

Silmutaneous Resolution of Two Pancreatic Pseudocysts by Endoscopic Cyst Gastrostomy in Hereditary Pancreatitis

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Abstract

An 8-year-old girl with chronic pancreatitis developed 2 large pseudocysts on the posterior wall of the stomach. After an unsuccessful cyst drainage with endoscopic cyst gastrostomy and double pigtail biliary stents, a lumen-apposing self-expandable metallic stent (LASEMS) was inserted with satisfactory drainage and full recovery.

Keywords: Pancreatic Pseudocysts; Endoscopic Cyst Gastrostomy; Hereditary Pancreatitis; Lumen-Apposing Self-Expandable Metallic Stent (LASEMS)

Introduction

Hereditary pancreatitis (HP) is a rare, autosomal-dominant gene disorder that usually presents with recurrent episodes of acute pancreatitis during childhood. HP has a variable spectrum of severity and may develop complications such as pancreatic pseudocysts (PPCs) [1]. Endoscopic approaches to internal drainage of pancreatic pseudocysts are the current minimally invasive management option. Endoscopic cyst gastrostomy (E-CG) is a treatment option for pancreatic pseudocysts where endoscopic ultrasound is not available [2].

Materials and Methods

Under general anaesthesia, using a 11.3 mm side-viewing endoscope, gastroscopy was performed. The pseudocyst was identified on the posterior wall of the stomach protruding into the gastric lumen. Using an endoscopic cystotome, the cyst was punctured and a guidewire was placed into the cyst. At the end of the procedure two double pigtail biliary stents (7 Fr, 4 cm) were placed in order to keep the communication between stomach and cyst open. The drainage was inadequate and a second endoscopy was performed. A lumen-apposing self-expandable metallic stent (LASEMS) was inserted through the gastric-cyst communication.

Case Report

We describe the clinical course of a 5-year-old girl, hospitalized with postprandial abdominal pain, whose laboratory tests showed high serum amylase. Similar episodes of abdominal pain led to readmission and genetic testing was performed which proved the child to carry a heterozygous mutation on the SPINK1 gene. She had an ERCP and sphincterotomy at the age of 6 due to duct obstruction by pancreatic stone. At the age of 7, she eventually developed pancreatic insufficiency and pancreatic enzymes and vitamin supplements were prescribed. At the age of 8 during an acute abdominal pain episode, the abdominal ultrasound revealed two huge PPCs dimensions

of 5,4 X 6 X 4,7cm and 6,7 x 6,6 x 7,5 cm respectively (Figure 1). The CT scan showed findings of chronic pancreatitis with multiple coarse calcifications of the gland and confirmed the presence of two voluminous cysts with characteristics of PPCs in close proximity (Figure 2). The patient was symptomatic with abdominal pain and symptoms of gastric outlet obstruction. Endoscopic cyst gastrostomy was decided as a treatment option for PPC drainage. The pseudocyst was identified on the posterior wall of the stomach protruding into the gastric lumen. At the end of the procedure two double pigtail biliary stents were placed which seemed adequate to ensure complete cyst drainage (Figure 3). On the 4th day postoperatively, fluid reaccumulation occurred and the endoscopy was repeated, inserting a lumen-apposing self-expandable metallic stent through the gastric-cyst communication. for pancreatic fluid cyst drainage since the other two pigtail stents have been occluded (Figure 4). Ultrasonography the 7th day post-op revealed complete resolution of both PPCs (Figure 5), proving that they were not only attached but communicating each other. The stent was removed 4 weeks later with no recurrence.



Figure 1: PPCs in abdominal ultrasound.

