Recurrent of mesenteric cyst in young boy : a case report

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Abstract

Mesenteric cyst is a rare, intra-abdominal lesion that is often overlooked. Its clinical symptoms might be variable, depending on the size of the cyst and the age of the patient. Radiological examination tools, from plain x-ray to CT scan and MRI, are essential to establish its diagnosis and to plan further treatment. We reported a case of 16 years old boy who came to our hospital with complaint of enlarged stomach who was diagnosed with mesenteric cyst.

Keywords: Mesenteric cyst, intra-abdominal lesion, x-ray, USG, CT scan, MRI

1. Introduction

Mesenteric cyst is a rare, intra-abdominal lesion with an incidence of 1:100,000 in adults and 1;20,000 in children, where the cyst occurs adjacent to the mesenteries without any connection to the retroperitoneal organs. Mesenteric cyst is often overlooked, which explained the low incidence of them.[1,2]

Based on their origin, mesenteric cysts are divided into several types: lymphatic, mesothelial, enteric, urogenital, dermoid, and pseudotumor cyst. Ultrasonography (USG) is a sensitive and specific initial modality to describe the contents, wall thickness, presence of septa, and vascular flow of the cyst. Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scan examinations prove additional characteristics of the mass, such as its origin, its relationship to internal organs/surrounding organs, and other relevant information for planning of surgical treatment.[2]

This is a case report of a mesenteric cyst in a boy who was treated at our hospital. We summarize the diagnostic approaches that we used to establish the diagnosis in this patient.

2. Case Report

A 16-year-old male patient came to the emergency room of our hospital (August 24th, 2020) with chief complaint of an enlarged stomach after being hit by an elbow during pencak silat practice. He felt his stomach was getting bigger since last month. The patient had previously been admitted to another hospital (since August 4th, 2020) 10 days after the incident and was hospitalized for 10 days before being referred to our hospital. Other complaints that he had were pain at the epigastrium, nausea, and vomiting. The patient could still urinate and defecate normally. Fever and surgical history were denied.

On physical examination, the patient was fully conscious. The patient's vital signs were as follows: blood pressure was 110/70 mmHg, pulse was 88x/minute, respiratory rate (RR) was 20x/minute, temperature was 36,7^{0}C, and pain score was 7-8. Physical examination revealed an asymmetrical abdominal flank, shifting dullness to percussion, and abdominal tenderness. There was no abdominal distension or muscular defans in

the abdomen and his bowel sound was normal. There were no abnormalities in the head, cervical spine, thorax, or extremities.

The results of laboratory tests were as follows: Hb 10.9, Leukocytes 11,520, Platelet 533,000, Sodium 139, Potassium 4.6, Chloride 100, random blood glucose 69, Albumin 3.2, Blood Urea Nitrogen 11, Serum Creatinine 0.8, SGOT 42, SGPT 45, Amylase 191, Lipase 1.040.

The patient underwent plain abdominal and lateral decubitus view x-ray on September 4th, 2020. The conclusion for the x-ray examination was visible mass in the abdominal cavity at the epigastric that pushed the intestines to the left side without pneumoperotoneum nor radiopaque stones along the urinary tract (Figure 1).

The patient then underwent abdominal CT scan and visible (15 HU), septated, well-defined, regular margin intraperitoneal cystic lesion at the central epigastric region, size ±8.6x13.5x15.6 cm with a wall thickness of ±1mm, cyst and septa thickness and of ±1mm and ±3mm, respectively which after administration of contrast showed contrast enhancement on the walls and septa (71 HU0), where the cyst appeared to push the surrounding organs with clear boundaries: the stomach superiorly, the transverse colon inferiorly, the duodenum part 1 and 2 to the right, the colon splenic flexure to the left, the superior and inferior mesenteric veins anteriorly, and the pancreas and splenic veins posteriorly (Figure 2).The patient was then hospitalized and an abdominal MRI was planned to determine the next course of action.

Abdominal MRI examination result was visible unilocular cyst with well-defined and regular edges, size ±14.2x9.5x9.7 cm in the abdominal cavity, whose area included the epigastric, umbilical, hypochondria, and left lumbar region. The cyst seemed to start from the head to the body of pancreas, which appeared as hypointense on T1WI, hyperintense on T2WI, unrestricted diffusion area on diffusion-weighted imaging (DWI), which did not show contrast enhancement after contrast administration. It pushed the bowel system inferiorly and to the right, the left kidney and pancreas posteriorly, and no widening of the pancreatic duct was present (Figure 4). The patient was then diagnosed with suspected pseudocyst pancreas ec. blunt abdominal trauma and planned for a laparotomy on September 15th, 2020.

