



Traumatic Giant Pancreatic Pseudocyst in Pediatric Patient: A Rare Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. All authors designed the study, reported the case, wrote the first draft of the manuscript and managed the literature searches. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Aims: To report cases of pancreatic cysts, the flow of diagnosis, and management of these cases.

Case Description: We reported a case of pancreatic cyst in a 14-year-old boy. The patient presented with a chief complaint of epigastric discomfort for about 4 months accompanied by stomach enlargement. This complaint may be due to a road accident by stomach trauma a year ago. On the physical examination, no tenderness in all abdomen quadrants was found with palpable fixed intra-abdominal mass measuring 18x15 cm. The CT scan examination showed the presence of cystic lesions with defined regular margins intraperitoneally that pushed the intestinal system and abdominal organs posteriorly. Laparotomy Roux-en-Y was performed on the patient. Operation was done without further complication.

Discussion: The boy hit his stomach a year ago, resulting in the symptoms and disorder of the abdomen that started to appear 4 months ago. This disorder can occur due to trauma to the abdomen that causes pancreatic disorders. Pancreatic cyst disorder most common in children with a history of abdominal trauma is pancreatic pseudocyst. The diagnosis confirmed from CT scan findings showed the presence of cystic lesion. Laparotomy Roux-en-Y was chosen as the

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management of pancreatic pseudocyst. The procedure was chosen due to its high success rate and low risk of complications.

Conclusion: Pancreatic cyst is a rare disorder. Pancreatic pseudocyst most commonly occurs in children due to abdominal trauma. Physical examination showed enlargement in the abdominal region. The diagnosis was confirmed by ultrasound and CT scan. There were many choices of treatment procedures. Laparotomy Roux-en-Y was chosen due to its benefits. The laparotomy procedure was done without any complications.

Keywords: Pancreatic cyst; pancreatic pseudocyst; laparotomy roux-en-y.

1. INTRODUCTION

The pancreas is a retroperitoneal organ that functions as a gland. The pancreas has both exocrine and endocrine functions. The function of an exocrine is to produce juice that contains digestive enzymes while the endocrine is to produce the hormones insulin, glucagon, somatostatin and polypeptides. In an abnormal condition, the pancreas will be filled with fluid, called a pancreatic cyst [1,2,3].

Pancreatic cysts are defined as sites where fluid collects in the body, neck, or cauda. The incidence rates of asymptomatic pancreatic cysts were 2.2% in Korea and 3.5% in Japan. In low-resource countries, most diagnoses are made at or after surgery. Pancreatic cysts are reported to be present incidentally in 3% of CT scans and 20% of MRIs, and their reported prevalence increases with age. Pancreatic pseudocysts are the most common lesions of pancreatic cysts. This cyst is associated with acute or chronic pancreatitis or due to trauma. The prevalence of pseudocyst due to acute pancreatitis is 5%-16% and chronic 20%-40%. Meanwhile, pancreatic pseudocysts in children are most commonly caused by acute pancreatitis or abdominal trauma [2,4,5].

The principle of cyst management to determine the approach to action and timing of intervention must pay attention to the location, the maturity of the cyst wall when the patient presents with symptoms, the presence of comorbidities, and the availability of surgical facilities and infrastructure. The surgery performed varies depending on the diagnosis obtained. Surgical measures that can be performed include endoscopic drainage, percutaneous drainage, internal drainage, pseudocyst resection, laparoscopy, and external drainage. Internal drainage depends on the topographic anatomy of the cyst. Cystogastrostomy, cystoduodenostomy, and cystojejunostomy can be performed. Internal drainage is often combined with the Roux-en-Y

technique, which is a surgical technique by creating a Y-shaped anastomosis. The combination of the Roux-en-Y technique with cystojejunostomy is often used because it has a high success rate and a low risk of complications. Careful and appropriate management must be chosen and considered so that pseudocysts can be managed properly [6].

