

## Giant omental cyst: Laparoscopically managed

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### ABSTRACT

Omental and mesenteric cysts are rare intra-abdominal pathology in children. Children with these pathologies mostly present with abdominal distension with or without palpable abdominal mass. It can mimic ascites, gross hydronephrosis, abdominal tuberculosis, etc. The preferred treatment of choice is complete excision. We present a case of a 6-year-old child with gradually increasing abdominal distension with suspicion of the mesenteric cyst. The laparoscopic intervention was done, which led to the correct diagnosis, that is, giant omental cyst. Histopathology was suggestive of cystic lymphangioma.

**Key words:** Ascites, Lymphangioma, Mesenteric cyst, Omental cyst

Omental and mesenteric cysts are rare intra-abdominal masses in the pediatric population, with an incidence of about 1/20,000 admissions to pediatric hospitals [1]. Of these two, an omental cyst constitutes only 2.2%. The patients usually present with painless abdominal distension or as an acute abdomen condition. They are classified into four groups: Embryological (developmental), infective, traumatic, and neoplastic [2]. Cystic lymphangioma is the most common cause of these cysts.

### CASE REPORT

A 6-year-old male child presented with gradually increasing painless abdominal distension for 3 months. Distension was mainly on the left side of the abdomen. The boy was otherwise healthy, with no loss of weight or appetite.

Clinical examination showed a large, soft, non-tender lump in the left side of the abdomen, and dull on percussion. Differential diagnoses of hydronephrosis, mesenteric cyst, omental cyst, and the splenic cyst were kept in mind.


Ultrasound (USG) was suggestive of large cystic, loculated collection occupying abdomen and pelvis. Contrast-enhanced computed tomography (CECT) showed a large (8.2 cm × 11 cm × 18 cm) well-defined cystic lesion occupying the left side of the abdomen, extending into the left iliac fossa and pelvic cavity, and indenting upon the urinary bladder with suspicion of a large mesenteric cyst (Fig. 1). USG-guided aspiration of fluid was done which showed light-yellow color fluid

with few mesothelial cells and lymphocytes on the hemorrhagic background but no significant cytological or laboratory findings. Complete blood count, liver transaminases, albumin, and renal functions were within normal limits.

The patient was planned for laparoscopy. Under general anesthesia, a nasogastric tube and Foley catheter were inserted. The patient was placed supine and in a reverse Trendelenburg position. Under aseptic technique, a 10 mm camera port was inserted through an umbilical incision under direct vision. The intra-abdominal pressure with carbon dioxide was maintained between 10 and 12 mmHg. Intra-operative laparoscopy showed a huge lobulated cystic lesion. Due to its huge size, we were unable to determine the origin of the lesion until around 500 ml of light straw-colored fluid was aspirated without spillage.

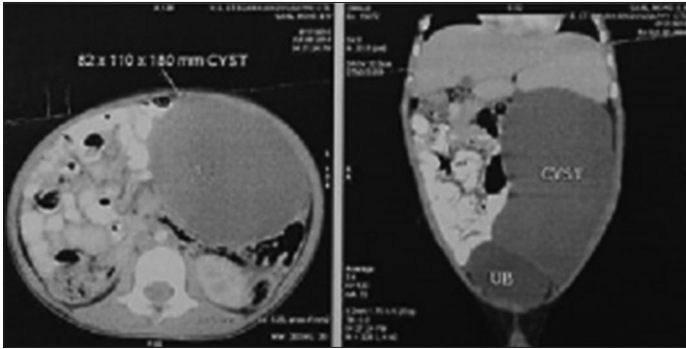
Two additional ports of 5 mm were placed at the epigastric area and the left upper quadrant in the midclavicular line, 5 cm from the costal margin. It was identified that the cyst originated from the greater omentum adhering to the stomach and the splenic flexure of colon transverse colon (Fig. 2). After mobilization and dissection of the cyst from the surrounding intra-abdominal structures, the collapsed cyst was extracted out from the abdominal cavity through the umbilical incision. Complete excision of the omental cyst was done. Microscopic examination was suggestive of cystic lymphangioma.

The patient was allowed orally 6 hours postoperatively; the child tolerated the feeds and was discharged on post-operative day 2. He remained well and was seen at the out-patient clinic 2 weeks later with no further issues and the patient is asymptomatic at a 1-year follow-up.

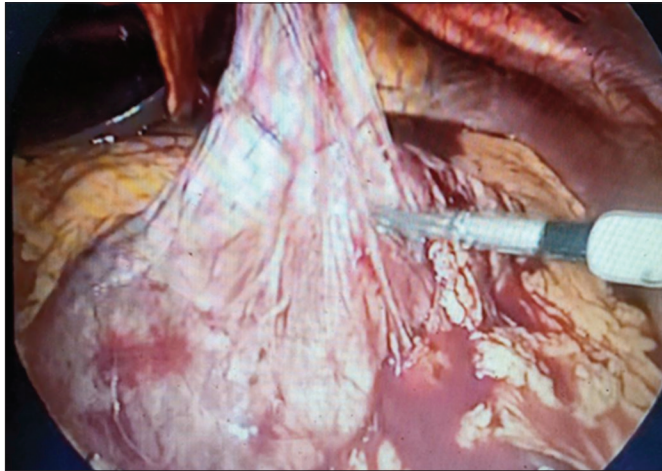
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**Figure 1:** Contrast-enhanced computed tomography showing a large cyst



**Figure 2:** Intraoperative omental cyst

## DISCUSSION

Omental cysts are rare intra-abdominal pathology, mostly derived from the lymphatic tissue. Grairdner reported the first report of an omental cyst, which was one third as common as a mesenteric cyst in 1852 [3]. In most reported cases, males are more predominantly affected than females (M:F = 3.5:1) because of the higher accumulation of omental fat [4].

