CASE REPORT

Chylous mesenteric cyst–post trauma challenge: a case report

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Abstract

Mesenteric cysts are rare intra-abdominal lesions often presenting diagnostic challenges due to their non-specific clinical manifestations. Despite its rarity, mesenteric cyst should be considered in patients with abdominal masses, especially those with a history of trauma. Diagnostic imaging, such as ultrasound and computerised tomography scan, aids in characterisation and surgical planning. Surgical excision remains the mainstay of treatment, offering favourable outcomes and reducing the risk of recurrence and malignancy. We report the case of a 15-year-old male with progressively enlarging abdominal swelling following blunt abdominal trauma, who was ultimately diagnosed with a chylous mesenteric cyst. This case underscores the importance of considering traumatic mesenteric cysts in the differential diagnosis of abdominal lesions.

Keywords: Mesenteric cyst, Trauma, Chylous, Excision.

DOI: https://doi.org/10.47391/JPMA.20968

Introduction

Mesenteric cyst is a rare group of heterogeneous cystic entity with multiple aetiopathogenesis, most of them being clinically mute.[1] The prevalence of these intra-abdominal lesions is about one in 105,000 among adults.[2] Their rarity and non-specific clinical presentation often make it difficult to diagnose. Only around 820 such cases have been reported as per the best of our knowledge,[3] demanding more clinical data so that they don't remain underdiagnosed. Surgery with complete excision of the cyst is proven to be curative without any recurrence of the disease.[4]

Case Report

A 15-year-old male presented to the outpatient department of Services Hospital, Lahore, on July 21, 2023, with progressively increasing abdominal swelling for the last five years. The swelling started soon after midline laparotomy which was done due to blunt abdominal trauma resulting in liver injury. It was associated with mild abdominal discomfort and dull aching pain. There was no history of fever, vomiting, jaundice, melaena, haematemesis, bleeding per rectum, or worm infestation. There was no family history of similar disease or any congenital anomaly. On physical examination, the patient was comfortable and vitally stable. No pallor, pedal oedema, or lymphadenopathy was seen. On abdominal examination, there was large abdominal mass extending from the pelvis to the epigastric region. The abdomen was tense and distended with positive fluid thrill, and dull note on percussion. His haematological parameters were within normal limits. Ultrasound showed that there was a large complex multiseptated mass extending from the epigastric region to the hypogastrium with no flow on Doppler. On computerised tomography of the abdomen, a lesion of about 31x14x23cm extending from the pelvis to epigastrium, i.e. T10 level, was seen, having mass effect on the adjacent organs (Figure 1). The case was then discussed with the multidisciplinary team which formulated the plan of surgical excision owing to its giant size. The patient underwent midline laparotomy with the findings of a cystic mass having solid and cystic components extending above the origin of the renal vein encasing inferior vena cava, right and left paracolic gutter extending up to the pelvis (Figure 2, 3). Complete excision of the cyst was done. Histopathological examination of the cyst confirmed it to be a chylous mesenteric cyst, with

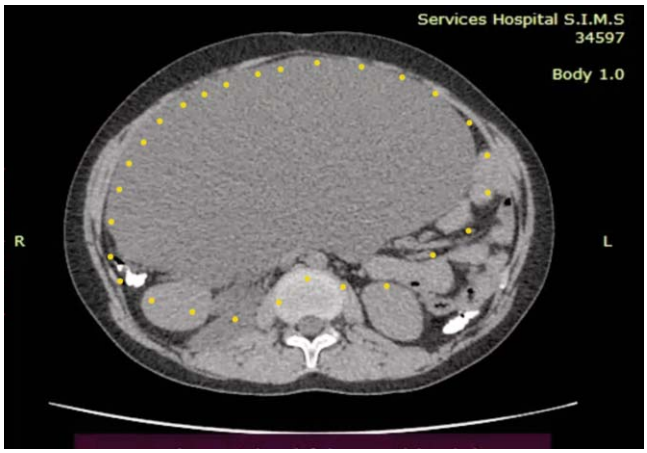

Figure-1: CT of the abdomen showing large cystic structure with obvious pressure effect on viscera.

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Submission complete: 06-07-2024 **First Revision received:** 22-10-2024
Acceptance: 21-05-2025 **Last Revision received:** 20-05-2025

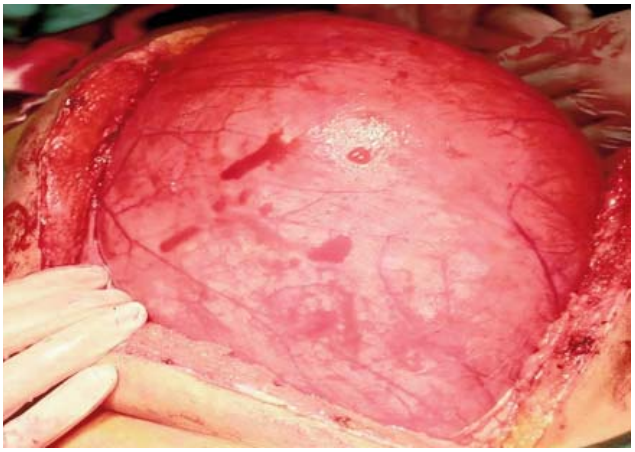

Figure-2: A large cyst occupying the whole abdominal cavity.

