CASE REPORT

MESENTERIC LIPOMA IN A CHILD- A CASE REPORT

MOZUMDER MR[1], AFRIN R[2], BISWAS T[3], HAQUE JA[4], HOQUE T[5], ANJUM M[6], TOFA TT[7]

Abstract

Mesenteric lipomas are very rare intraperitoneal tumors in children. When symptoms like severe abdominal pain, constipation, repe ated vomiting develop, they are brought into medical attention. Despite ambiguous clinical findings, a sonographic suspicion may be further strengthened by CT scan or MRI. However, diagnostic laparotomy with resection of the mass followed by histopathological evaluation may confirm the diagnosis. We report one such rare case of a mesenteric lipoma in an 8 years old girl which may well be among the first 25 cases of mesenteric lipoma in children reported worldwide.

Key words: *Mesenteric lipoma, children, ultrasound, CT scan, laparotomy, histopathology.*

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Introduction

Mesenteric lipomas are rare benign intraperitoneal neoplasms, with less than 50 cases discussed in the English language literature so far. [1] It is even rarer in children, most being asymptomatic. When symptoms of bowel obstruction, perforation or ischemia develop or if the pressure effect is significant, surgical resection may be required. Even if clinically inconspicuous, these tumors can be identified through imaging tests like sonography, CT scan and MRI. However, diagnostic laparotomy followed by histopathological evaluation of the resected sample may be required to confirm the diagnosis. Here, we report such a case of a girl, who underwent appendicectomy previously with no apparent relief from her chronic abdominal pain. This time around, however, through meticulous investigations, establishing a strong pre-operative confidence, followed by exploratory laparotomy with resection of the mass, she recovered promptly and has been symptom free ever since.

Case Report

An 8 years old girl presented to the Pediatric Surgery Department of Dhaka Medical College Hospital, Bangladesh with severe spasmodic lower abdominal non-radiating pain and two episodes of vomiting for 1 day. She had been suffering from frequent similar attacks lasting for few minutes to hours during last 1 & ½ years. Noticeably these attacks used to appear about 1-2 hours after having meals. This led to her attempt to skip meals. Vomiting was not always associated with those bouts of pain, but when occurred, contained only semi-digested bitter tasting food material without any blood in it. She did not have any alteration of bowel habit or any urinary problem. She had not experienced menarche yet. She underwent appendicectomy on the basis of strong clinical suspicion of acute appendicitis about a year

1. Dr. Mahmudur Rahman Mozumder: Senior Medical Officer, Institute of Nuclear Medicine and Allied Sciences (INMAS), Dhaka.
2. Dr. Rawnak Afrin: Principal Medical Officer, INMAS, Dhaka.
3. Dr. Tanima Biswas: Senior Medical Officer, INMAS, Dhaka.
4. Prof. Dr. Jasmine Ara Haque: Chief Medical Officer & Director, INMAS, Dhaka.
5. Dr. Tanjida Hoque: MS (Thesis part) Student, Department of Pediatric Surgery, Dhaka Medical College Hospital, Dhaka.
6. Dr. Munira Anjum: MD (Phase B) Resident, Department of Pathology, DMCH, Dhaka.
7. Dr. Tasnuba Tahsin Tofa: MD (Phase B) Resident, Pulmonology, National Institute of Diseases of Chest and Hospital, Dhaka.

Correspondence: Dr. Mahmudur Rahman Mozumder, Senior Medical Officer, Institute of Nuclear Medicine and Allied Sciences, Dhaka Medical College, Dhaka. Contact number: +8801834810825, Email address: zilanmahmud@yahoo.com

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back. But despite that, her pain never really disappeared. Her weight gain had been unsatisfactory during last 1 year. After admission this time, she was resuscitated and clinically examined, yielding unremarkable abdominal findings.

