https://journal.utripoli.edu.ly/index.php/Alqalam/index eISSN 2707-7179

Case report

Non-Operative Management of Pancreatic Pseudocyst in Paediatric Population: A Case Report

Safaa Al-Atrash

Department of Pediatric Surgery, Benghazi Children's Hospital, Benghazi, Libya

ARTICLE INFO

Corresponding Email. *Safaaabdelbsit95@gmail.com*

Received*: 23-07-2024*
Accepted*: 27-09-2024*
Published*: 10-10-2024*

Keywords*: Pancreatic Pseudocyst, Conservative management, Pancreatic Trauma, Grade (III-IV) Pancreatic Injury.*

ABSTRACT

Pancreatic pseudocyst is a rare medical condition in the pediatric population; it is a challenging lesion to diagnose and treat. The most common etiology identified in children is post-traumatic, being up to 80-100% of the cases. Approximately 60% of pancreatic pseudocysts following trauma require surgical intervention. The pseudocyst of the pancreas develops within the first 3–4 weeks after trauma. In this report, we present a case of a 3-year-old boy with pancreatic pseudocyst followed by blunt abdominal trauma in which successful conservative management was done without any complications or need for surgical intervention. This case differs from most cases reported in the literature because of the short time between pancreatic trauma and pseudocyst formation. Furthermore, the successful non-operative management of grade III-IV pancreatic injury with acute formation of pseudocyst.

Cite this article. *Al-Atrash S. Non-Operative Management of Pancreatic Pseudocyst in Paediatric Population: A Case Report. Alq J Med App Sci. 2024;7(4):980-983. https://doi.org/10.54361/ajmas.247411*

INTRODUCTION

A pancreatic pseudocyst is a collection of fluid around the pancreas. The most common etiology of the pancreatic pseudocyst identified in children is post-traumatic, being up to 80-100% of the cases in different series. Idiopathic causes comprised up to 25% of the cases in a series of pediatric pseudocysts. The location of the pseudocyst is in the lesser peritoneal sac in proximity to the pancreas. It may involve any part of the pancreas, head, body, and tail. Large pseudocysts can extend into the paracolic gutters and pelvis [1].

The most common presenting symptom is epigastric pain. Other symptoms include mass, nausea, vomiting, feeling of bloating, or a deep ache in the abdomen. Additional symptoms include jaundice, chest pain, anorexia, weight loss, ascites, and rarely gastrointestinal hemorrhage. If infection has set in, the child may present with fever, worsening abdominal pain, and systemic signs of sepsis. The child may also present with failure to thrive [1].

Complications of pancreatic pseudocysts include spontaneous rupture, hemorrhage, and infection [2].

Imaging studies, such as ultrasound, computed tomography scans, and endoscopic retrograde cholangiopancreatography, are helpful in establishing diagnosis. Most of the diagnoses are usually made by an ultrasonogram or a CT scan abdomen. The aim of treatment for pseudocyst is the avoidance of complications [1].

Acute pancreatic pseudocysts smaller than 5 cm in diameter are managed with observation for 4–6 weeks because most resolve spontaneously. Acute pancreatic pseudocysts larger than 5 cm in diameter may require surgical intervention; however, conservative therapy is required for approximately 4–6 weeks to allow the cyst wall to mature. Chronic pancreatic pseudocysts (>3 months) are treated surgically [2].

Management of pancreatic pseudocysts has been associated with considerable morbidity (15-25%). These morbidities include pancreatic leak, wound infection, failure to thrive, and insulin-dependent diabetes. The mortality is, however, 0-1% [1]. In this report, we present a case of a 3-year-old boy with pancreatic pseudocyst followed by blunt abdominal

trauma in which successful conservative management was done without any complications or need for surgical intervention.

Case presentation

A 3-year-old healthy child was transferred to Benghazi Children's Hospital as a case of blunt abdominal trauma. The child sustained a pedestrian vehicle accident 3 days prior to the presentation with a history of vomiting and fever. Otherwise, the child was doing well and hemodynamically stable. No other systems were involved. Abdominal examination showed no distension, mild epigastric fullness, and no tenderness. The patient was admitted to the surgical intensive care unit, no feeding was allowed, he commenced on intravenous fluid, antibiotics, omeprazole, and investigations were initiated. The investigations were as the following; Serial Hemoglobin (111.5 -11- 10.9 - 9.2 - 9.5 - 9.9 - 9.7 - 9.2 - 10.1), serum amylase: 68 IU/L, serum lipase: 71 IU/L, AST: 22 U/L, ALT: 18 U/L, and total bilirubin: 0.7 mg/dL / Direct Bilirubin: 0.3 mg/dl / indirect Bilirubin: 0.5 mg/dl.