Figure-3: Picture of abdominal cavity after excision.

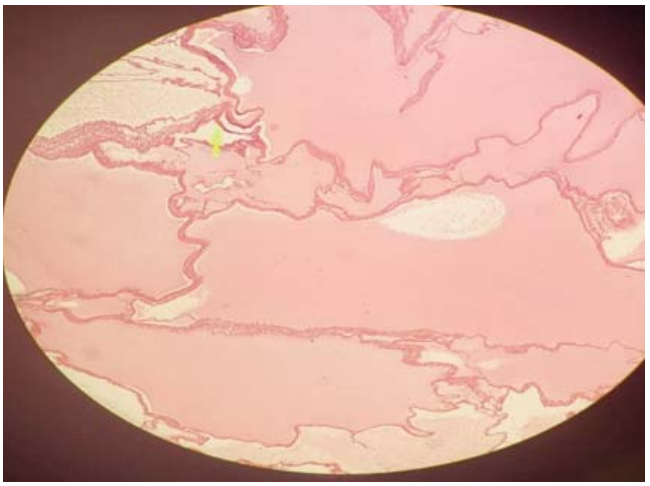

Figure-4: Histopathology of the cyst showing flattened to low cuboidal epithelium containing proteinaceous material.

no evidence of malignancy (Figure 4). Post-operatively, the patient was started on oral diet after 48 hours, and was discharged on the fifth post-operative day in a stable condition. He was followed-up in the outpatient clinic after one month, where he was doing fine with no active complaints and had a scaphoid abdomen.

Discussion

All cystic and pseudo cystic lesions originating from the mesentery, retro-peritoneum and omentum are referred to as mesenteric cysts.[5] Their classification, based on their aetiology and pathology, includes the following six types: cyst of lymphatic origin, mesothelial origin, urogenital origin, enteric origin, mature cystic teratoma, and pseudocysts.[4] There are multiple theories describing the causes of development of mesenteric cyst, such as congenital malformation of lymphatic vessels, history of abdominal trauma or surgery, failure of fusion of mesentery leaves, and pelvic pathologies.[6] Most of the literature reviewed about mesenteric cyst lacks history of abdominal trauma except a few which help in keeping traumatic mesenteric cyst as a leading differential diagnosis.[5] The cyst presents with non-specific symptoms mostly due to its mass effect but it may lead to complications like torsion, rupture, peritonitis, and malignancy. Pre-operative diagnosis of such cysts is difficult, ultrasound being the first investigation for suspected abdominal mass, which shows well-defined cystic lesion with fluid-fluid level with mass effect on surrounding visceras.[7] Computerised Tomography, being a step forward, allows complete assessment of the size and its relation to the surrounding structures.[7] Cyst excision has better prognostic value as compared to de-roofing, marsupialization, and drainage of the cyst as it evades the chances of recurrence and malignancy.[2] For the purpose of excision, laparoscopy can be done in cases of smaller tumours.[8] But for larger cysts, open laparotomy with atraumatic separation of the cyst from adjacent mesentery is preferred. Cases of adherent cyst may require resection of adjacent organs, mostly bowel.[7] Hence, the choice of procedure should depend on the type of cyst, its size, adherence to other structures, and the patient's condition.[3] Conservative management has a limited role in this regard due to its expanding size and chances of being malignant.[5]

Conclusion

This case report emphasize that traumatic mesenteric cysts should be included in differential diagnosis of the progressively growing masses in the abdomen particularly when history of previous abdominal surgery or trauma is given. Our patient developed a large chylous mesenteric cyst after laparotomy for liver trauma, thereby highlighting the potential link between trauma and cyst formation. Ultrasound and CT scan served as the

important preoperative tools for assessment and definitive diagnosis was made only on histopathology. Total resection by open laparotomy resulted in excellent postoperative recovery without recurrence. Timely surgical intervention remains crucial in managing such giant cysts to prevent potential complications and to ensure favourable outcomes.

Acknowledgement: All authors attest that they meet the current ICMJE criteria for authorship.

Disclaimer: Assent from both parents was taken for reporting the case.

Conflict of Interest: The person who signed the Institutional Review Board is also a co-author of the manuscript, as he is also our head of department.

Source of Funding: None to declare.

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AUTHOR'S CONTRIBUTION:
AG: Drafting and literature review.
MNR: Idea, literature review, drafting, data keep and surgical team.
MBC: Literature review, drafting and patient management.
NUB: Operating team.
AR: Surgical team and pre and post OP management.
MWF: Team lead and supervision.