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Surgical Treatment of Pancreatic Pseudocyst in a Pediatric Patient. Case Report

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Abstract **Case Report**

***Introduction*:** The pancreatic pseudocyst is usually a peripancreatic fluid collection with a wall, almost always sterile [2, 3]. Most of them are located in the pancreatic tail and usually produce amylase elevation. In 1761, Morgan and his team discovered the first pancreatic pseudocyst after an autopsy, establishing the characteristics of its formation and anatomy [1]. Its incidence is 1 per 100,000 cases per year with a prevalence of 6% to 18.5% in the adult population. They are rare in children, with female predominance. 50% to 70% of these heal spontaneously within six months [7]. Currently, the treatment of pancreatic pseudocysts is conservative; current criteria establish that only symptomatic patients should be treated. The interventional treatment options range from endoscopic treatment to removal by distal pancreatectomy. ***Clinical Case*:** A 13-year-old female patient with no medical history presented with abdominal pain located in the epigastrium with radiation to the right hypochondrium and incoercible vomiting for 3 days. Ultrasound showed distended gallbladder with thickened walls and gallstones. The condition worsened a few hours after admission, requiring urgent diagnostic laparoscopy with trans-surgical findings of free serosanguineous fluid (1200 ml) in the abdominal cavity and signs of necrohemorrhagic pancreatitis of possible biliary etiology. The patient underwent postoperative hospital surveillance for 8 days and did not show complications. A plain and contrast CT scan of the abdomen was performed with a result of pancreas with defined borders and decrease of cystic volume: 90 cm^3 in relation to the previous size of 250 cm^3 and permeable cystogastric fistula. She has been maintained in subsequent outpatient controls, and after 5 months of being treated, she is evaluated as an asymptomatic patient. ***Conclusions*:** Pancreatic pseudocyst is a rare disease and its development in pediatric patients is uncommon. The diagnosis of this pathology is generally clinical; however, the gold standard for its imaging identification is a CT scan. Although in most cases its treatment is conservative, depending on the patient's characteristics, immediate surgical treatment should be sought in order to establish a good prognosis.

Keywords: Pancreatic pseudocyst, Surgical treatment.

INTRODUCTION

The pancreatic pseudocyst is usually a peripancreatic fluid collection with a wall, almost always sterile [2, 3]. Most of them are located in the pancreatic tail and usually produce amylase elevation. In 1761, Morgan and his team discovered the first pancreatic pseudocyst after an autopsy, establishing the characteristics of its formation and anatomy [1]. Its incidence is 1 per 100,000 cases per year with a prevalence of 6% to 18.5% in the adult population. They are rare in children, with female predominance. 50% to 70% of these heal spontaneously within six months [7].

There is a variety of clinical presentations. They often appear as small cysts that can be asymptomatic, being an incidental finding. They present with gastrointestinal symptoms or compressive signs. They can also have systemic manifestations due to their complications such as hemorrhages, rupture, pancreatic ascites, infection, shock and even sepsis [7, 10, 11].

Diagnosis is clinical and there is no definitive laboratory test. Abdominal ultrasound has a sensitivity of 75-90% and tomography is the most precise test to establish the diagnosis and location of the pseudocyst with a sensitivity of 90-100% [15, 16]. This is classified based on its clinical picture and radiological and anatomical findings.

Currently, the treatment of pancreatic pseudocysts is conservative; current criteria establish that only symptomatic patients should be treated. The interventional treatment options range from endoscopic treatment to removal by distal pancreatectomy.

CLINICAL CASE

A 13-year-old female patient with no medical history presented with abdominal pain located in the epigastrium with radiation to the right hypochondrium and incoercible vomiting for 3 days. Ultrasound showed distended gallbladder with thickened walls and gallstones. The condition worsened a few hours after admission, requiring urgent diagnostic laparoscopy with trans-surgical findings of free serosanguineous fluid (1200 ml) in the abdominal cavity and signs of necrohemorrhagic pancreatitis of possible biliary etiology.