Ultrasound scan of the abdomen showed well-defined hematoma measured about 6 cm seen anterior to the spleen; the study was suboptimal, so further evaluation with a cross-sectional study (CT scan) of the abdomen was advised. CT scan of the abdomen and pelvis confirmed a 7.8 cm well-defined fluid density cystic lesion seen at the splenic hilum displacing the stomach ventrally and seen just above the pancreatic tail, confirming the pancreatic pseudocyst.

The oedema of the pancreatic tail, the immature wall of the cyst, and the history of acute abdominal trauma highly suggest the acute onset of this pseudocyst. Further evaluation with magnetic resonance MRCP was suggested; however, the unavailability of the scan in the hospital made it impossible to perform.

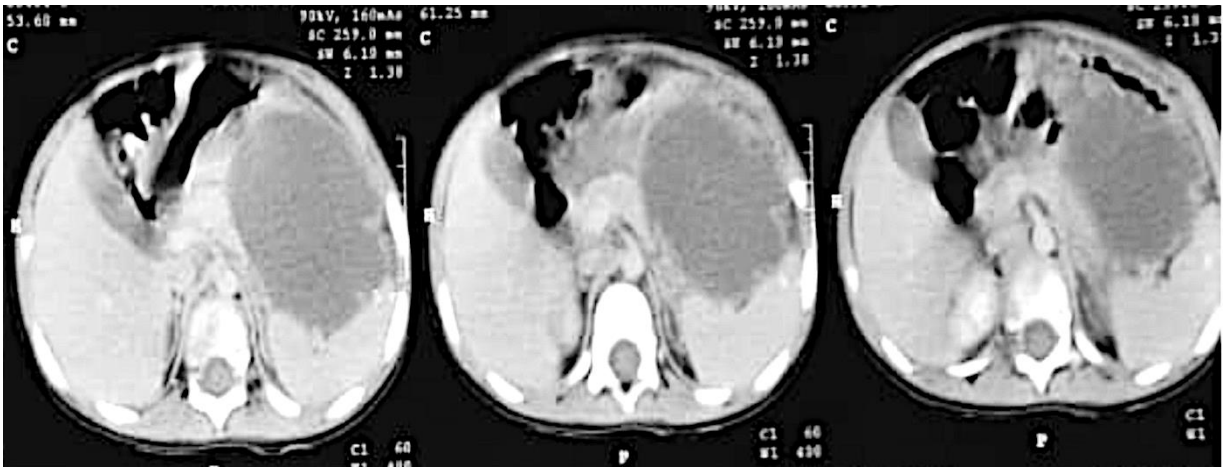

Figure 1. Axial CT scan of the abdomen showing fluid collection with immature wall cyst around the tail of pancreas indicates acute formation of cyst

At 2 weeks of outpatient follow-up, the child was having mild abdominal pain and a low-grade fever. The investigation shows serum amylase of 123 IU/L and serum lipase of 185 IU/L. Abdominal USS Disclosed that evidence of a well-defined thick wall cystic lesion measured about 11 cm x 8.5 cm bounded between the pancreas posteriorly, the stomach anteriorly, and the spleen laterally suggestive of a mature pseudopancreatic cyst.

The patient readmitted to the intensive care unit to exclude sepsis and discharged in two days after the child settled down and no more fever or abdominal pain. Two weeks later, abdominal USS was repeated and showed that pancreatic pseudocyst is reduced in size and now measures 6.5 x 5.5 cm. The child missed his follow-up appointments for the next 8 weeks, and he only showed up 3 months later. Abdominal ultrasound scan revealed normal pancreatic size with no masses or cystic lesions. Clinically, the child was gaining weight, eating well, and in good health status.

DISCUSSION

Blunt abdominal trauma is the major cause of abdominal injury in children. Whereas injury to the pancreas is uncommon, it is the fourth most common solid organ injury. The mechanism of injury is attributed to the compression of the pancreas against the rigid spinal column or by discrete intrusion forces. Young children with flatter diaphragms, thinner abdominal walls, and higher costal margins sustain pancreatic injuries from blows to the abdomen more than adults [3]. Pancreatic pseudocysts in children are usually a sequela of pancreatic blunt trauma, though they may rarely be associated with chronic pancreatitis and parenchymal disease [1]. The formation of a pseudocyst usually requires 4

