



Giant mesenteric lipoma: A case report and a review of the literature

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ABSTRACT

Mesenteric lipoma is a rare benign tumor of mature fat cells. Although generally asymptomatic, it occasionally causes abdominal pain, ileus, and small bowel volvulus, depending on its location and size. A definitive diagnosis can be made by pathological examination. Ultrasonography and abdominal computed tomography show this lesion as a well-defined, homogenous mass with fat density surrounded by a thin capsule. Because of its rare etiologic origin, we report the case of a 2-year-old male presented with progressive abdominal distension and failure to thrive, found to be caused by a mesenteric lipoma.

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Lipomas presenting in childhood can be superficial or deep. Deep-seated lipomas can originate from the thorax, chest wall, mediastinum, pleura, pelvis, retroperitoneum, paratesticular area and, very rarely, the bowel mesentery [1–3]. As long as the bowel allows passage, mesenteric lipomas often do not cause gastrointestinal symptoms [4,5]. However, a few can cause symptoms consistent with a partial bowel obstruction, such as intermittent abdominal pain, abdominal distention, and vomiting, with very few resulting in intestinal volvulus or complete intestinal obstruction due to torsion [6]. We report a 2-year-old male who presented with abdominal distension and constipation and review the features of children with mesenteric lipomas.

1. Case report

A 2-year-old male presented to our hospital with weight stagnation and increased abdominal girth of 1 year duration. The patient was doing well till the age of 1 year when his mother started to notice weight stagnation, increased abdominal girth, and frequent bowel movements associated with good appetite. Symptoms were not associated with vomiting, irritability or recurrent infections.

He was born by Cesarean section (due to failure of descent), at 38 weeks of gestation, to a G5P3A2L3 mother with smooth course of pregnancy. His birth weight was 3.3 kg and he was having a completely normal developmental history.

Patient was hospitalized at another hospital for workup at the age of 1 year. Investigations revealed negative serologic markers for Celiac disease; Gastroscopy with jejunal biopsy showed atrophic mucosa of duodenum suggestive of malabsorption and Celiac disease, and patient started on gluten free diet. However the patient persisted to have weight loss and increase in the abdominal girth so he was referred to our hospital.

Upon admission, his weight was 10 kg (below 5th percentile). Physical examination revealed that he was a cachectic child, with muscle wasting, and markedly protuberant abdomen with a soft, mobile not tender mass (Fig. 1).

The laboratory tests results were all normal. Abdominal radiography demonstrated mostly gasless abdomen and was suggestive of soft tissue mass (Fig. 2). Abdominal ultrasound showed a mass with the following characteristics:

- Huge with a diameter of 17 × 11 × 16 cm; 1565 cc
- Multilobular, smooth, well delineated, anterior mass
- Intraperitoneal, of bright echogenicity (fatty)
- Homogenous, not calcified, hypovascular revealing numerous linear echogenic bandsevolving fibrous septae dividing it into multiple compartments.

The mass was pushing the stomach and duodenum posteriorly, and bowels to the upper and lower right and left quadrants with minimal surrounding ascitic fluid. The mass had the appearance of benign congenital neoplasm suggestive of “very large lipoma.”

CT of the abdomen revealed a 20 × 10 × 10 cm well encapsulated fatty mass in the mesentery resulting in crowding of the mesenteric

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Fig. 1. Cachectic child, muscle wasting of upper and lower limbs and abdominal distension.

structures. The picture was most consistent with a lipoma (Fig. 3). Exploration of the abdomen by midline laparotomy revealed a large mesenteric mass with small bowel loop (short segment of the ileum) involved in it. The mass and small bowel loop were excised and an end to end anastomosis of a small part of the intestine. The mass was completely encapsulated and there was no necrosis, hemorrhage or any complication. The mass measured $22 \times 19 \times 9$ cm, weighting 1620 g (Fig. 4). The pathology showed a yellow lobulated cut surface consistent with benign lipoma (Fig. 5).