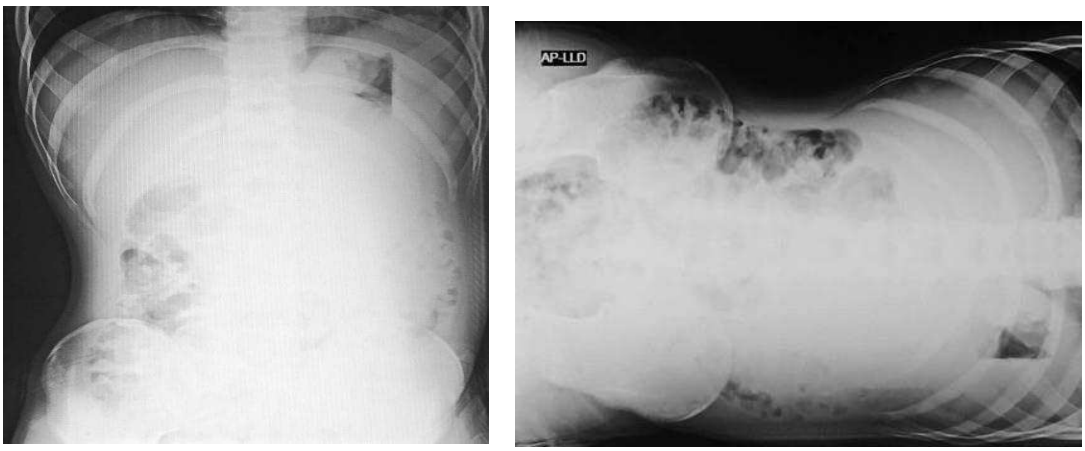

Figure 1. Plain abdominal and lateral decubitus view x-ray. Ground glass opacity is visible at the epigastric region, which pushed the bowel gas shadow to the inferior side with distribution up to the pelvic cavity.

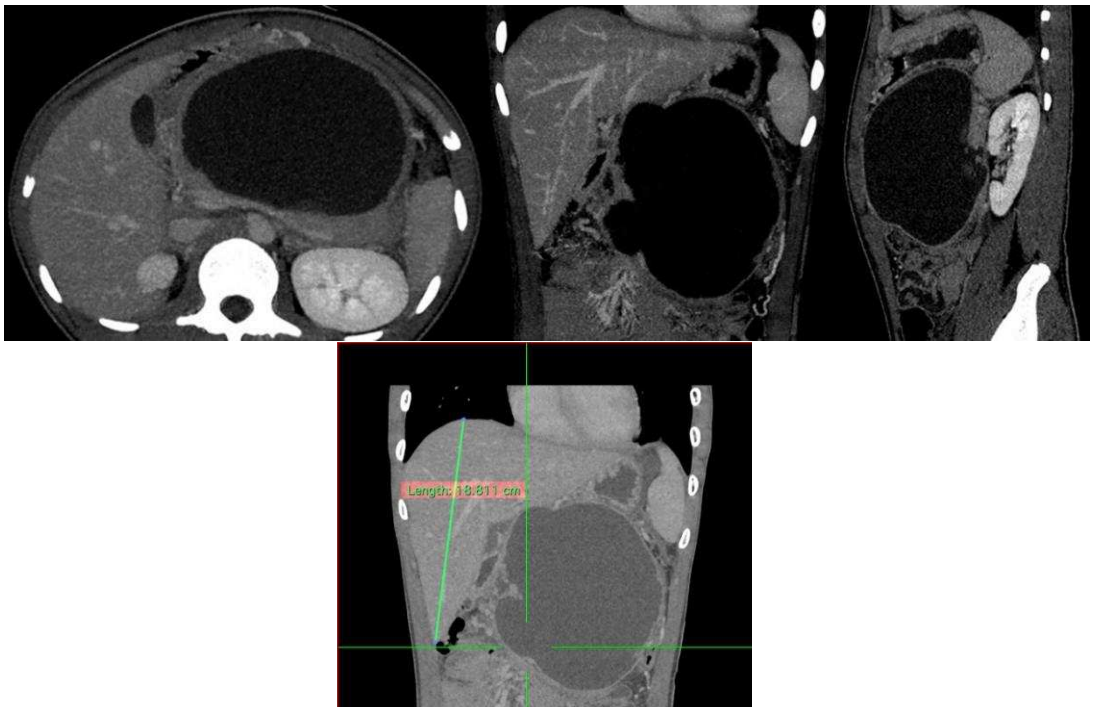

Figure 2. Abdominal CT Scan result. The findings led to suspected mesenteric cyst DD pancreatic cyst due to blunt abdominal trauma with minimal fluid collection in the pelvic cavity and hepatomegaly.

