

# EUS-guided HotAxios for the treatment of traumatic pancreatic pseudocyst in pediatric patient

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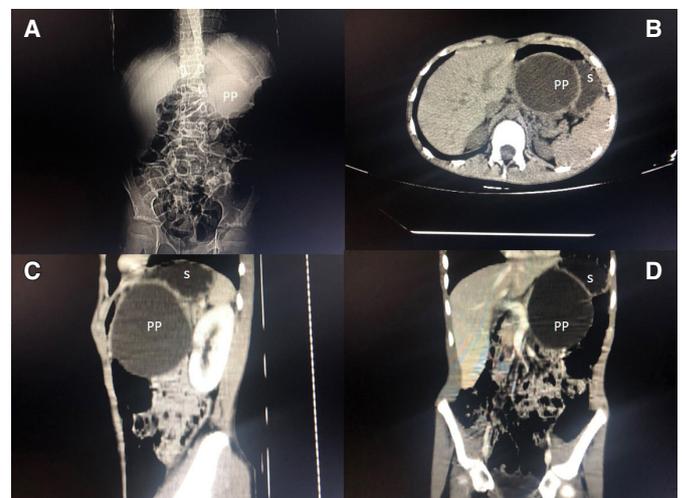
Received: 7 May 2020

Accepted: 14 May 2020

**HEADINGS** – Endosonography. Endoscopy, treatment. Pancreatic cyst. Pancreatitis acute necrotizing. Acute traumatic stress disorders. Nonpenetrating wounds. Child.

The occurrence of pseudocyst is an adverse event (AE) of severe acute pancreatitis (AP) post blunt abdominal trauma<sup>(1,2)</sup>. When this type of trauma occurs with pancreatic involvement, the occurrence of AP is frequent<sup>(3)</sup>. In childhood, about 11% of AP are caused by blunt abdominal trauma<sup>(3)</sup>. During the evolution, fluid collections from the pancreas can be formed, and when we could observe a continuous growth, signs of infection, bleeding, abdominal pain or obstruction and the treatment is indicated<sup>(4)</sup>. Currently, endoscopic ultrasound-guided drainage (EUS) is the gold standard for treatment<sup>(5)</sup>. Hot-Axios system, which has an electrocautery attached, allows the prosthesis to be released inside the transmural region without being necessary a guidewire, dilatation or the use of fluoroscopy<sup>(6)</sup>. The authors report an unusual case of a 12-year-old boy who suffered blunt abdominal trauma with complete fracture of the pancreas evolving to a large pancreatic pseudocyst requiring the use of Hot-Axios<sup>TM</sup>.

A 12-year-old boy suffered blunt abdominal trauma while riding a bicycle. He developed an episode of severe acute pancreatitis, due to a complete fracture of the pancreas, being treated in the intensive care unit for 34 days. He was discharged from the hospital after 40 days with abdominal pain, post-prandial packing and mesogastrium burning. The patient was emaciated, dehydrated and had signs and symptoms of pneumonia. Laboratory studies revealed a slight increase in pancreatic enzymes. The computerized tomography revealed an 8.5 cm of debris collection with fluid content in pancreatic body which results in a stomach compression (FIGURE 1). Upper digestive endoscopy showed a bulging of the posterior stomach wall and the EUS detected an anechoic pancreatic cyst (9.7 x 9.2 cm), with a fixed and hetero-



**FIGURE 1.** A. X-ray shows extrinsic compression of the colon and stomach by the pancreatic pseudocyst (PP) on the left flank (S). B. Transversal tomographic section where it is possible to observe a large cystic formation with stomach compression. C. Sagittal section showing the location of PP in relation to other abdominal organs. D. Coronal section showing the location of PP in relation to other cavitory organs.

geneous material inside (FIGURE 2). Under general anesthesia, the endoscopic drainage with the 10 x 15mm Hot Axios stent was chosen. After insertion, there was an immediate exit of clear secretion without solid components (FIGURE 3, E-VIDEO\*). Total procedure time was 10 minutes and the time required for the Axios

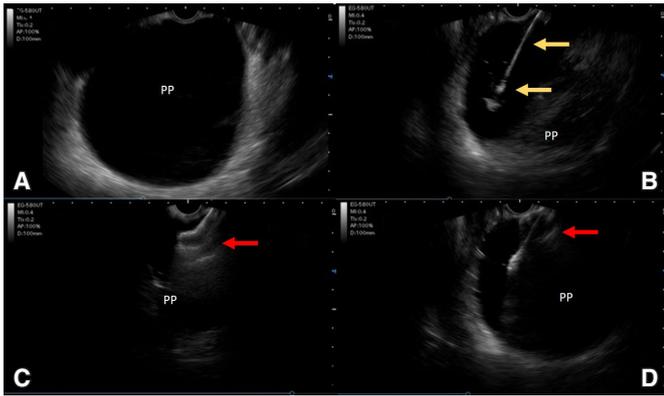
Declared conflict of interest of all authors: none