The postoperative period was uneventful, and the patient was discharged on the sixth postoperative day. Upon follow up, the patient gained 5 kg during a period of 6 months after surgery (Fig. 6).

2. Discussion

Mesenteric lipoma is an unusual entity that is most often found in adults between 40 and 60 years of age and rarely occurs in the first decade of life, with fewer than 50 pediatric cases reported [2]. Lipomas are the most common soft tissue tumors. Lipomas can be single or multiple and superficially or deeply localized. In children, lipomas occasionally develop superficially or in the trunk. Deep lipomas can be localized in the thorax, mediastinum, thoracic wall, pleura, pelvis, retroperitoneum, and paratesticular area, but they rarely originate in the intestinal mesentery in children. Lipomas have an increased incidence in people with obesity, diabetes mellitus, elevated cholesterol level, familial tendency, trauma, radiation therapy, or chromosomal translocation [2].

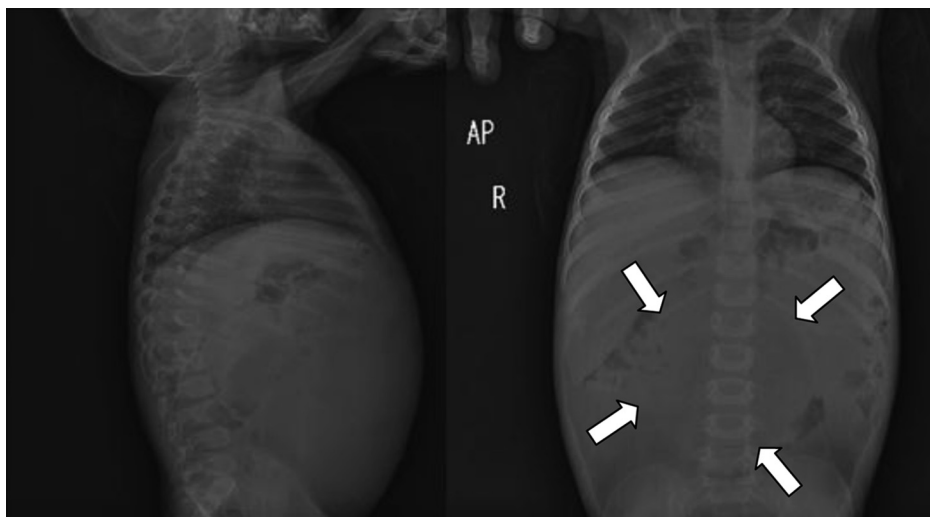


Fig. 2. Abdominal radiography demonstrated a large soft tissue mass in the abdomen distinct from the spleen and the liver.