During laparotomy, an anterior abdominal mass was obtained which was superficial, cystic, intact, transparent, with thin walls. The epigastric mass was 15x10x10 cm and the cystic mass was 5x3x3 cm. The base of the cyst is the omentum (Figure 3.). The patient underwent cyst unroofing, cyst wall biopsy, and cyst fluid analysis, as well as installation of drain. The results of the biopsy and analysis of cyst fluid showed non-specific chronic inflammation.

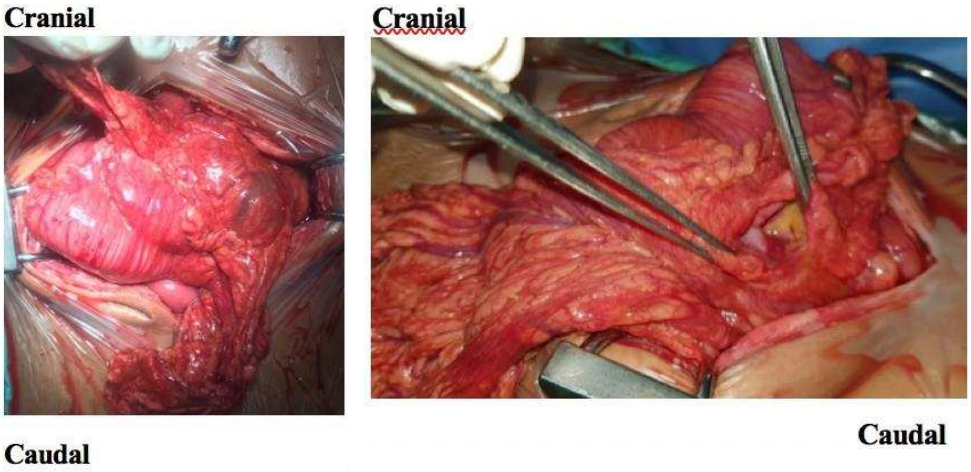

Figure 3. During operation, there is cystic epigastric mass with base of the cyst is omentum.

A few days after the surgery, the patient's abdomen appeared to be enlarged. The patient then underwent a plain abdominal x-ray on September 21st, 2020. The results of the x-ray examination showed a mass in the epigastric abdominal cavity that pushed the intestines to the left side (Figure 5). To confirm these findings, the patient underwent an abdominal ultrasound examination on the same day. Abdominal ultrasound results showed that the lesion was cystic, hypoechoic, and capsulated with well-defined and regular margins, size ±9.2x14.3x17.5 cm at the upper left abdomen region, which on color doppler ultrasound (CDUS) did not show intralesional vascularization. The lesion pressed the pancreas and v. splenic posteriorly, partially echoing the pancreatic parenchyma, and pushed the right kidney superiorly (Figure 5). The surgeon then repositioned the drain. After repositioning, the patient's condition improved and the patient was allowed to be discharged.

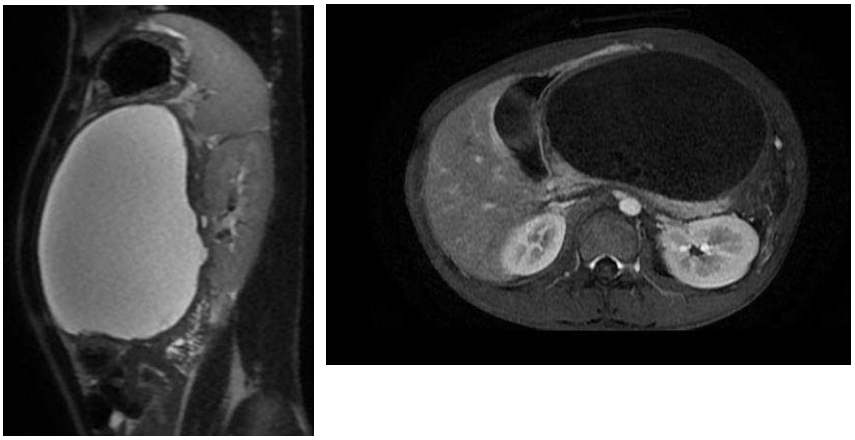

Figure 4. Abdominal MRI examination results. The findings suggested the presence of mesenteric cyst.