or more weeks (many clinicians state six) from the onset of acute pancreatitis. In this regard, an acute pseudocyst is a fluid collection arising in association with an episode of acute pancreatitis, lasting more than 4 weeks and surrounded by a defined wall. Fluid collections lasting less than 4 weeks that lack a defined wall are more properly termed acute fluid collections [5, 6]. In contrast to our case, the pseudocyst was formed in less than a week. It has been reported that pseudocysts from non-traumatic etiologies are more likely to benefit from surgical interventions, whereas pseudocysts from traumatic etiology are more amenable to conservative management [1]. High-grade pancreatic injuries in children are rare, and significant variability exists in non-operative management strategies, which may affect outcomes and effective resource utilization where length of stay is always a concern. Recently published studies show that children managed non-operatively have equivalent and sometimes better outcomes when compared with operative management in regard to death and overall complications [3]. A study was done to compare operative versus non-operative management of blunt pancreatic trauma in children. A systematic literature search was performed. Studies including children with blunt pancreatic injuries classified according to the American Association for the Surgery of Trauma classification were included. The primary outcome was pseudocyst formation. After screening 526 studies, 23 studies with 928 patients were included. Sufficient data were available for 674 patients (73%). Of 309 patients with grade I or II injuries, 258 (83%) were initially managed non-operatively with a 96% success rate. Of 365 patients with grade III, IV, or V injuries, non-operative management was initially chosen for 167 patients (46%) with an 89% success rate [4]. This case differs from most reported in the literature owing to the time to form the pseudocyst, as in our case it was less than a week between the pancreatic trauma and the pseudocyst formation. In contrast, the time that pseudocyst formation usually takes to establish is from 4 to 6 weeks. Furthermore, we successfully managed a grade III-IV pancreatic injury conservatively without the need for neither endoscopic nor surgical intervention.

CONCLUSION

Pancreatic pseudocyst in children with blunt abdominal trauma can be formed in less than a week, and this possibility should be kept in mind when dealing with trauma in children as well as needs to be considered in the differential diagnosis of abdominal masses in such a scenario. In resource-limited situations, conservative management of grade III-IV pancreatic injury with acute formation of pseudocyst can be considered. We recommended that more studies looking at the conservative management of pancreatic pseudocyst and its sequelae should be considered in our hospital, and a local management protocol based on the resources available needs to be worked out.

Acknowledgment

I would like to express my deepest appreciation to Dr. Omar Khamag for his support and guidance.

Conflict of interest. Nil

REFERENCES

1. Gupta DK, Shilpa Sharma, Azizkhan RG. Pediatric Surgery: Diagnosis and Management. Vol. 1. Jaypee Brothers Medical Publishers; New York; 2010.
2. Al-Salem AH. Atlas of Pediatric Surgery: Principles and Treatment. Springer; 2020.
3. Haider F, Al Awadhi MA, Abrar E, et al. Pancreatic injury in children: a case report and review of the literature. Journal of Medical Case Reports. 2017;11(1).
4. Koh E, van Poll D, Goslings, J C, et al. Operative Versus Nonoperative Management of Blunt Pancreatic Trauma in Children A Systematic Review. pancreas. Published online 2017.
5. Bradley EL 3rd. A clinically based classificationsystem for acute pancreatitis. Arch Surg 1993; 128:586-90.
6. Bradley EL Jr, Gonzalez AC, Clements JL Jr. Acute pancreatic pseudocysts: incidence and implications. Ann Surg 1976; 184:734-7.

https://journal.utripoli.edu.ly/index.php/Alqalam/index eISSN 2707-7179

العلاج غير الجراحي لتكيس البنكرياس الكاذب في الأطفال: تقرير حالة

صفاء الأطرش

قسم جراحة الأطفال، مستشفى الأطفال - بنغازي، بنغازي، ليبيا

المستخلص

تُعد الكيسة الكاذبة البنكرياسية حالة طبية نادرة في فئة الأطفال؛ وهي آفة صعبة التشخيص والعلاج. السبب الأكثر شيوعًا الذي تم تحديده لدى الأطفال هو ما بعد الصدمة، حيث يصل إلى 80-100% من الحالات. يتطلب ما يقرب من 60% من الأكياس الكاذبة البنكرياسية بعد الصدمة تدخلًا جراحيًا. تتطور الكيسة الكاذبة البنكرياسية في غضون الأسابيع الثلاثة إلى الأربعة الأولى بعد الصدمة. في هذا التقرير، نقدم حالة صبي يبلغ من العمر 3 سنوات يعاني من كيس كاذب في البنكرياس متبوعًا بصدمة بطنية حادة تم فيها إجراء علاج محافظ ناجح دون أي مضاعفات أو الحاجة إلى تدخل جراحي. تختلف هذه الحالة عن معظم الحالات المذكورة في الأدبيات بسبب الوقت القصير بين الصدمة البنكرياسية وتكوين الكيسة الكاذبة. علاوة على ذلك، فإن العلاج غير الجراحي الناجح لإصابة البنكرياس من الدرجة الثالثة والرابعة مع التكوين الحاد للكيس الكاذب.

الكلمات المفتاحية: تكيس البنكرياس الكاذب، العلاج المحافظ، صدمة البنكرياس، إصابة البنكرياس من الدرجة.(III-IV)