Disclosure of funding: no funding received

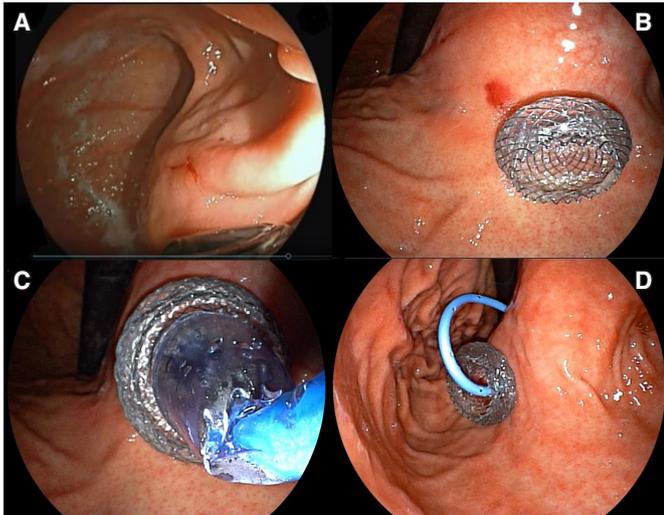
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\* Video: <https://www.youtube.com/watch?v=A-U81IQ7XHK>



**FIGURE 2.** Endoscopic ultrasound. A. Image with an anechoic, oval area with precise limits - pancreatic pseudocyst (PP). B. Insertion of the HotAxios system into the pancreatic fluid collection (yellow arrows). C. Initial moment when the distal flange (red arrow) of the HotAxios prosthesis system was opening. D. Moment of traction against the PP wall of the distal flange (red arrow) to start opening the proximal flange in the gastric lumen.



**FIGURE 3.** Endoscopic images. A. Bulging of the posterior wall of the antrum and gastric body. B. HotAxios prosthesis well positioned. It is possible to notice the proximal flange opened inside the gastric lumen. C. Insertion of an expansion balloon to calibrate the internal orifice of the prosthesis. D. Final moment: passage of a plastic "pig tail" prosthesis inside the other one.

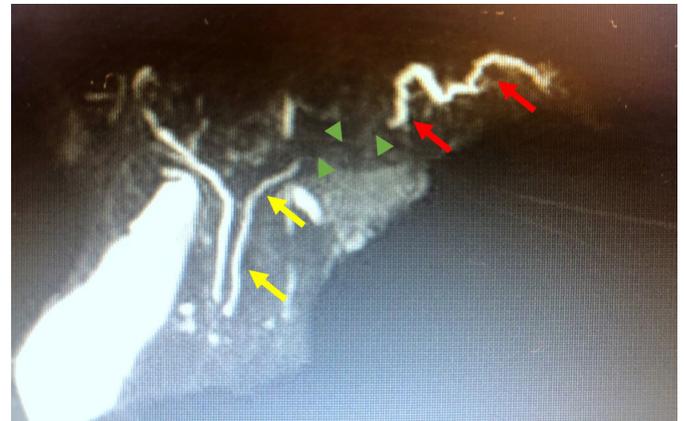
stent insertion was less than 3 minutes. There were no immediate AEs. The patient was discharged three days later, asymptomatic. On the 15th post-drainage day, we performed a magnetic resonance cholangiopancreatography imaging to assess the main pancreatic duct (FIGURE 4). After 9 weeks, the stent was removed and the patient presented a good evolution without recurrence of the pancreatic fluid collection previously described.

#### ACKNOWLEDGEMENT

We want to thank the fellows mentioned below with orcid id for before during and after collaborating in this innovative procedure: Isabela Trindade Torres: 0000-0002-8645-2934. Samuel Galante Romanini: 0000-0003-2301-5363. Juliana Silveira Lima de Castro: 0000-0003-0280-8356. Juan Pablo Ramon Serrano: 0000-0002-0453-5323.

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**FIGURE 4.** Magnetic resonance cholangiopancreatography shows the pancreatic duct inside the head and proximal body of the pancreas (yellow arrows) and the main pancreatic duct inside the tail of the pancreas (red arrows). The green arrowheads show the breaking point of the main pancreatic duct.

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