She required monitoring in the Pediatric Intensive Care Unit due to persistent inflammatory response secondary to acute pancreatitis complicated with early nosocomial pneumonia with favorable evolution 72 hours after starting antibiotic therapy. After hemodynamic stability, a plain and contrast CT scan of the abdomen was performed, showing a pancreas with poorly defined borders and increased volume with decreased attenuation values, the head measuring 7.1 cm, the body 6.7 cm and the tail 4.8 cm, with fluid attenuation values, causing mass effect on the greater curvature of the stomach, scarce inflammatory fluid adjacent to the gland, peripheral enhancement of the uncinate process and the tail with the use of intravenous contrast. These findings suggest pancreatic pseudocyst.

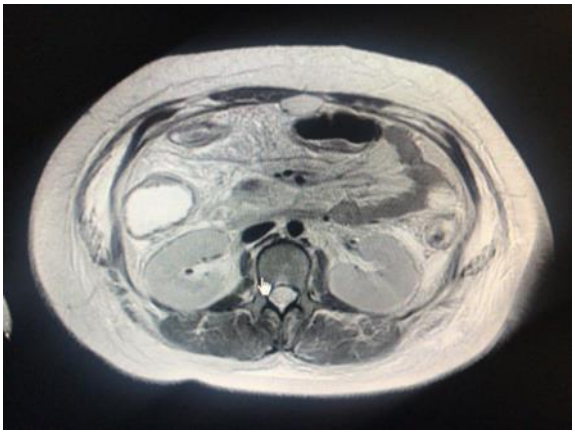

Figure 1: CT scan, axial plane, initial image

It was decided to maintain a conservative treatment and antibiotic therapy. During her stay in the hospital, patient continues with intermittent fever and sporadic abdominal pain that is partially controlled with analgesia. It was decided to change to broad-spectrum antibiotic therapy with which she showed clinical improvement. However, due to persistent episodic abdominal pain, it was decided to perform a new plain and contrast CT scan of the abdomen, where an enlargement of the cyst in the pancreatic gland was observed, so it was decided to perform surgery.

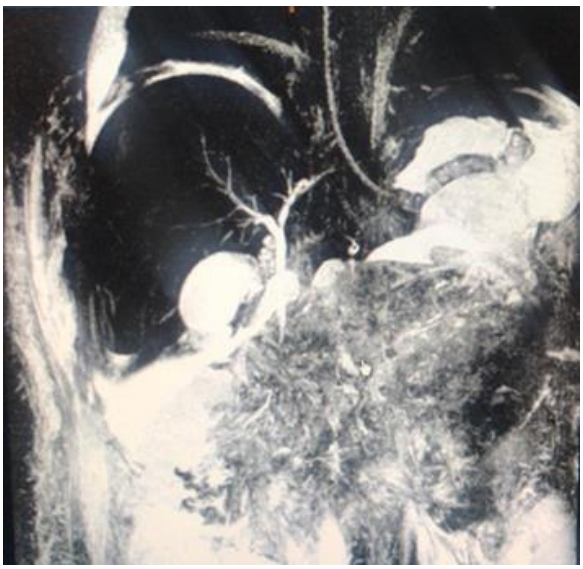

Figure 2: CT scan, coronal plane, image with which the decision to perform surgery is taken

Laparoscopic surgery is performed, carrying out abdominal exploration with findings of cystogastric adhesions from a previous surgery and omentum adhered to the cystic area with easy release. The short gastric arteries are sectioned and the pancreatic pseudocyst is exposed, making an incision in it to aspirate the contents (greenish, approximately 250 cm^3). Then, at the level of the posterior wall of the stomach, a 2.5 cm incision is made, uniform to that of the cyst with which it is anastomosed. Procedure without complications.

The patient underwent postoperative hospital surveillance for 8 days and did not show complications. A plain and contrast CT scan of the abdomen was performed with a result of pancreas with defined borders and decrease of cystic volume: 90 cm^3 in relation to the previous size of 250 cm^3 and permeable cystogastric fistula. She has been maintained in subsequent outpatient controls, and after 5 months of being treated, she is evaluated as an asymptomatic patient.

