SAGE Open Medical Case Reports
Volume 12: 1–6

DOI: 10.1177/2050313X241271815
journals.sagepub.com/home/sco
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Mesenteric cystic lymphangiomas in an 11-year-old female: A rare case report

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Abstract

Mesenteric cystic lymphangiomas are a rare benign abdominal malformation of lymphatic vessels, with an estimated incidence of 1 per 250,000. Clinical presentation ranges from asymptomatic masses to acute abdominal pain. Diagnostic investigation includes ultrasound, abdominal computed tomography, or magnetic resonance imaging. Complete surgical excision is the recommended treatment. We present an 11-year-old female with abdominal cramps, and a 6-month history of gradually developing distension, constipation, and polyuria, without the occurrence of vomiting. Clinical examination revealed a soft, movable, painless abdominal mass with dullness on palpation. Ultrasound showed multi-cavity cystic masses in the abdomen, and a contrast-enhanced computed tomography scan revealed a large multi-cavity cystic mass involving most of the abdomen. A complete surgical excision was performed, and microscopic examination confirmed the diagnosis of mesenteric cystic lymphangioma. This case underscores the importance of considering mesenteric cystic lymphangiomas in the differential diagnosis of abdominal masses in pediatric patients, even in rarer age groups. Imaging aids in diagnosis and surgery planning. Complete excision curbs the risk of infection and recurrences.

Keywords

Mesenteric cystic lymphangiomas, Mesenteric cystic, Lymphatic system, Case report.

Date received: 21 March 2024; accepted: 3 July 2024

Introduction

Mesenteric cystic lymphangiomas (MCLs) are an extremely rare benign abdominal malformation of the lymphatic vessels, with an estimated incidence of 1 per 250,000, They occur more frequently in boys than in girls, with a ratio of 5:2.[1,2] Almost 90% are detected by the age of 2 years, and most occur in the small bowel mesentery.[3] Thus, the occurrence of a lymphangioma in an 11-year-old female, as in our case study, is uncommon. Clinical presentation varies from asymptomatic masses to acute abdominal pain.[3,4] Diagnostic modalities such as preoperative ultrasound imaging, abdominal computed tomography (CT), or magnetic resonance imaging of the abdomen are employed.[5] In vague scenarios of intra-abdominal lymphangiomas, patients may present to the emergency room with complications such as hemorrhage and/or intestinal obstruction.[1] The recommended therapy is complete surgical excision to prevent complications such as infection or recurrence.[3,5] In this report, we present a case of an 11-year-old female who presented with chronic nonspecific abdominal symptoms, including progressive abdominal distension. MCLs were identified on CT, leading to a successful total resection of the lesion and the histopathological diagnosis confirmed MCLs.

Case presentation

An 11-year-old female was presented to the department of general surgery by her parents with abdominal cramps, a 6-month history of gradually developing distension in addition to constipation, and polyuria, without vomiting. The patient had no prior medical, familial, genetic, or surgical history. Vital signs were in normal range. The clinical examination revealed a soft, movable abdomen mass that was dull to palpable and painless. laboratory tests were performed and were in normal range (Table 1). Ultrasound demonstrated a multi-cavity formation of cystic masses within the

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Table 1. Laboratory test before surgical operation.

Test	Value	Normal range
White blood cells (mm^3)	6200	4500–10,500
Neutrophiles	43	30–50
Lymphocytes	49	30–60
Monocytes	8	2–8
Eosinophils	0	0–4
Basophils	0	0–1
Red blood cells ($10^6\mu l$)	4.72	3.5–5.5
Hemoglobin (g/dl)	13.20	12.0–16.0
Hematocrit (%)	39.00	36–46
MCV (fl)	82.6	80–100
MCH (pg)	28.0	25–35
MCHC (g/dl)	33.8	31.0–38.0
Platelet count ($10^3\mu l$)	284	150.000–400.000
Fasting glucose (mg/dl)	72.4	70–110
Creatinine (mg/dl)	0.46	0.6–1.2
Urea (mg/dl)	11.3	7–18
antistreptolysin O (IU/mL)	190.4	0.0–200.0
Echinococcus Ab (IH)	Negative	N/A