On the next day an USG of whole abdomen was requested for. The girl lied down supine, while her abdomen was carefully examined using 4-15 MHz linear and 1-8 MHz curvilinear transducers on Esaote MyLab^{TM} X8 Platform USG system. This revealed a well outlined mass of mixed echogenicity lined by a thin echogenic outer covering, located just above urinary bladder and beneath parietal peritoneum. Neighboring bowel loops showed normal appearance and peristaltic activity. No free fluid or enlarged lymph node was found in the vicinity. On Doppler no flow was noted in the intraperitoneal mass.

With an inconclusive sonographic impression, a non-contrast multi-plane CT scan was done using Philips PET-CT system, which revealed an oval hypodense lesion (measuring ~8 x 6.5 x 5.3 cm) in lower abdomen having a Hounsfield Unit value -111, representing fatty tissue. The intraperitoneal mass appeared separated from all solid organs, major blood vessels and urinary bladder and possibly originated from the mesentery. So, the suggestive diagnosis was a mesenteric lipoma.

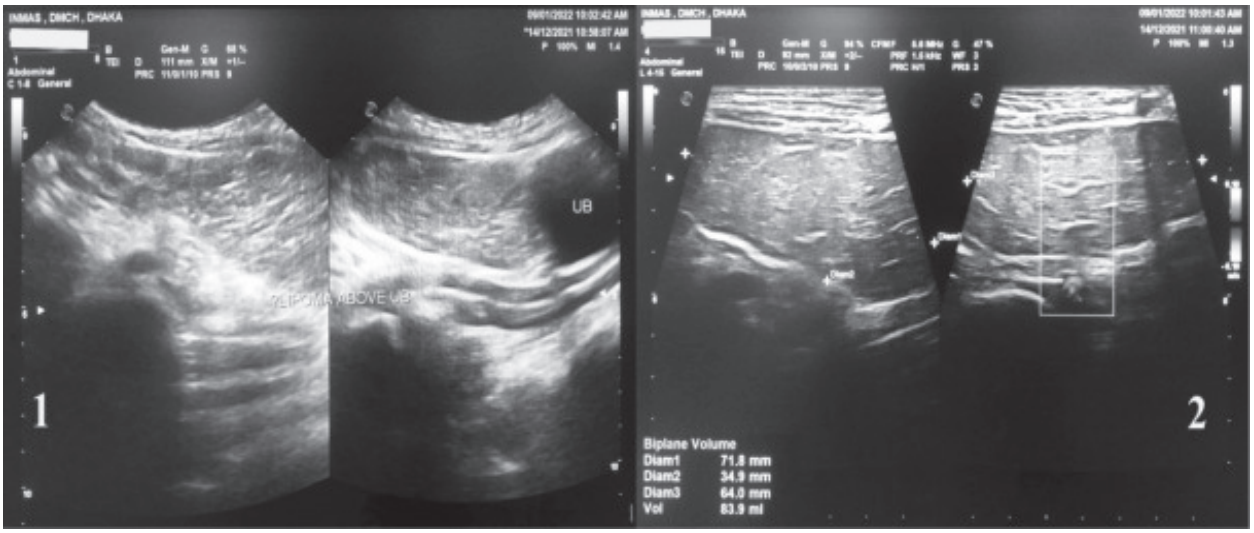

Figure 1 & 2: *Sonographic pictures including high resolution scans showing a well outlined mixed echogenic mass (measuring ~7.2 x 3.5 x 6.4 cm) outlined by a thin echogenic capsule, located just above urinary bladder and beneath parietal peritoneum. On Doppler no flow is noted inside the mass.*

