Case Report

A decompressing abdominal mass and its outcome in a child-case report

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ABSTRACT

Introduction: Mesenteric cysts are benign tumours occurring in both adults as well as in children; can be single or multiple, unilocular or multilocular.

Importance: Pure chylous cysts as presenting as decompressing mass are rarely reported so far.

Case presentation: A 2-year old male child presenting with vague fullness of the abdomen and occasional vomiting since 7 months of age, on imaging studies revealed it to be giant mesenteric cyst.

Clinical discussion: Chylous cysts are rare variants of mesenteric cysts with an incidence of 7.3–9.9% in general population.

Conclusion: The clinician should have high index of suspicion for a possible chylous mesenteric cyst for a clinically decompressing abdominal cyst which should be explored promptly.

1. Introduction

The exact etiopathogenesis of mesenteric cyst is unknown, can occur anywhere in the mesentery of the gastrointestinal tract, with an overall incidence of 1:100,000 in adults and in 1:200,000 in children. The pure chylous cysts are rarely reported in children.

1.1. Case summary

A two year old male child was brought to us with history of pain abdomen and occasional non bilious vomiting since 7 months of age, associated with vague fullness of abdomen especially after fatty diet. Born by full term vaginal delivery with a birth weight of 2.6kg had uneventful perinatal as well as infantile period.

His admission weight was 8kg and sonography and contrast enhanced computer tomography (CECT) which showed thin walled giant multilocular cyst of size 8cm and 10cm in its largest dimensions from the mesentery (Fig. 1A). When his scaphoid abdomen was opened, cyst was not easily assessable or palpated having the small bowel and colonic loops collapsed and normal. On careful search a small multilobed cyst of 5cm in the jejunal mesentery containing chyle; decompressed and associated jejunum 10cm was excised and end to end anastomosis of jejunum was done (Fig. 1B and C,D). Child recovered well. Histopathology revealed it as chylous cyst lined by flattened epithelial cells arising from the jejunal mesentery having fibrous tissue and congested vessels in its wall (Fig. 2E,F,G,H). Chylous fluid showed a fat content of 3.2 g/dL, a protein content of approximately 3 g/dL and a pH of 7.6 with a specific gravity of 1.020 g/dL.

2. Discussion

Chyle is a milky body fluid consisting of lymph, emulsified fats, or free fatty acids formed in the small intestine during digestion of fatty foods and absorbed by lymph vessels known as lacteals. The lipids in the chyle are colloidally suspended in chylomicrons. Although some free fatty acids enter the blood capillaries, chylomicrons are too large to penetrate the endothelium, hence are taken up instead by the more porous lacteals into the lymph. This fatty, milk-white intestinal lymph, called chyle, flows through larger and larger lymphatic vessels of the mesenteries, eventually passing through the cisterna chyli which lies in front of first and second lumbar vertebrae draining into the thoracic duct, which carries lymph from thoracic cavity and hence eventually entering the bloodstream at the left subclavian vein. Hence disruption of these lymphatic pathways results in chylothorax and chylous ascites [1, 2].

Chylous cysts are benign proliferations of lymph vessels which result from an obstruction in the lymphatic system, accounting for 3%–9.2% of all paediatric lymphangiommas [1, 2].

The presenting symptoms can be abdominal pain, nausea, vomiting, and anorexia; however, most commonly they are asymptomatic and are detected incidentally on physical examination or by imaging studies. These lesions can occasionally cause complications, including intestinal

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1 Concept and designed the study, analyzed data and drafted the manuscript; collected the data and data analysis and the operating surgeon.

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obstruction, volvulus, or even torsion [1, 2].

As per Beahrs et al.’s etiological classification; mesenteric cysts can be classified into embryonic/developmental, traumatic/acquired, neoplastic, and infective/degenerative.

Classification based on pathological classification includes; type 1 (pedicled) and type 2 (sessile) cysts, which are restricted to the mesentery, could be excised completely with or without resection of the involved bowel, whereas types 3 and 4 (multicentric) cysts extends into the retroperitoneum and require complex operations often requiring sclerotherapy as well [3, 4].

Based on their content, they are described as serous, chylous, hemorrhagic, chylolymphatic, or infected.

Various surgical approaches have been attempted, like, marsupialization, sclerotherapy, drainage, enucleation, percutaneous aspiration, and excision of the cyst with or without resection of the involved bowel. But due to high rates of recurrence with marsupialization and drainage, complete excision of the cyst is recommended whenever possible [3, 4].

Author had a 2 year old male child presenting with vague fullness of the abdomen. He was diagnosed with a giant chylous cyst arising from the jejunal mesentery.

Fig. 1. A- CECT – sagittal section showing giant chylous cyst occupying the major part of the abdomen. B-decompressing chylous cyst containing milky fluid in it during laparotomy C-opened up chylous cyst with chyle spillage D- Multi lobar chylous cyst arising from jejunal mesentery.

Fig. 2. Histopathological images- 10X Low power view.

E and F— Chylous cyst arising from the jejunal mesentry.

G and H— Chylous cyst lined by flattened epithelium with having fibrous wall with minimal inflammatory cells and congested blood vessels.

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The abdomen along with non-bilious occasional vomiting since 7 months of age, evaluated with imaging studies revealed it to be giant mesenteric cyst, however on exploration only small pure chylous cyst of size around 5 cm was noticed in the upper jejunum, which was excised along with 10 cm of jejunum and end to end anastomosis done. Child had uneventful recovery.

Chyle is often clear or straw coloured on starvation, however becomes milky following ingestion of a fatty meal and milk in children. Therefore the content of the chyle was milky on surgical exploration after 4 hours of milk, in our child and is also the possible reason for its decompression due to starvation.

Though chylolymphatic cysts are common in children as well as in adults; the existence of pure chylous cysts has not been reported in the literature so far.

Few cases of Disappearing abdominal cyst have been reported in adults, however here is a rare report of decompressing abdominal pure chylous cyst, decompressed possibly due fat free diet to starvation required for anaesthesia and surgery [3,4].

3. Conclusion

The attending clinician should have high index of suspicion for a possible chylous mesenteric cyst for a clinically decompressing abdominal cyst which should be explored promptly for the definitive diagnosis as well as for its successful management without morbidity.

Ethical clearance obtained

* Disclosure of potential conflicts of interest—none.
* Research involving human participants and/or animals—NIL.
* Informed consent—OBTAIED FROM PARENTS.

Financial interest—Nil.

Written and verbal consent HAS been obtained from PARENTS

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NOT REQUIRED.

Research registration Unique Identifying number (UIN)

1. Name of the registry: not yet
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3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

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Author contribution

DR JAYALAXMI SHRIPATI AIHOLE HAS CONTRIBUTED TO THE ARTICLE WITHOUT ANY KIND OF FINANCIAL ASSISTENCE OR WRITING SUPPORT

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amsu.2022.104065.

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