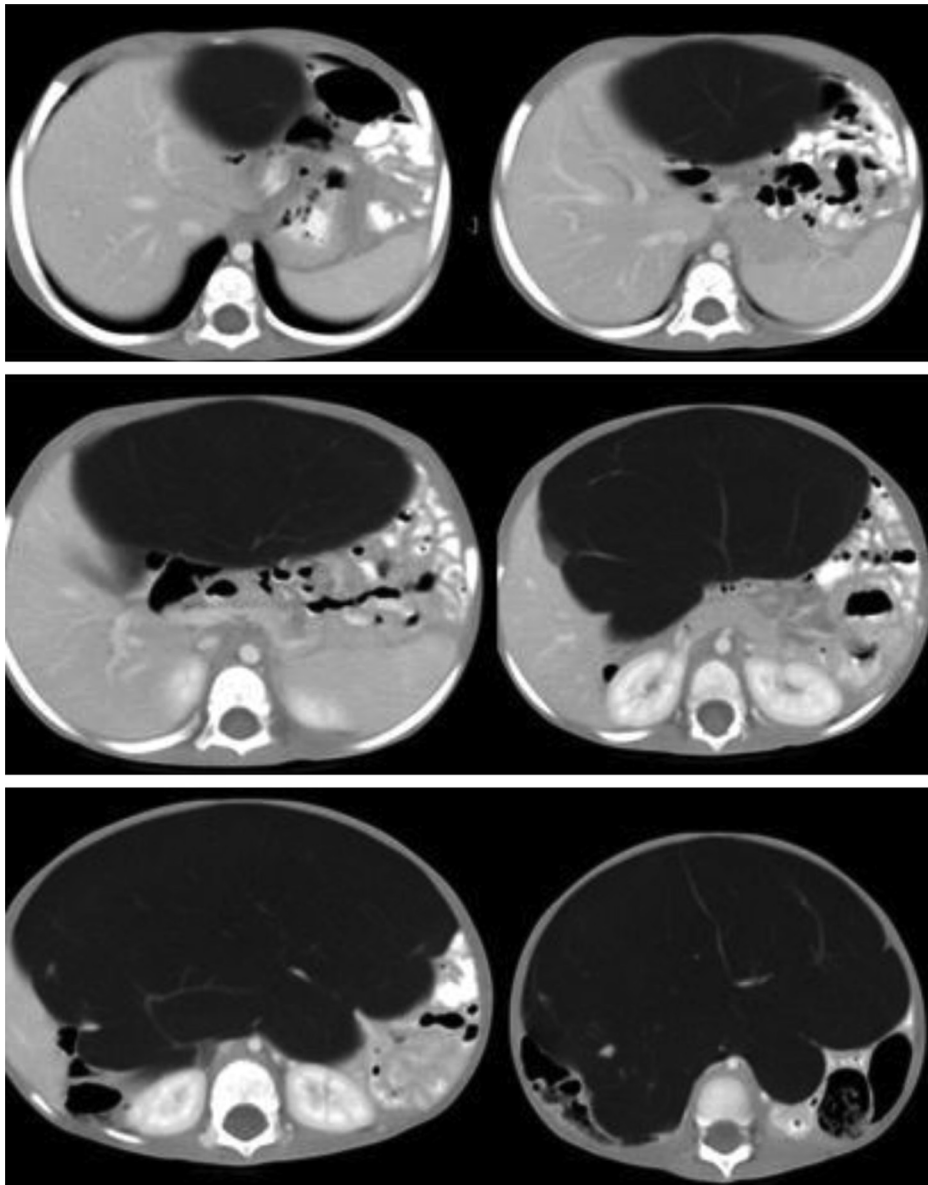


Fig. 3. CT of abdomen revealed 20 × 10 × 10 cm a well encapsulated fatty mass in the mesentery resulting in crowding of the mesenteric structures. The picture was most consistent with a lipoma.

The bowel mesentery is a rare location for deep-seated lipomas. Lipomas are usually slow-growing, non-lobulated, soft and mobile masses that do not penetrate into surrounding organs [3]. Although many lipomas are an incidental finding, they may cause variable symptoms when the tumor grows very large. Their uncommon symptoms include anorexia, abdominal distension, weight loss, abdominal pain, constipation, and sensation of fullness especially after meals. When the tumor is near the intestinal lumen and far from the mesenteric root, it may cause abdominal pain by pressing upon the intestinal loops; nevertheless, passage of the intestinal contents may be allowed such as the presented case due to the consistency of the lipoma [2]. The mesenteric lipoma in our patient caused progressive increase in abdominal girth; however, he did not complaint from abdominal pain or decrease in PO intake.

Roentgenographic examination may show a well demarcated, radiolucent area with intestinal obstruction, whereas ultrasonography can identify a well encapsulated, homogenous, echogenic

mass with good through transmission ultrasound. Imaging evaluation of mesenteric masses is best carried out with a computed tomographic scan; lipoma has the appearance of subcutaneous fat and arises from the peritoneal cavity rather than the adjacent solid organs [4].

Colored Doppler ultrasonography and angiography will show that the tumor is avascular.

In the differential diagnosis of mesenteric lipoma, lipoblastoma, lymphangioma, and lymphangiolipoma should all be considered. Lipoblastoma is a benign tumor of immature fat cells, and is localized in the extremities in 60% of cases. Moreover, it is usually seen in childhood. However, its nonhomogenous, septated, and hyperechogenic appearance on ultrasonography and CT makes it easy to differentiate from a lipoma. Lymphangioma is easily differentiated by its marked multiseptations and cystic appearance, while lymphangiolipoma is differentiated by its cystic organization inside the tumor on ultrasonography and CT [7–9].