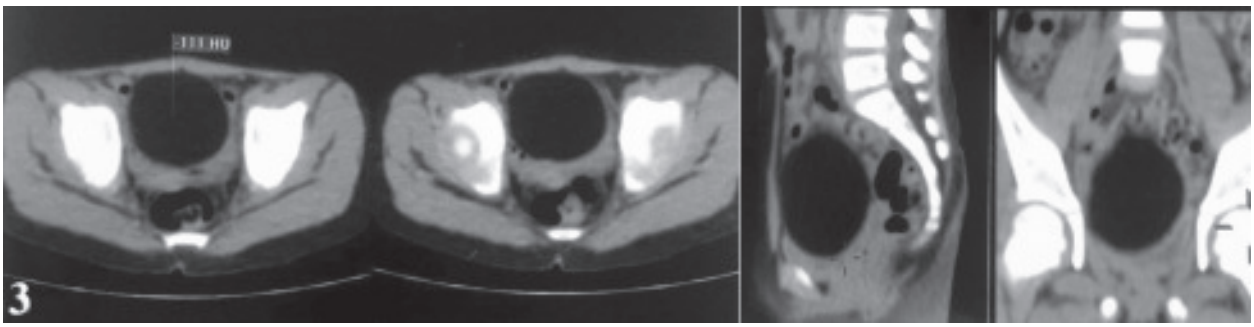

Figure 3: *Selected images of non-contrast multi-plane CT scan of abdomen showing a well outlined oval intraperitoneal soft tissue mass (measuring ~8.5 x 6.5 x 5 cm) of fat-like radio-density in the pelvis, surrounded by loops of bowel, above urinary bladder, well away from any major organ or blood vessel, possibly originating from the mesentery.*

The girl was then scheduled for a diagnostic laparotomy after a couple of days. After ensuring general anesthesia, proper surgical disinfection and draping, her abdomen was opened with a 4.0 inches long lower transverse incision. After reaching the peritoneal cavity the mass was identified in the pelvis having yellowish appearance and a shiny outer surface. The soft mass originated from anterior aspect of ileal mesentery, about 25 cm proximal from ileo-caecal junction and was free of any adhesions or signs of regional necrosis. It did not involve or invade bowel loops and there was no luminal narrowing of ileum due to compression. No regional lymphadenopathy or fluid collection was found. However, the mass did involve few vasa recta to ileum from the arterial arcade, which could be carefully dissected and the mass could be excised ensuring proper hemostasis. Then abdomen was closed in layers and the resected specimen was preserved, labelled and sent for histopathological examination.

After identifying the specimen, gross morphology was studied, revealing an oval shaped yellowish lump having minute blood vessels on the surface. The approximate measurement of the mass was ~8.5 x 6.5 x 4.5 cm, weighing ~150gm. This oval fibro-fatty lump had a lobulated appearance on the cut surface with a thin outer capsule. Then through fixation, dehydration and cleaning, the tissue was embedded into paraffin blocks. From the block thin sections were mounted on slides and stained using hematoxylin & eosin. Finally the slides were examined under light microscopy using 40x and 100x objectives. Microscopy revealed mature adipose tissue containing closely packed adipocytes, occasional tiny capillaries and fibrous strands. A thin fibrous outer capsule is noted in sections from the peripheral parts. No evidence of inflammation, necrosis or malignancy was noted. So, the confirmed diagnosis was a mesenteric lipoma.

