Pediatric application of a lumen-apposing metal stent for transgastric pancreatic abscess drainage and subsequent necrosectomy

A 14-year-old boy presented to our care with severe necrotizing pancreatitis secondary to a psychiatric medication. He had developed walled-off pancreas necrosis (WOPN) in the body of the pancreas that had become infected, as evidenced by air within a 10-cm collection on computed tomography (CT) scanning, fevers to 102 °F, tachycardia, and leukocytosis. The CT scan showed the collection had a mature wall that abutted the stomach (● Fig. 1). Endoscopic ultrasound (EUS)-guided (GF-UCT180; Olympus America, Center Valley, Pennsylvania, USA) transgastric drainage was therefore performed in the endoscopy suite with carbon dioxide insufflation being used. First, a cystogastrostomy tract was created and dilated under endoscopic and fluoroscopic guidance, after which a 10-mm lumen-apposing metal stent (AXIOS; Boston Scientific, Marlborough, Massachusetts, USA) was placed. The stent drained 1000 mL of frank pus that was suctioned out, which was consistent with the collection being an abscess (● Fig. 2; ● Video 1). The patient's fever, tachycardia, and leukocytosis resolved.

After 1 week the patient returned for endoscopic necrosectomy to be performed through the stent (● Fig. 3a). Necrotic debris was removed from the pancreatic cavity using a grasper, Roth net, and snare (● Fig. 3b). Only one endoscopic necrosectomy session was required to clean the pancreatic collection of debris. Subsequent imaging 6 weeks later showed resolution of the WOPN (● Fig. 4) and, 8 weeks after its initial placement, the stent was removed endoscopically. The patient continues to do well.

This case demonstrates that a lumen-apposing metal stent can be used safely in the pediatric population for pancreatic abscess drainage and subsequent necrosectomy. Recently fully covered lumen-apposing metal stents have been created for drainage of pancreatic collections [1]. There is limited literature on the use of these stents in the pediatric population with, to our knowledge, only one case having been reported in the literature [2]. This case adds to the pediatric literature

Fig. 1 Computed tomography (CT) scan showing the pancreatic collection (arrow) abutting the stomach prior to endoscopic drainage.

Fig. 2 Endoscopic view showing frank pus draining through the lumen-apposing metal stent into the stomach.

Video showing placement of a transgastric lumen-apposing stent in a pediatric patient that resulted in drainage of a pancreatic abscess and subsequently allowed endoscopic necrosectomy to be performed.

Fig. 3 Views during endoscopy performed 7 days after stent placement showing: a necrotic material within the pancreatic collection seen through the lumen-apposing stent; b the pancreatic cavity after removal of the debris.

Fig. 4 Computed tomography (CT) scan showing the markedly improved appearance of the pancreas 6 weeks after the drainage and necrosectomy procedure.

suggesting that the use of these stents can be safe, feasible, and efficacious.

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Competing interests: None

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