MCH: Mean corpuscular hemoglobin; MCHC: Mean corpuscular hemoglobin; MCV: Mean corpuscular volume.

abdominal cavity behind the umbilicus, extending upwards to below the chest and downwards to the bladder, pelvis, and flanks (Figure 1). CT scan with contrast revealed a large multi-cavity cystic mass involving most of the abdomen and extending into the right and left upper abdomen, with multiple scattered wall calcifications predominantly located in the mesenteric root which led to the diagnosis of a mesenteric cyst (Figure 2). Under general anesthesia, a surgical procedure was performed with the patient in the supine position. A midline incision above and below the umbilicus was made to access the abdomen. The cysts, measuring 25 cm in diameter, were identified and dissected from the adjacent organs, and the pedicle connecting it to the omentum was ligated and cut. After dissecting the mass, it was excised without any spillage of fluid into the peritoneal cavity. There were no risks to any organs. The appendix, which measured 15 cm in length, was also removed (Figure 3). The remainder of the abdominal examination was unremarkable and drains were placed in the recto-uterine pouch. The laboratory tests after surgery were within the normal range. Microscopic examination of the cysts confirmed the diagnosis of MCLs (Figure 4). The patient was administered antibiotics and analgesics postoperatively and was discharged in good condition 2 days following the surgery. A follow-up of 1 year has revealed no indications of a relapse or complication.

Discussion

MCL is a rare benign neoplasm originating from the lymphatic system. This tumor, with an incidence of 1 in 250,000, is typically observed in children, with 60% presenting at birth and 40% by the age of 1 year.[6] Therefore, the occurrence of a lymphangioma in an older child, as in our case study, is atypical. Lymphangiomas can occur throughout the body, but the most common site is usually the neck, where they are referred to as cystic hygromas. Within the abdomen, the most common site is the mesentery.[7] The exact cause of lymphangiomas is not fully understood. Theories suggest congenital malformations in the lymphatic system, including the growth and expansion of lymphatic vessels that do not properly connect to the venous system, as a possible origin. This congenital theory is supported by the predominant presentation in the early years of life. Other potential causes are thought to include, abdominal trauma, localized lymphatic degeneration, and lymphatic obstruction.[3,7] There are four identified types of intra-abdominal lymphangiomas: pedicled, sessile, retroperitoneal, and multicentric. While cystic lymphangiomas are usually asymptomatic and can reach a large size before causing symptoms, patients may eventually present with abdominal discomfort, distention, or complications such as infection, rupture, hemorrhage, or intestinal obstruction or infection.[8] The diagnosis of mesenteric lymphangioma is typically made histologically following surgical resection of the cyst, as there are no definitive blood tests to confirm the diagnosis. Radiological investigations using ultrasound or CT can confirm the presence of a mass and help exclude other causes of intra-abdominal masses, but magnetic resonance imaging (MRI) may provide more detailed information on the origin of the mass. However, Akwei et al.[7] reported that using multislice spiral CT confidently establishes a diagnosis before surgery. Given the rarity of MCLs, alternative differential diagnoses may be more probable in such cases. These include mesenteric cysts, tuberculosis, tumor metastasis, hydatid disease, bowel adenocarcinomas, Meckel's diverticulum, congenital frenum, intussusception, and other uncommon mesenteric malignancies.[2] In our case, we have ruled out other possible diagnoses through imaging and histopathological findings but the mesenteric cyst was the first of the differential diagnoses, which was confirmed by histopathological findings as MCLs. Surgical resection is considered the gold standard for treatment, especially in cases where the tumor is located in the abdomen and has the potential to grow large and cause complications. Percutaneous sclerosis suggested as a low-risk alternative therapy, may be considered for future treatments.[5] Other treatments like OK-432, bleomycin, steroids, fibrin glue, and Ethibloc have shown lower results in comparison with surgical excision. Follow-up plays a significant role in managing MCL because it can help detect any complications and recurrence.[2] In our case report, we highlight an unusual presentation of mesenteric cystic lymphangioma in an 11-year-old female, emphasizing the importance of considering this rare condition in older children presenting with abdominal symptoms.