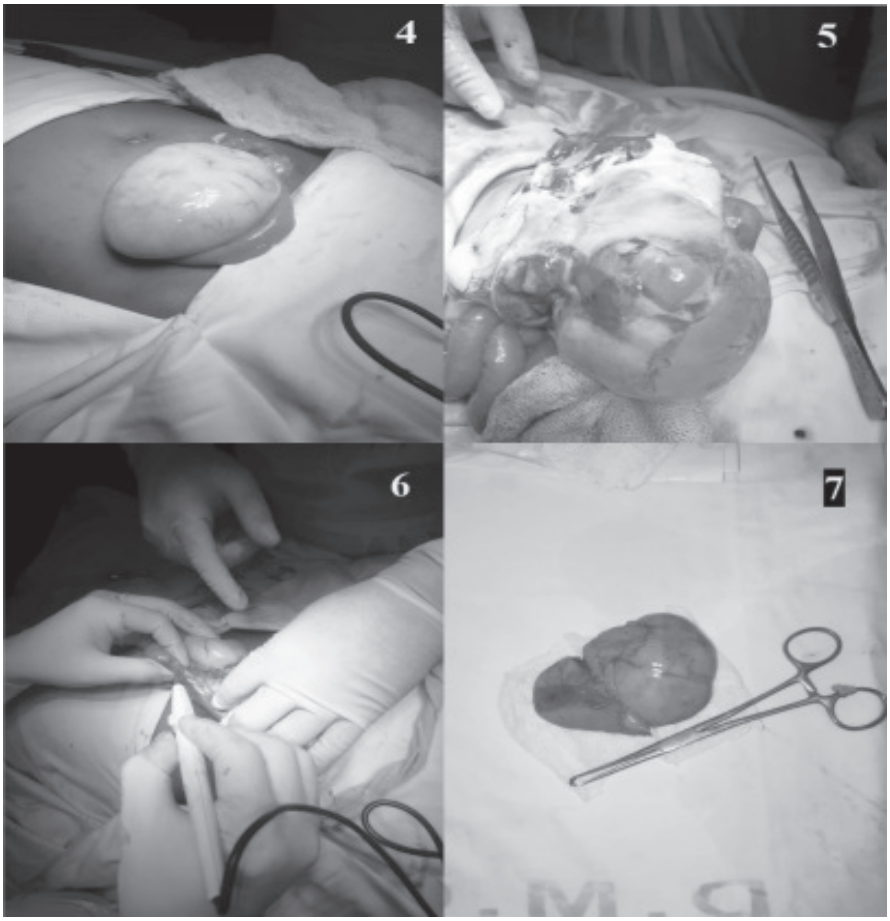

Figure 4-7: *Exploratory laparotomy revealing the shiny globular soft tissue mass of yellowish color adherent to anterior aspect of ileal mesentery. Careful dissection with proper hemostasis was ensured, yielding the resected mass (measuring ~8.5 x 6.5 x 5 cm, a 6 inches Allies Tissue Forceps beside for size reference).*

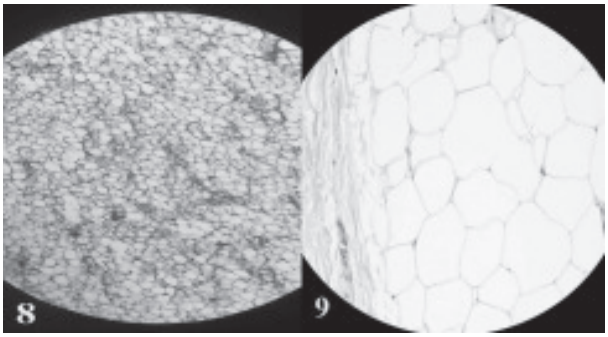

Figure 8 & 9: *40x and 100x microscopy images of H&E stained sections prepared from resected specimen, showing closely packed mature adipocytes with occasional tiny capillaries and fibrous strands at the periphery.*

The girl had an uneventful post-operative period and was eventually discharged on antibiotics and painkillers. On follow up after 1 month, she was healthy and already started gaining some weight.

Discussion

Lipoma, a benign tumor of fat, is the most common soft tissue tumor in adults, usually arising in the subcutis of the proximal extremities and trunk [2] and less commonly on the hands, feet, and face. In rare cases, they may be found in the oral cavity, breast, pancreas, and intestines. [1] As the mesentery contains fat, [3] primary lipomas may occur in the mesentery but are rather rare. [4] Mesenteric lipomas occur mainly in adults between the ages of 40 and 60 years [5] but are rare in children with the last case reported in October 2021. [6] Although mesenteric lipomas may remain asymptomatic, symptoms of acute small bowel obstruction due to volvulus [7, 8] or intussusception, [9] recurrent intestinal obstructions, [10] small bowel perforations [11] have been reported. A review of 18 reported cases of mesenteric lipomas in children showed abdominal distension, pain, constipation, bile stained vomiting along with failure to thrive as common symptoms. [12] Abdominal pain may be caused by simple compression of non-obstructed bowel loops by the enlarging tumor [13] or even failed / complete torsion of the mesenteric lipoma causing transient or permanent bowel ischemia. [14] Differential diagnoses of mesenteric lipoma include mesenteric dermoid cyst, fibroma, desmoid tumour, liposarcoma, [10] lymphangioma, lipoblastoma, lymphangiolipoma, and neuroblastoma. [1]