Fig. 4. The general appearance of the mass resected along with the affected part of the small intestine.

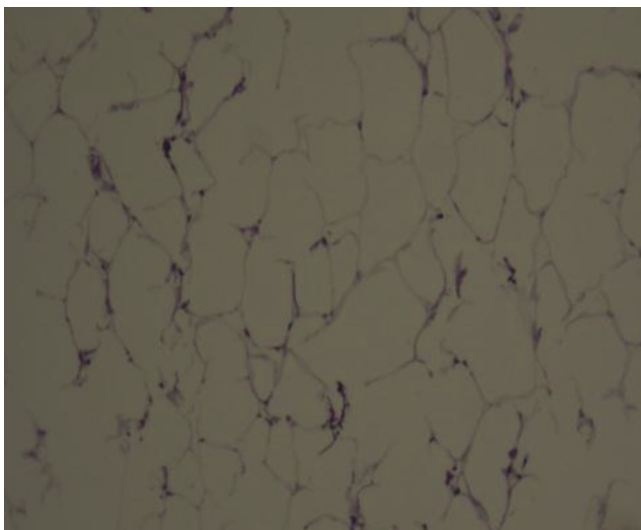


Fig. 5. The microscopic appearance of the lipoma.



Fig. 6. The child, 6 months after the surgery.

	Year	Author	Age	Gender	Mass size	Symptom
1	1956	Prince	10 months	Girl	–	Abdominal distension
2	1977	Ahn	3 year old,	Girl	25 × 23 × 19 cm	–
3	1978	Diard	20 months old	Male	–	–
4	1979	Noboa,	16-month	Male	–	–
5	1988	Gupta	2 year old	Girl	15 cm	–
6	1990	Prando	2.5 year	Male	11 × 9 × 5 cm	–
7	1992	Sarda H	–	–	–	–
8	1998	Kaniklides	11 year old	Male	29 × 22 × 5 cm	Abdominal pain constipation
9	1999	Ilhan	3 year old	Male	31 × 23 × 12 cm	Abdominal distension
10	2003	Wolko	9 year old	Male	15 × 10 cm	–
11	2003	Dani	5 year old	Girl	9.6 × 5.5 cm	–
12	2004	Ozel	7 year old	Girl	15 × 13 × 7 cm	Abdominal pain and bile-stained vomiting
13	2004	Cherian	14 year old	Girl	16 × 15 × 7.5 cm	–
14	2006	Kisra	14 year old	Male	12.4 × 6.8 × 11 cm	–
15	2009	Srinivasan	9 months	–	–	–
16	2011	Ahmed	6 year old	Male	–	–
17	2012	Çocukluk	2 year old	Girl	16 × 15 × 10 cm	Abdominal pain and bilious vomiting
18	2014	Benjamin	6 year old	Male	–	Abdominal pain

We reviewed reports of mesenteric lipomas diagnosed in pediatric age group.

Definitive treatment for mesenteric lipoma has not been established. Entire resection with, or if possible without, the affected intestinal loop may be the treatment of choice for the large mesenteric lipomas due to the risk of partial or complete intestinal obstruction by compression or volvulus.

The recurrence rate of all lipomas is less than 5%, and is usually due to incomplete excision. Even though mesenteric lipomas are rare, they should be considered in the differential diagnosis of patients with a soft, smooth, and painless abdominal mass.

3. Conclusion

Mesenteric lipomas are rare, they should be considered in the differential diagnosis of unusual abdominal pain, they may pose diagnostic difficulties due to absence of abnormal laboratory findings and its vague non-specific symptoms, despite the benign nature of this tumor, total excision with or without the affected intestinal loop by laparoscopic approach may be considered if intestinal symptoms are present.

Conflict of interest

None.

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