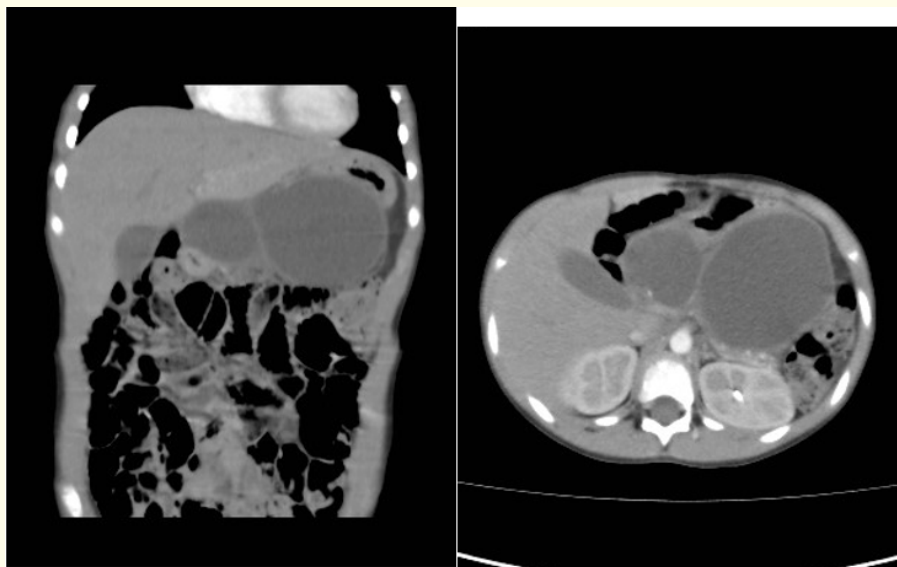


Figure 2: Multiple coarse calcifications of the pancreas and two PPCs in close proximity.