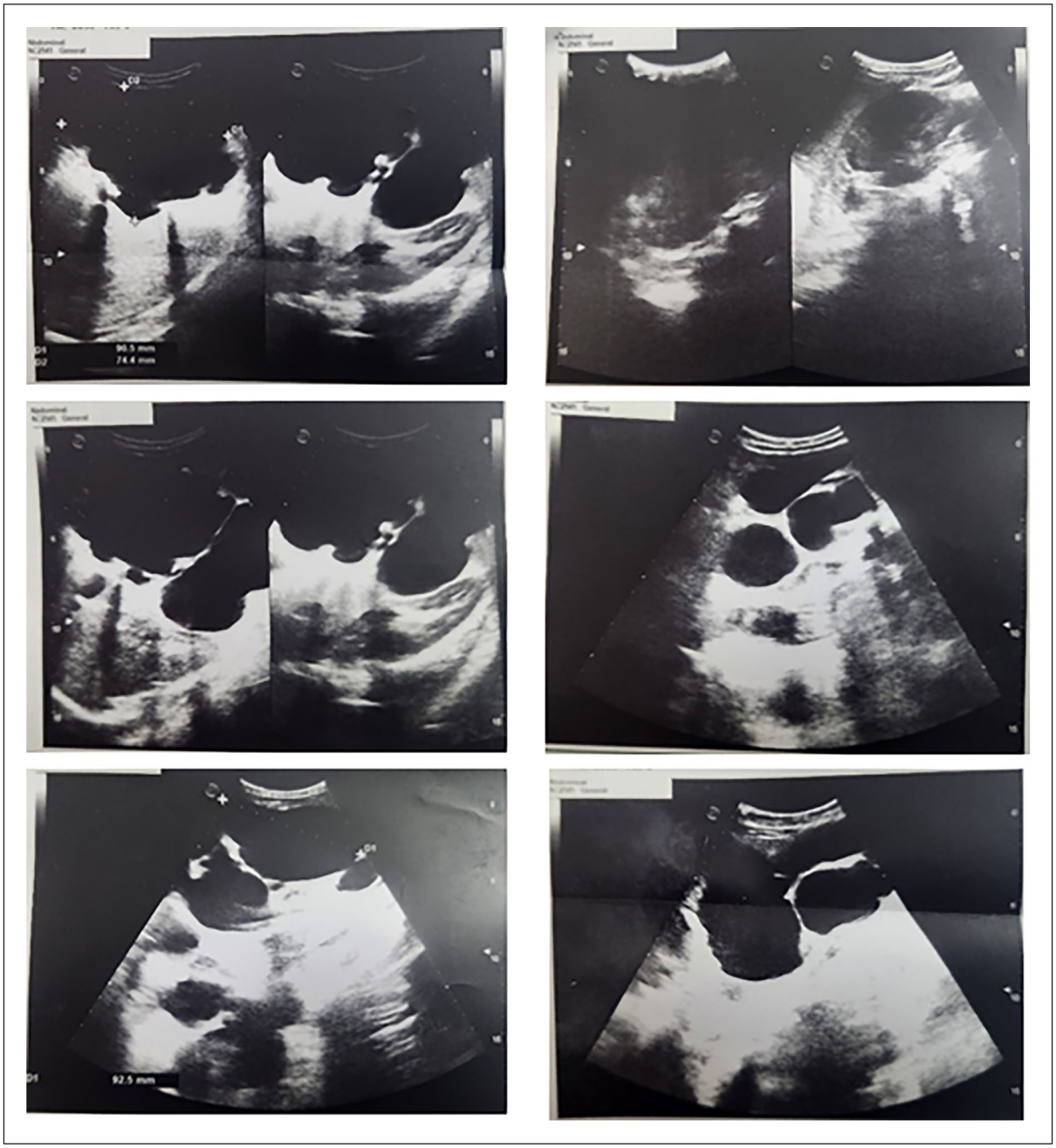

Figure 1. Ultrasound demonstrated a multicavity formation of cystic masses within the abdominal cavity behind the umbilicus, all interconnected and extending upwards below the epigastrium and downwards to the bladder with entry into the pelvis and extension to the flanks. There are no solid masses or abnormalities of the cyst walls detected. However, a thickened cyst wall is observed in some regions, accompanied by focal calcifications.

Conclusion

MCLs are exceedingly rare benign abdominal malformations, particularly in older children like our 11-year-old patient. This case underscores the importance of considering MCLs in the differential diagnosis of abdominal masses in pediatric patients, even in less common age groups. Quick diagnoses and treatment are important because they may clinically present with temporary symptoms that gradually increase in severity. Imaging studies play a crucial role in the diagnosis and preoperative planning. Complete surgical excision is curative and helps in preventing complications such as infection or recurrence. This case underscores the importance of awareness and appropriate management of MCLs in pediatric patients.

