pancreatitis complicated by an infected retroperito-

neal WON of 20 × 13 cm in the anterior right pararenal space extending to the iliac area (Video 1, available online at www.giejournal.org). EUS-guided drainage was evaluated, but the collection was not visible from the stomach or the duodenum. A CT scan-guided percutaneous drain (14F) was placed without any improvement because of obstruction of the drainage tube with necrotic debris. Despite an initial reduction in the size of the collection, her clinical conditions deteriorated because of sepsis.

Therefore, an endoscopic approach was attempted, taking advantage of the percutaneous catheter drain tract.^{2,3}

The patient was under analgesedation through the use of a combination of midazolam, propofol, and fentanyl. She was monitored and was given oxygen. Insufflation was done with carbon dioxide. The procedure was performed under the guidance of x-ray imaging. The skin site was disinfected with iodopovidone and anesthetized with a local injection of 10 mL of lidocaine. The external drain was removed and the skin conduit was dilated with a guide-wire balloon catheter up to 18 mm (CRE PRO; Boston Scientific, Marlborough, Mass, USA). An esophageal FC-SEMS (Niti-S stent; Taewong Medical, Seoul, Korea) was placed and fixed to the abdominal skin with stitches (Fig. 1). Endoscopic necrosectomy with EndoRotor was performed by pushing an operative gastroscope (GIF-1TH190; Olympus, Hamburg, Germany) through the SEMS. The use of intraprocedural 1.5% hydrogen peroxide solution



Figure 1. Percutaneous esophageal self-expandable metal stent in the retroperitoneal collection fixed to the abdominal skin with stitches.

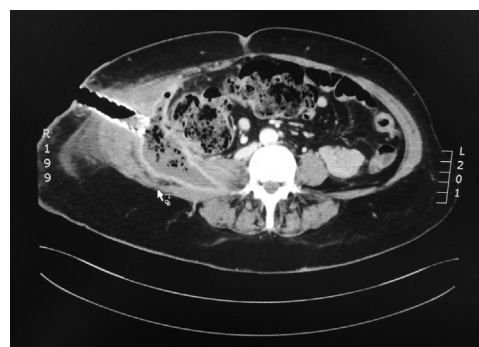


Figure 2. CT scan after 2 sessions of endoscopic necrosectomy with the powered endoscopic debridement system (EndoRotor) through the percutaneous esophageal self-expandable metal stent.



Figure 3. Biliary self-expandable metal stent connected to a drainage bag.

lavage helped to aid the chemical dissolution of solid necrotic material. Two sessions of necrosectomy (60 and 40 minutes) were performed at a distance of 2 days under constant endoscopic and fluoroscopic visualization, without any hemorrhagic adverse events. A 14F catheter was left inside the collection and fixed with stitches through the mesh of the prosthesis. Two lavages a day with sterile physiological solution through the drain facilitated the elimination of necropurulent material.

One week after SEMS placement, a CT scan showed that the collection was considerably reduced in size (8 × 3 cm) (Fig. 2).

On the same day, an endoscopic reevaluation showed a 2-cm outward dislocation of the endoprosthesis because of the presence of granulation tissue in the skin conduit. The esophageal stent was substituted with a smaller biliary FC-SEMS (Taewoong Niti-S, 80 × 10 mm), and a transnasal gastroscope (GIFH190N Olympus) was used to aspirate necrotic fluid until the abscess walls were covered in granulation tissue (Fig. 3).

The biliary stent was removed along with the catheter after 10 days, and the skin conduit was closed with stitches after we performed several transabdominal US reevaluations that documented a further reduction of the collection (Fig. 4).

The patient was discharged in good health after 1 month of hospitalization. A follow-up abdominal MRI after 3 months confirmed the complete reabsorption of the collection and the healing of the skin conduit without any fistula, but it showed persistence of choledocholithiasis. An ERCP was successfully performed 2 months later

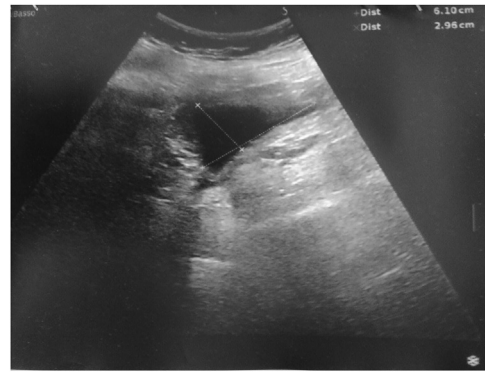


Figure 4. Transabdominal US reevaluation before the patient's discharge.

with the complete removal of remaining stones; she was then enlisted for elective cholecystectomy.

CONCLUSION

Endoscopic necrosectomy after SEMS percutaneous placement is a safe and minimally invasive procedure for treatment of isolated WON. It induces less physiological stress compared with surgical techniques such as video-assisted retroperitoneal debridement (VARD). VARD requires a 5-cm flank incision for insertion of rigid laparoscopic instruments with an increased risk of percutaneous fistula.⁴

Endoscopic necrosectomy uses flexible endoscopes that can access deep within the retroperitoneum through a skin incision smaller than 2 cm, limiting hemorrhagic adverse events, without requiring anesthesia and only using moderate sedation.⁵

Furthermore, the use of EndoRotor, which is specifically designed to perform this procedure, has reduced the number and the duration of necrosectomy sessions to achieve adequate clearance of necrotic content.⁶

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviations: FC-SEMS, fully covered self-expandable metal stent; VARD, video-assisted retroperitoneal debridement; WON, walled-off necrosis.

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