Plain or contrast Xrays of abdomen are usually of little value unless intestinal obstruction has developed. Ultrasound, though operator dependent, may be a useful primary investigation. Sonographic features include mass of variable echogenicity without acoustic shadowing, indistinct capsule and negligible / no flow on Doppler. [15] Computed Tomography (CT) scan is the gold standard imaging modality for diagnosing mesenteric lipoma, also yielding specific and precise anatomical land marks, [16] useful for pre-operative assessment. On CT their radio-density usually lies between -80 and -120 HU (which is identical to that of subcutaneous fat).[17] CT differential diagnoses remain liposarcoma and mesenteric panniculitis. [18] Magnetic Resonance Imaging (MRI) is very helpful in differentiating lipomas from liposarcomas. [19]

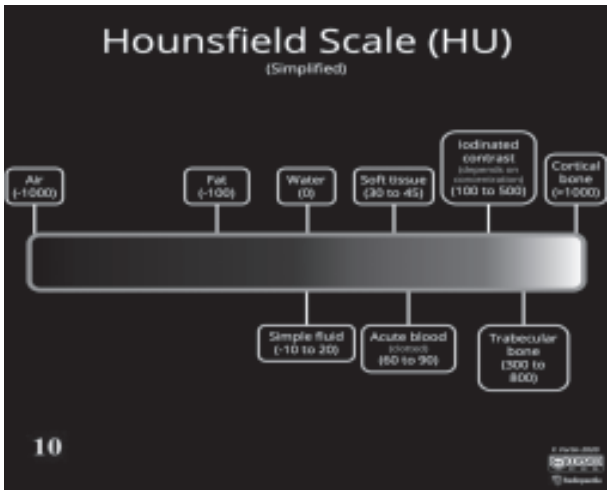

Figure 10: *Hounsfield Unit scale*

Treatment of mesenteric lipoma involves surgical excision of the mass, if possible, without affecting the bowel loops. However, with volvulus, intussusception, bowel infarction or perforation, resection with end to end anastomosis may be indicated.[13, 20] Other surgical approaches include, enucleation of tumor from the leaves of the mesentery, [21] laparoscopic excision etc. [5, 16] Giant lipomas may undergo malignant degeneration. [20]

Histopathologically, a lipoma is made up of mature fat cells laden with cytoplasmic lipid vacuoles. [2] Mature adipocytes are relatively uniform in size and lack cytologic atypia. However, atypical and bizarre spindle cells and floret-like giant cells, with pleomorphic and hyperchromatic nuclei, embedded in a sclerotic background should raise a suspicion of a possible liposarcoma. [22]

Overall, long term prognosis of mesenteric lipoma is good. To the best of our knowledge, no recurrence have been documented or reported online.

Conclusion

Mesenteric lipomas are rare intra-abdominal tumors in children and may present with chronic / acute abdominal pain, constipation or vomiting. Initially, due to vague non-specific symptoms with unremarkable examination findings, these can be difficult to diagnose and treat. However, meticulous sonography and judicious use of CT scan may suggest the diagnosis. Diagnostic laparotomy with resection of the mass not only helps to establish the diagnosis but also provides therapeutic relief from recurrent symptoms. Despite the benign nature of this tumor, large ones may undergo malignant degeneration. However, when promptly treated with surgery, recurrence almost never happens.

Acknowledgement

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