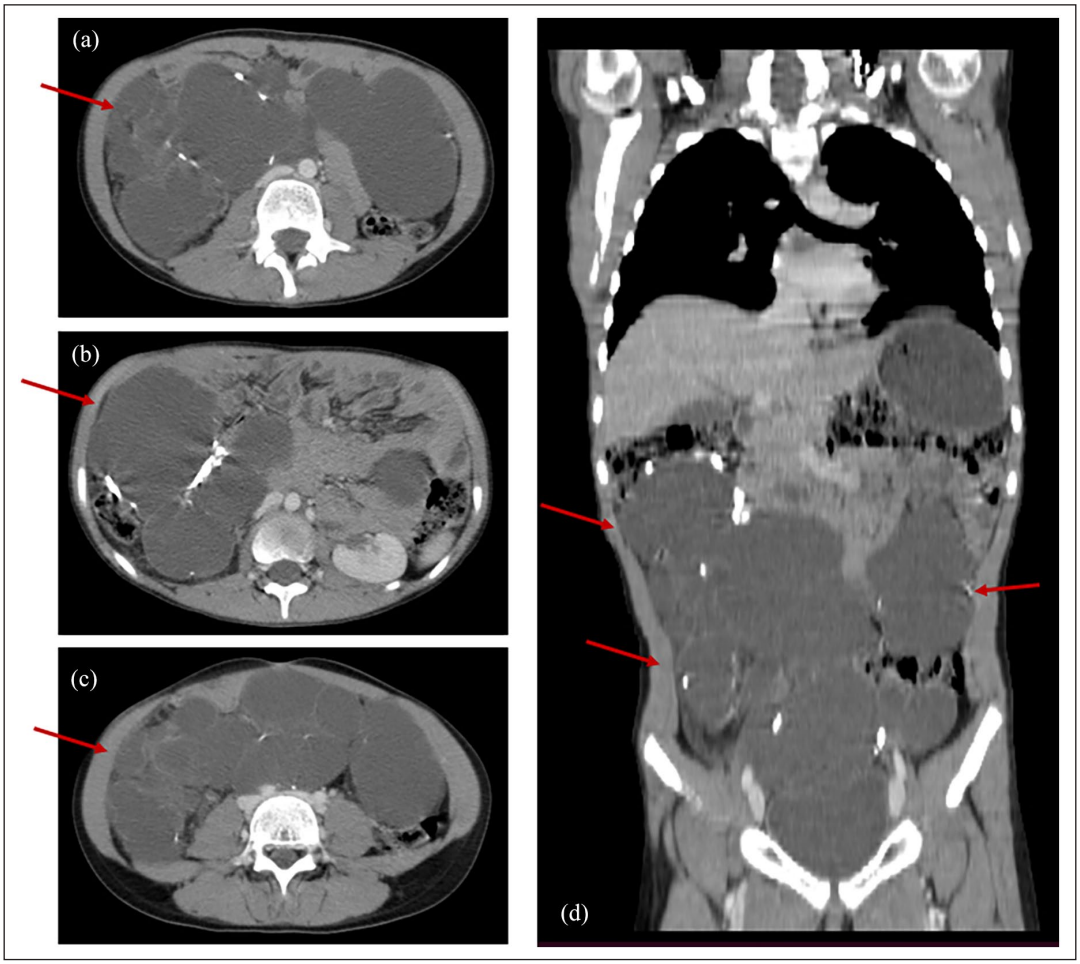

Figure 2. Computed tomography scan with contracts revealed a large multicavity cystic mass (see red arrows) involving most of the abdomen and extending into the right and left upper abdomen. (a)–(c) transversal