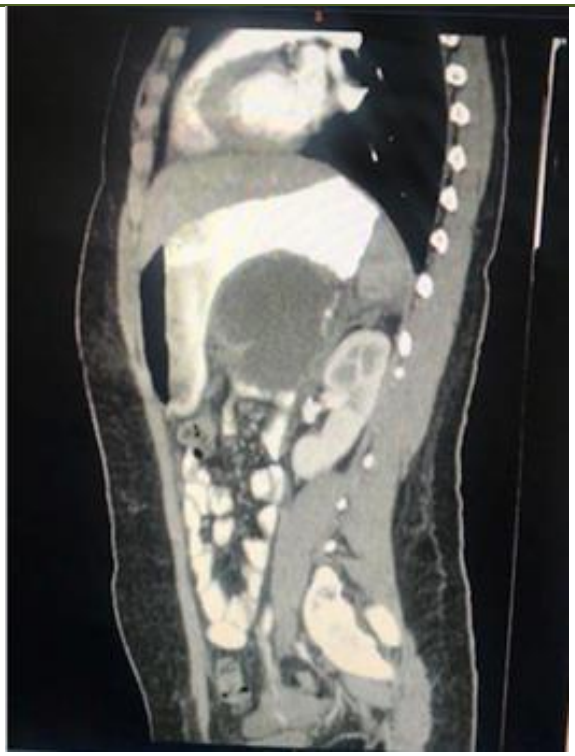

Figure 3: CT scan, sagittal plane, postoperative image

DISCUSSION

Fluid collections are the most common local complications in acute pancreatitis; they may present with symptoms of obstruction of the pancreatic biliary drainage [4, 5]. The onset of an acute peripancreatic fluid collection that does not heal spontaneously in the course of 4 weeks can become encapsulated and is now called pancreatic pseudocyst. This is usually a peripancreatic fluid collection rich in pancreatic enzymes encapsulated by a wall formed by granulation tissue and fibrosis that lacks epithelium [2, 3].

The most common symptom is pain in the epigastrium with insidious onset, radiating to the left hypochondrium, which is relieved by changes in position and intensifies with food intake. The pain becomes pleuritic when it involves the diaphragm. It is accompanied by anorexia, nausea, repetitive and abundant intense vomiting and postprandial fullness. Depending on the percentage of the pancreas affected, signs of insufficiency may appear, evidenced by steatorrhea and diabetes. If the cyst is small, it is usually asymptomatic. While the growth of the pseudocyst may cause compressive symptoms and signs at the level of the lower limbs or intestine or may produce ascites due to portal hypertension [11].

In the past, treatment was planned on the basis of cystic size; any pseudocyst larger than 6 cm and persisting for more than 6 weeks should be drained. Currently, it is considered that those that cause symptoms regardless of size should be treated. The most common procedure is to perform echo-endoscopy through which the pseudocyst is punctured, leaving a drainage that communicates it with the intestinal tract. If this is not possible, percutaneous puncture guided by ultrasound or CT scan is considered.

Surgical intervention is generally indicated in recurrent pseudocysts, pseudocysts combined with common duct or duodenal stenosis, very symptomatic pseudocysts associated with dilated pancreatic duct and the presumptive diagnosis of neoplasia [19, 22]. In some cases, pseudocysts located in the tail of the pancreas can be removed by distal pancreatectomy.

CONCLUSIONS

Pancreatic pseudocyst is a rare disease and its development in pediatric patients is uncommon. The diagnosis of this pathology is generally clinical; however, the gold standard for its imaging identification is a CT scan. Although in most cases its treatment is conservative, depending on the patient's characteristics, immediate surgical treatment should be sought in order to establish a good prognosis.

Conflict of Interest: We, the authors, declare that we have no personal, financial, intellectual, economic, and corporate conflicts of interest.

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