External pancreatic fistula treated by endoscopic ultrasound-guided drainage with a novel lumen-apposing metal stent mounted on a cautery-tipped delivery system

One of the most common causes of external pancreatic fistula is the iatrogenic manipulation of a complex pancreatic fluid collection concomitantly associated with a disconnected pancreatic duct [1,2]. This situation can lead to the development of a high output (up to 400 mL/d) external pancreatic fistula that is difficult to manage and sometimes requires surgery [3]. In 2012, a 40-year-old woman underwent laparoscopic cholecystectomy with a hepaticojejunostomy Roux-en-Y anastomosis for a congenital Todani’s type IV common bile duct cyst. Postoperative pancreatitis resulted in the development of a complex pancreatic fluid collection in the pancreatic head, which was drained percutaneously. Subsequently, an external pancreatic fistula formed with an output of 200 mL/d. In 2014, the patient was referred to us for further evaluation. Endoscopic retrograde cholangiopancreatography (ERCP) showed a normal main pancreatic duct that lacked a clear communication with the collection (Fig. 1). The injection of contrast through the percutaneous catheter showed the presence of a 4-cm fluid collection (Fig. 2). Endoscopic ultrasound (EUS)-guided drainage with the placement of plastic stents was planned. At EUS, the collection was accessed from the duodenal bulb with a 19-gauge needle, after which a 0.035-inch guidewire was placed. The needle was then exchanged for an 8.5-Fr cystotome, but the collection no longer appeared adjacent to the duodenal wall, probably because it had been pushed away by the guidewire, and major vessels were interposed (Video 1). Based on our previous experience, we decided to replace the cystotome with a novel cautery-tipped stent delivery system that allows the single-step EUS-guided placement of a lumen-apposing fully covered metal stent (Hot AXIOS System; Xlumena, Mountain View, California, USA) [4]. The lesion was directly punctured and entered with the system, and an 8 × 8-mm lumen-apposing fully covered metal stent was delivered under complete EUS guidance (Fig. 3, Video 1). The output significantly dropped the following day, allowing removal of the external catheter 2 days after the procedure. The patient was discharged and remains well 3 months later, without any symptoms.

**Competing interests:** Alberto Larghi is a consultant for xlumena.

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**Video 1**

Single-step endoscopic ultrasound-guided placement of a lumen-apposing fully covered metal stent (Hot AXIOS System) under endoscopic ultrasound guidance to drain an external pancreatic fistula.