2. PRESENTATION OF CASE

We reported a case of pancreatic cyst in a 14-year-old boy. The chief complaint is epigastric discomfort. The patient felt this approximately 4 months ago before being admitted to the hospital. The complaint was accompanied by nausea (+), vomiting (-), and fever (-). During these 4 months, the size of the stomach was getting bigger without abdominal pain, bowel problems, and urination problems. The patient had a history of traffic accident approximately 1 year before with a falling position on the stomach hit by a motorbike handlebar. He had neither previous similar history nor surgery.

From the physical examination of the abdomen, the abdominal wall was higher than the chest wall, darm steifung (-), darm contour (-), distended (+), supple (+), a fixed intra-abdominal mass with a size of 18 cm x 15 cm where the liver and spleen are difficult to evaluate, fluctuating (+), tenderness (-), and undulation (-).

CT Scan concluded a cystic lesion with defined regular intraperitoneal margins that pushed the intestinal system and abdominal organs posteriorly, with a possible diagnosis of the giant mesenteric cyst and pseudo pancreatic cyst in the pancreatic tail.

Based on the history, physical and supporting examinations, we can conclude that the patient had the pancreatic pseudocyst. Management of this patient was carried out by the Laparotomy Roux-en-Y procedure. During surgery, the pseudocyst is aspirated. The fluid that comes out

is reddish-brown serous. The operation was done without any complication, and the patient was treated at the PICU. After the surgery, the patient's condition was stable with vomiting once, minimal post-op pain, and flatus (+). The patient

was discharged seven days after surgery. It is necessary to monitor post-surgery Roux en Y to see if any complications arise. There is no complication after thirty days followed up.