Omental cysts are thought to represent the benign proliferation of ectopic lymphatics that lack communication with the normal lymphatic system. Other etiologies have been discussed regarding the causes of these cysts, including the benign proliferation of mesenteric lymphatics, a failed fusion of the mesenteric leaves, and deficiency of the normal lymphatic-venous shunts [5-7]. Omental cysts can be simple or multiple, unilocular, or multilocular, and they may contain hemorrhagic, serous, chylous, or infected fluid [8]. These cysts can be discovered as an incidental finding during laparotomy for another condition, or they can manifest as an acute or chronic abdomen.

The most common mode of acute presentation is that of small-bowel obstruction, which may be associated with intestinal volvulus [9] or infarction, hemorrhage into the cyst, infection, rupture, cystic torsion, and obstruction of the urinary and biliary tract. Chronic symptoms include progressive abdominal distension and pain. The mass may be huge, mimicking ascites [10].

The initial investigation includes abdomen ultrasonography which shows the cystic structure, filled with fluid and mostly

multilocular with internal echoes sometimes. CECT scan further delineates the origin and the nature of the mass. Most cysts are developmental in origin and are related to a congenital abnormality of the lymphatic system. Lymphangioma is the most common cause of these cysts [6,7].

The first complete laparoscopic excision of a mesenteric cyst was described by Mackenzie in 1993 [8]. It can be difficult to dissect omental cysts safely in some cases from surrounding tissues without bowel or vessel injury because of wide attachment of stalk of the omentum to the cyst, which can lead to serious bleeding and injuries to the stomach or intestines during dissection. Gupta *et al.* (2012) reported a similar case in a 7-year-old female child with laparoscopic removal of a huge omental cyst using a two-port technique [11]. Shukr *et al.* also reported a case of a 2-year-old female child with increasing abdomen distension and no confirmatory diagnosis, managed laparoscopically using three ports, and a hitch stitch [12].

There are only about 100 cases reported in the literature to date [13], one-third of which occur in children younger than 15 years [14,15], along with a limited number of reported pediatric cases using laparoscopic/laparoscopy-assisted surgery. Based on the literature review, a total of 16 cases were managed through minimal invasive surgery. In our case, as we aspirated the cystic fluid before the laparoscopic mobilization and excision, we managed to achieve a complete excision laparoscopically. Worldwide, in about 10% of the cases, complete excision is not feasible. The overall treatment outcome of the omental cyst is favorable, with a reported recurrence rate from 0% to 13.6% [14].

## CONCLUSION

The preferred treatment of an omental cyst is complete excision; either laparoscopically or open surgery. Aspirating the cyst before laparoscopic mobilization ensures that a huge cyst becomes easily manageable. Resection of the bowel rarely needed and recurrence is rare. Malignant transformation of cystic lesions is also rare. Laparoscopic management has the advantages of short hospital stay, decreased morbidity, and better cosmesis compared to open surgery.

## REFERENCES

1. Ricketts RR. Mesenteric and omental cysts. In: Coran AG, Adzick NS, Krummel TM, Laberge JM, Shamberger RC, editors. *Pediatric Surgery*. 7<sup>th</sup> ed. Philadelphia, PA: Saunders Elsevier; 2012. p. 1165-70.
2. Beahrs OH, Judd ES, Docherty MB. Chylous cysts of the abdomen. *Surg Clin North Am* 1950;30:1081-96.
3. Vanek VW, Phillips AK. Retroperitoneal, mesenteric, and omental cysts. *Arch Surg* 1984;119:838-42.
4. Lin JI, Fisher J, Caty MG. Newborn intraabdominal cystic lymphatic malformations. *Semin Pediatr Surg* 2000;9:141-5.
5. Pampal A, Yagmurlu A. Successful laparoscopic removal of mesenteric and omental cysts in toddlers: 3 cases with a literature review. *J Pediatr Surg* 2012;47:e5-8.
6. Adikibi BT, Wood R, Pillay K, Millar AJ. Omental cyst presenting with profound anaemia. *Afr J Paediatr Surg* 2013;10:180-4.
7. Motie MR, Asadi M. Large omental cyst: A case report and review of the literature. *Acta Med Iran* 2011;49:690-3.

8. Egozi EI, Ricketts RR. Mesenteric and omental cysts in children. *Am Surg* 1997;63:287-90.
9. Lam FC, Fan TW, Chan KF, Leung YW, Chao NS. Omental lymphangioma with torsion: Case report. *J HK Coll Radiol* 2005;8:49-52.
10. Karaosmanoğlu D, Suna OO, Cem Y, Hakan O. Huge omental cyst simulating ascites. *Eur J Radiol Extra* 2005;54:55-7.
11. Gupta RK, Kothari P, Gupta A, Ranjan R, Keshan KK, Mudkhedkar K, *et al.* Laparoscopic management of omental cyst in a child using two ports technique: A case report and review of relevant literature. *J Minim Invasive Surg Sci* 2012;3:111-5.
12. Aziz A, Anita A, Fitri SM, Hana A. Laparoscopic excision of huge omental cyst in children. *Med Res Arch* 2014;4:213-5.
13. Tillaux P. Cyst du mesentere un home: Ablation par la gastromie: Quersion. *Rev Ther Med Chir* 1880;47:479.
14. Brentano L, Faccini P, Oderich GS. Laparoscopic resection of a mesenteric cyst. *Surg Laparosc Endosc* 1998;8:402-3.
15. Kurtz RJ, Heimann TM, Holt J, Beck AR. Mesenteric and retroperitoneal cysts. *Ann Surg* 1986;203:109-12.

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