view; (d) coronal view.

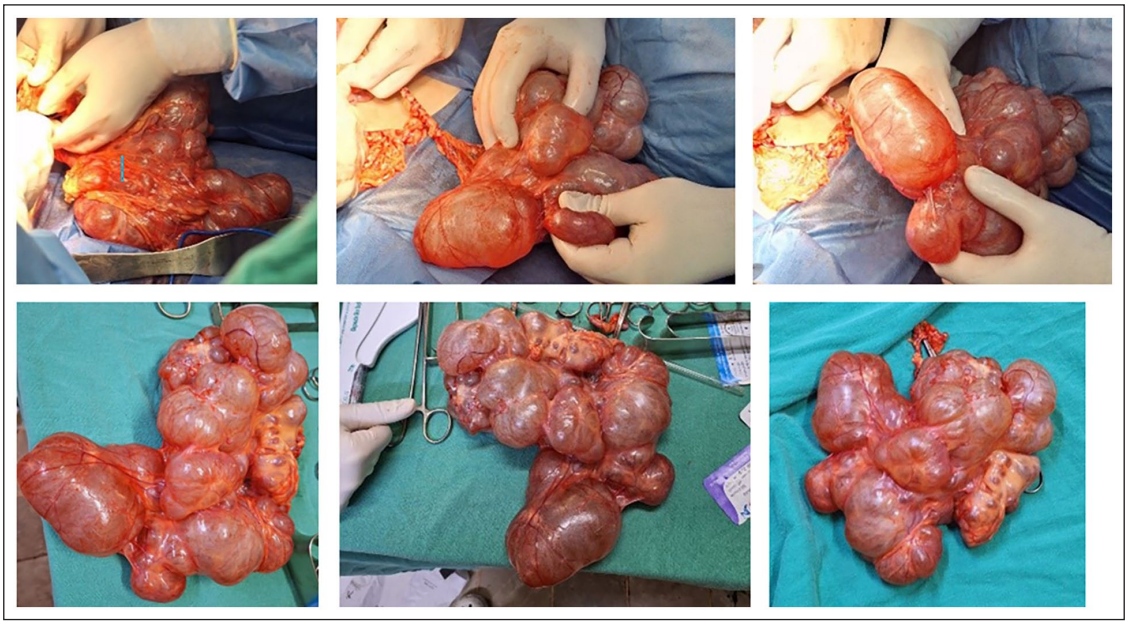

Figure 3. Intraoperative images representing large multiloculated fused cystic lesions, measuring 25 cm in diameter, originating from the small bowel mesentery.