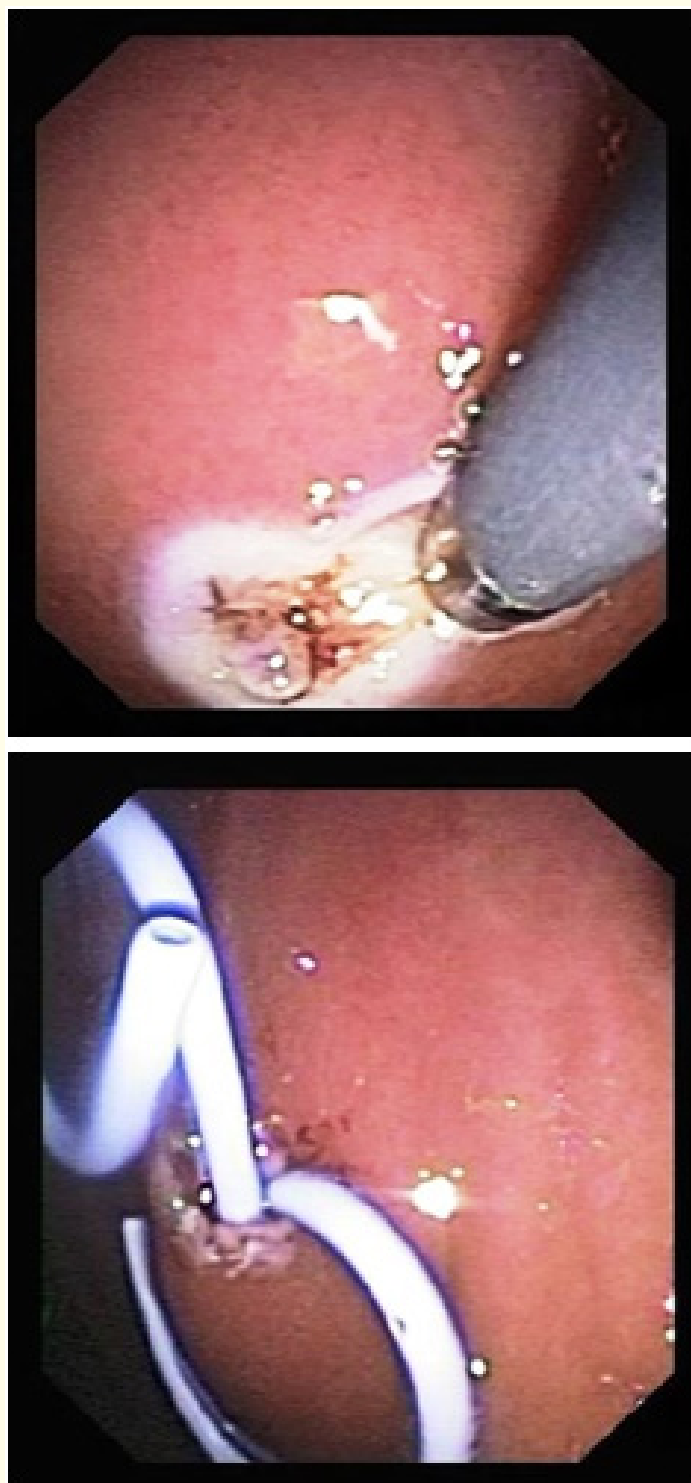


Figure 3: Double pigtail biliary stents placement.