Figure 5. Plain abdominal x-ray after surgery. An epigastric mass was seen in the abdominal cavity that pushed the intestines to the left.

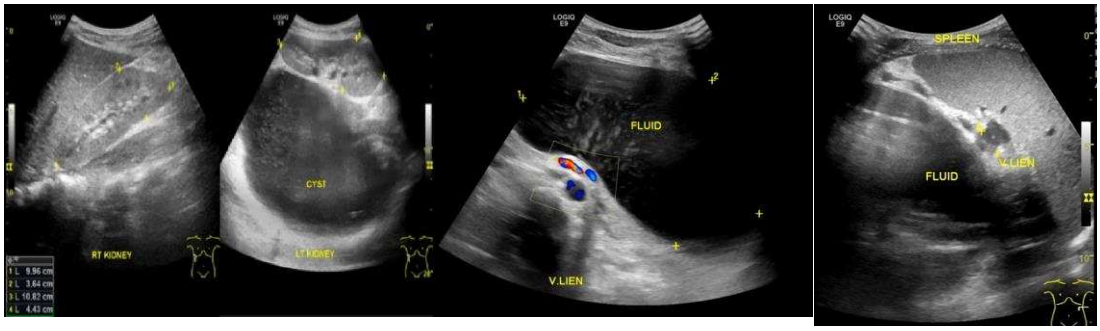

Figure 6. Abdominal USG examination results. Cystic lesion was still visible, size ±9.2x14.3x17.5 cm, causing dilatation of v. splenic ±1.1 cm, and echoparenchyma structure of the head of the pancreas was still visible

3. Discussion

In this case, a 16 years old boy came to the hospital with chief complaint of an enlarged stomach after being hit by an elbow during pencak silat practice. After further investigations, the patient was diagnosed with mesenteric cyst. In general, many authors reported that mesenteric cysts usually occur in the adult population and are mostly asymptomatic.Besides enlarged stomach, the patient also complained pain at the epigastrium, nausea, and vomiting. Physical examination also revealed an asymmetrical abdominal flank, shifting dullness to percussion, and abdominal tenderness. The size of the cyst and the age of the patient influence clinical symptoms, where children show typical acute abdominal symptoms, which might stimulate appendicitis, with various symptoms including pain (82%), nausea and vomiting (45%), constipation (72%), or diarrhea (6%). Palpable abdominal mass could be found in up to 61% of cases.[1]

Plain abdominal and lateral decubitus view x-ray results in this patient were visible ground glass opacity at the epigastric region, which pushed the bowel gas shadow to the inferior side with distribution up to the pelvic cavity. Afterwards, the patient underwent abdominal CT scan and MRI examinations, where the results suggested the presence cyst with omentum as the base. After surgery, the patient also underwent USG examination because recurrent patient's abdominal enlargement. Most USG, CT scan, and MRI results shows clear pathological findings, namely whether the cyst is a mesenteric or omental cyst, the location and size of the lesion, the presence of septa, wall thickness, cyst's content, fluid level, and debris from bleeding or hematoma. These important findings could be determined by these modalities. Ultrasonography is a sensitive and specific initial modality to describe cyst's contents, wall thickness, presence of septa, and vascular flow.[1,2] MRI and CT scans help to obtain additional findings of the mass such as its origin, determine of its extention and its relationship to internal organs/surrounding organs, and other information for surgical planning.[1–4] USG, CT scan, and MRI could estimate the location of the mesenteric cyst in most cases when the visceral organs are intact. Therefore, direct differential diagnosis for mesenteric cyst includes teratomas, smooth muscle cystic tumors, mesothelioma cysts, and various other cysts including pseudopancreatic cysts.[1,4]

In this case, the patient underwent cyst unroofing, cyst wall biopsy, and cyst fluid analysis, as well as drainase installation. Apart from malignant mesothelioma cysts, all mesenteric cysts are benign and complete excision is usually curative, although benign mesothelioma cysts and lymphangiomas have a tendency to recur if not completely resected and if there is traumatic injury history a nonpancreatic pseudocyst can be considered.

Conclusion

Mesenteric cyst is a very uncommon abdominal lesion and often overlooked, both in adults and children. Radiological diagnostic tools are essential to detect mesenteric cyst, starting from plain abdominal x-ray to more advanced tools such as abdominal USG, MRI, and CT scan.

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