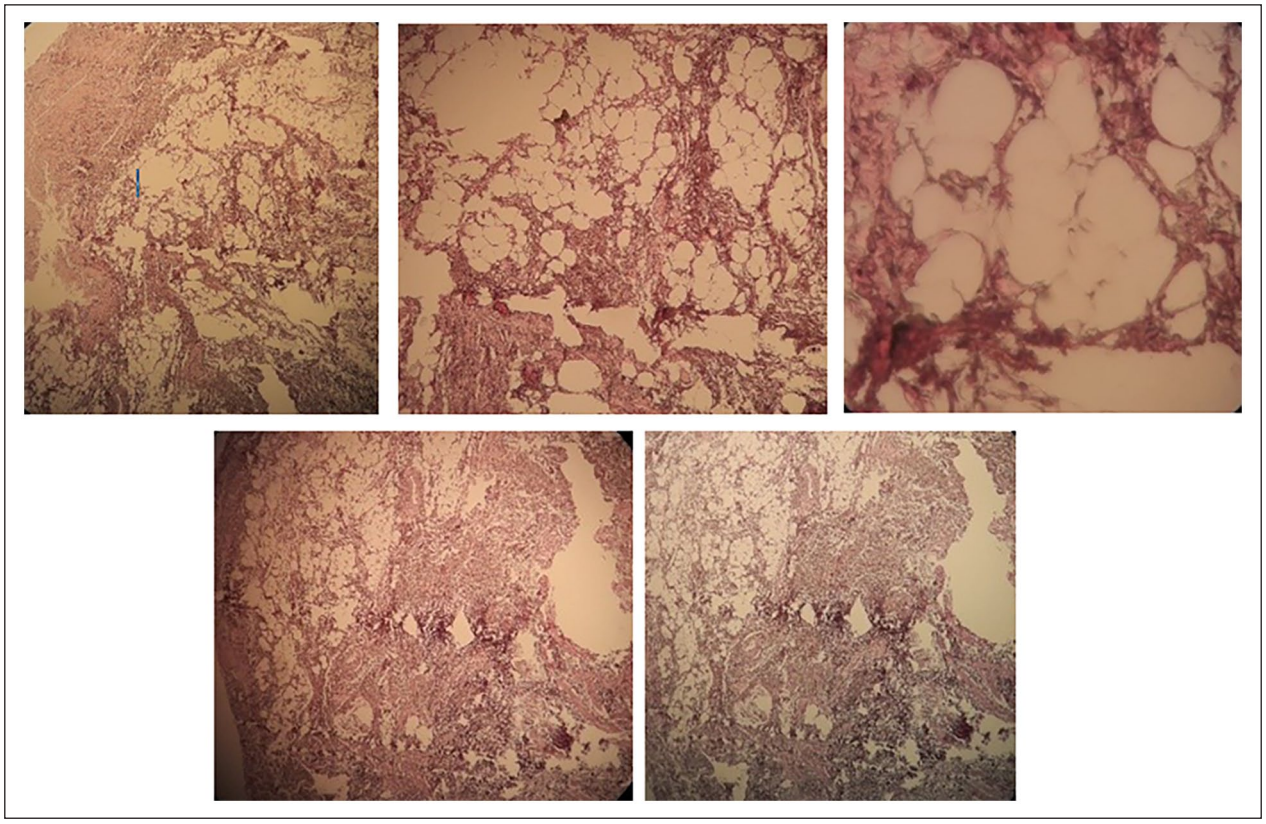

Figure 4. Microscopic examination of the serial sections showed a cystic wall that is lined by flattened endothelial cells along with a structure formed by large thick-walled vascular spaces separated by collagen fibers, adipose tissue, bundles of smooth muscle, and small accumulations of lymphocytes. There is no malignancy noted. (a)–(c) 4 × 0.1 (d) 10 × 0.25 (e) 40 × 0.65.

Acknowledgements

We sincerely thank Dr Simon Youssef, Department of Pathology, Hama National Hospital, Hama, Syria, for his great help.

Author contributions

H.A. Conceptualization, Data collection, Writing - Original Draft, Writing - Review & Editing. Y.A. Data collection, Data curation, Organization, Writing - Original Draft, Writing - Review & Editing. S.K. Investigation, Performed the Procedure, Writing - Review & Editing, Supervision.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Ethics approval

Our institution does not require ethical approval for reporting individual cases or case series.

Informed consent

Written informed consent was obtained from the patient's legally authorized representative for publication and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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