Fig. 1. Abdomen enlargement

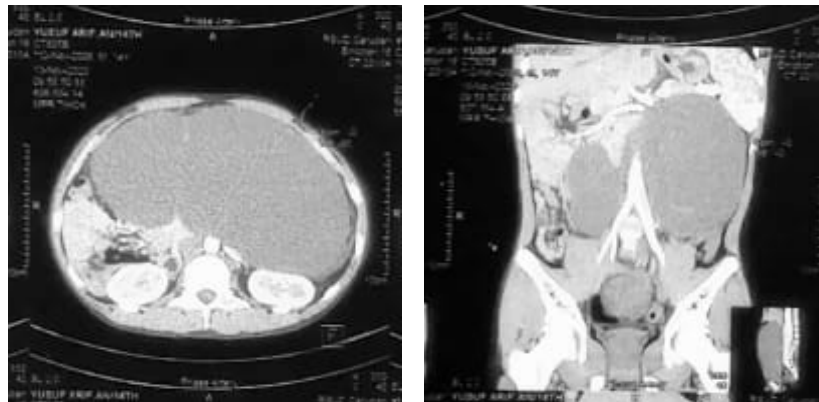


Fig. 2. CT scan

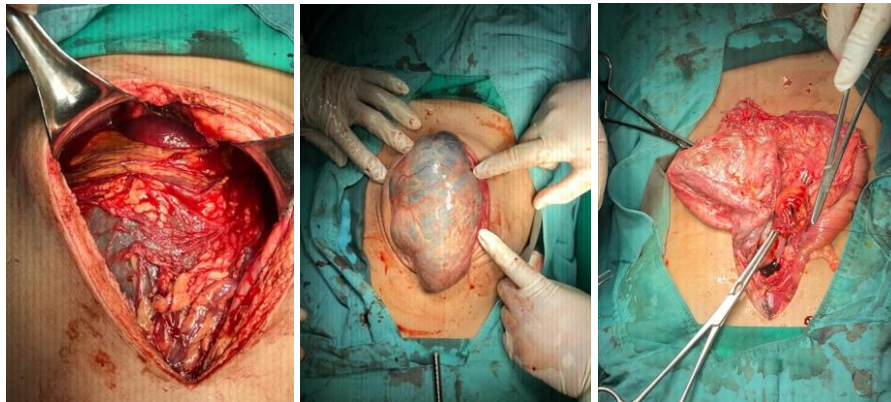


Fig. 3. Laparotomy roux-en-Y

3. DISCUSSION

A 14-year-old boy hit his stomach a year ago. The symptoms and disorder of the abdomen started to appear 4 months ago. The boy had epigastric discomfort and enlargement. These symptoms occurred due to abdomen trauma that caused pancreatic disorders. Pancreatic fluid might accumulate in parts of the pancreas that made the patient feel nausea discomfort and have an abdominal enlargement. Pancreatic cyst disorder most common in children with a history of abdominal trauma is pancreatic pseudocyst [2,7,8].

Intra-abdominal mass sized 18 cm x 15 cm was found on the physical examination. The fluid accumulated in a cavity was formed from the surrounded wall of fibrous or granulomatous tissue as a result of acute trauma. The diagnosis of acute pseudocyst can be made for an acute fluid collection that lasts for 4-6 weeks [9,5].

The diagnosis was confirmed by USG and CT scan findings. Ultrasound investigations concluded that there was a large cystic mass with a solid part in it in the abdominal cavity. Considering that the gland can only be visualized in 80% of patients and the technique is highly dependent on the examiner's experience, the diagnostic sensitivity of 88-100% and specificity of 92-98% are still high. Nonetheless, a negative predictive value (NPV) has been calculated at only 9%, which makes transabdominal ultrasound a poor tool to exclude small pancreatic cysts [6].

CT scan showed the presence of cystic lesion. CT scan yields the highest sensitivity (82-100%), specificity (98%, NPV: 92-94%), and overall accuracy of 88-94%. The CT scan should also be reviewed for the location, wall thickness, and internal architecture of the cyst. Those examinations concluded a cystic lesion with defined regular intraperitoneal margins that pushed the intestinal system and abdominal organs posteriorly, with a possible diagnosis pseudo pancreatic cyst in the pancreatic tail. Those findings were following pseudocyst characteristics that are common in the tail, solid, and unilocular parts [10,6,11,12].

Internal drainage was chosen as the management of this cyst. Internal drainage is a common method for pancreatic cysts. According to the AGA guidelines, a cyst sized > 3 cm with a dilated main pancreatic duct associated with an

increased risk of malignancy should undergo surgery to reduce the risk of mortality [13]. Cystojejunostomy to my and jejunocolos to my end to side in combination with the Roux-en-Y procedure was selected. Patel et al. (2013) reported that Roux-en-Y cystjejunostomy to my is ideal for flexible positioning of the jejunum to achieve effective dependent drainage [12]. Weledji et al. (2015) reported a persistent post-traumatic pancreatic pseudocyst of 8-year duration despite recurrent percutaneous aspiration that was finally managed by Roux-en-Y drainage [14]. This laparotomy procedure was chosen based on the anatomy topography of the cyst. Cystojejunostomy is preferred and the results are somewhat better than other procedures in internal drainage. Moreover, it has less duration and less blood loss. Cystojejunostomy and jejunocolos to my were performed on very large cyst (< 15 cm). The combination of cystojejunostomy and Roux-en-Y techniques is often performed by surgeons because of its high success rate and low risk of complications [6].

4. CONCLUSION

In conclusion, in our case report with a 14-year-old boy was diagnosed with pancreatic pseudocyst. The diagnosis was confirmed by systemic anamnesis, physical examination, and imaging examination such as USG and CT scan. Pseudocyst was identified from its characteristics. The management chosen was using Cystojejunostomy and Jejunocolostomy in combination with the Roux-en-Y procedure which has benefits for its high success rate and low-risk complication. The operation was performed without any complication.

CONSENT AND ETHICAL APPROVAL

As per university standard guidelines, participant consent and ethical approval have been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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