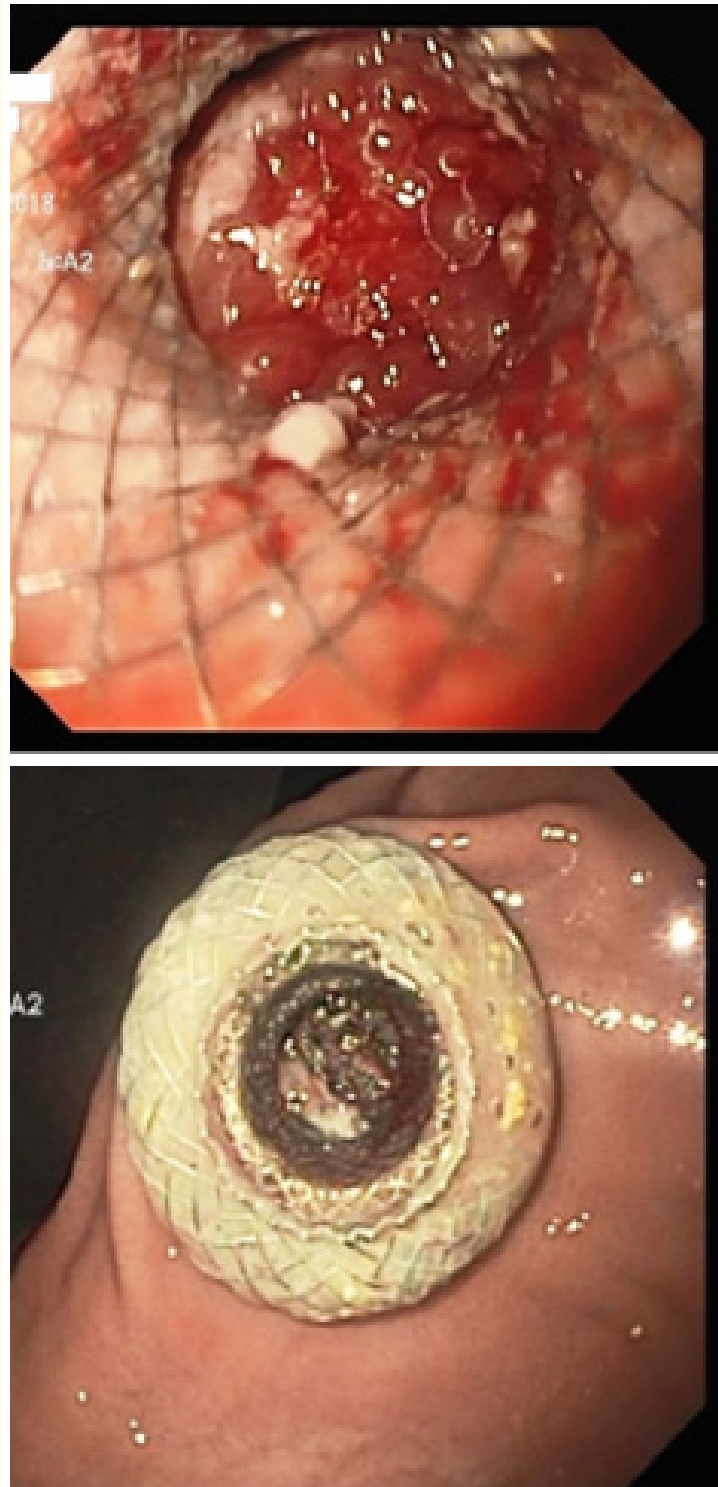


Figure 4: Lumen-opposing self-expandable metallic stent (LACEMS) placement.

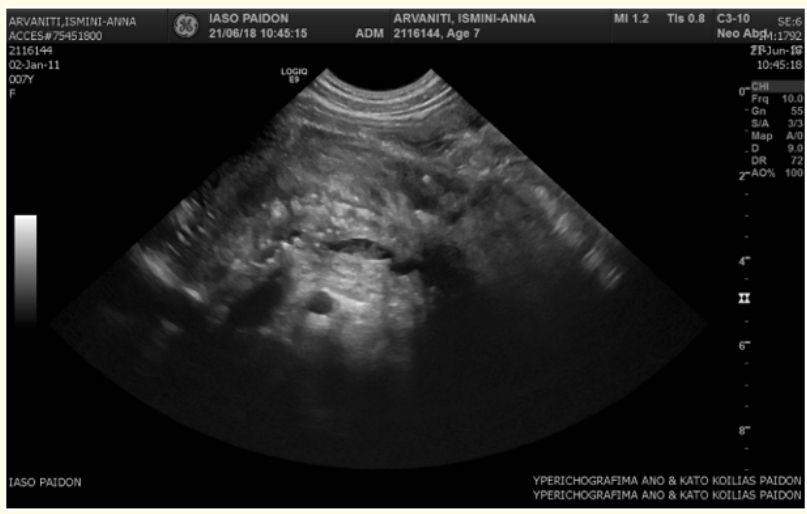


Figure 5: Complete resolution of both PPCs.

Discussion

The current management for PPCs in children is based on adult techniques and includes open, percutaneous, laparoscopic and endoscopic drainage. Some of these modalities carry significant morbidity while percutaneous drainage is may also associated with the development of external pancreatic fistula that may be difficult to manage [3]. Therefore, there is need for a minimally invasive, safe and efficacious treatment for PFCs in children.

Endoscopic drainage of PFCs has emerged as a safe treatment option either through transpapillary drainage or transmurally trough the gastric wall. The transpapillary method is used when a small pseudocyst is seen to be communicating with the pancreatic duct and can be performed under standard endoscopic retrograde cholangiopancreatography (ERCP) setting.

Endoscopic transmural drainage of PPC is the most preferable management. Important prerequisites for successful outcome include the cyst location in direct apposition to the stomach and a visible bulge in the gastrointestinal lumen [4].

Transmural drainage can be accomplished with or without the guidance of EUS but the latter is not applicable in small children and it is not available in all pediatric gastroenterology settings.

The placement of a double pigtail stent is initially preferred for fluid drainage but complications can occur such as stent occlusion and stent dislodgement. Technical failure to drain the cyst can be managed by using a lumen-apposing self-expandable metallic stent (LASEMS).

These FCSEMS are equipped with unique proper ties and have flared ends that prevent stent migration. Early sporadic reports on LASEMS in children are described with no complications [5-9].

This case shows that endoscopic cyst gastrostomy and lumen apposing self-expandable metallic stent (LASEMS) placement is a safe and effective method for the management of pancreatic pseudocysts in children even without the guidance of an endoscopic ultrasound.

Conclusion

Endoscopic cyst gastrostomy and lumen apposing self-expandable metallic stent (LASEMS) placement is a safe and effective method for the management of pancreatic pseudocysts in children. Large prospective studies are needed to further elucidate its use in childhood.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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