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Surgery

Giant Mesenteric Lipoma in a 10-Year-Old Girl: A Case Report

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Abstract | **Case Report**

Mesenteric lipomas are rare benign tumors, with pediatric cases constituting fewer than 50 reported instances. We present a 10-year-old girl with a 19 cm mesenteric lipoma manifesting as progressive abdominal distension. Imaging revealed a well-circumscribed, homogeneous fat-density mass on CT, consistent with a benign lipoma. Surgical resection with en bloc jejunal excision was performed due to vascular adhesions. Histopathology confirmed a lipoma with free margins (R0). The discussion highlights the role of MRI in differentiating lipomas from sarcomas and reviews the excellent prognosis post-resection. This case underscores the importance of imaging-guided management to avoid unnecessary biopsies in pediatric mesenteric masses.

Keywords: Mesenteric Lipoma, Pediatric Abdominal Mass, Benign Tumor, MRI, Surgical Resection.

INTRODUCTION

Mesenteric lipomas, composed of mature adipocytes, are exceedingly rare in children, with most cases reported in adults [1]. While typically asymptomatic, large lipomas (>10 cm) may cause abdominal pain or obstructive symptoms, mimicking malignancies [2]. Diagnostic challenges arise from overlapping clinical and radiological features with liposarcomas or gastrointestinal stromal tumors (GISTs) [3]. Current literature advocates for imaging—particularly MRI—to distinguish benign lipomas from malignant counterparts, avoiding invasive biopsies [4]. We report a pediatric case of a giant mesenteric lipoma, emphasizing preoperative imaging, surgical strategy, and long-term outcomes.

CASE REPORT

Clinical Presentation

A 10-year-old girl presented with a 6-month history of abdominal distension and intermittent pain. Physical examination revealed a soft, mobile mid-abdominal mass. Laboratory results were unremarkable.

Imaging and Diagnosis

- **Ultrasound**: Hyperechoic, well-defined mesenteric mass.
- **Contrast-enhanced CT**: Homogeneous fat-density lesion (19 × 15 × 7 cm) without invasion.

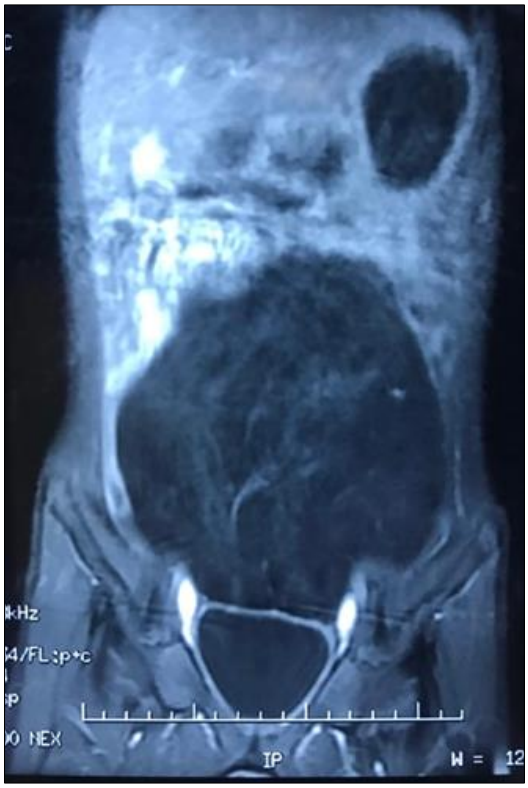

Figure 1: Axial contrast-enhanced CT image showing a homogeneous fat-density mesenteric mass (19 × 15 × 7 cm)

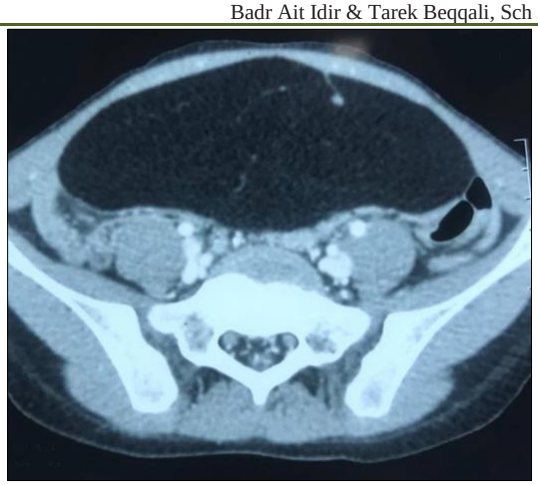

Figure 2: coronal contrast-enhanced CT image showing a homogeneous fat-density mesenteric mass

- **MRI**: Confirmed absence of septations/enhancement, excluding liposarcoma.

Surgical Management

Laparotomy identified a jejunal mesenteric lipoma with vascular adhesions, necessitating en bloc resection of the mass and affected jejunum (Figure 2). Hand-sewn anastomosis was performed.

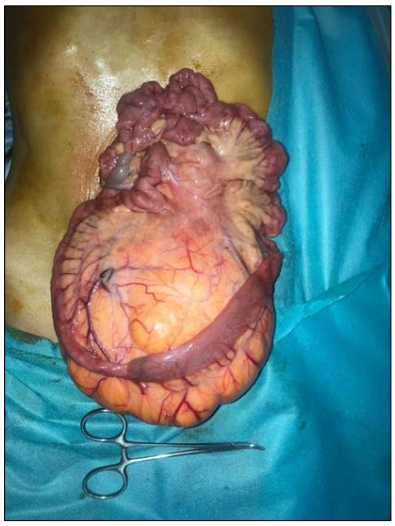

Figure 3: Intraoperative photograph of the resected jejunal segment with mesenteric lipoma

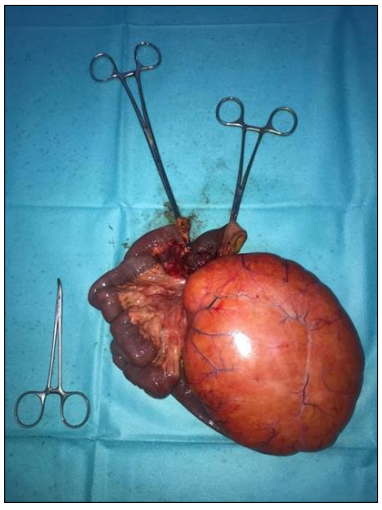

Figure 4: image of the surgical specimen after resection

Histopathology

The tumor comprised mature adipocytes without atypia (R0 resection). Reactive lymphadenitis was noted, with no malignancy.

DISCUSSION

Mesenteric lipomas are extremely rare in children, and giant forms (>10 cm) are even more unusual [1-3]. Their etiology remains unclear but may involve genetic predisposition, trauma, or obesity, although these factors were not present in our patient [1].

Mesenteric lipomas are benign tumors, and the prognosis after complete surgical resection is excellent. There have been no reported cases of recurrence in pediatric patients following complete excision [1]. The long-term survival rate is virtually 100%, provided the tumor is completely excised and no malignant transformation occurs, which is extremely rare in mesenteric lipomas [2].

The differential diagnosis of mesenteric lipoma includes various other mesenteric tumors, such as liposarcomas, lymphomas, and gastrointestinal stromal tumors (GISTs). While mesenteric lipomas are well-defined, homogeneous masses on imaging, sarcomas tend to have irregular borders, heterogeneous density, and often exhibit enhancement after contrast administration [5]. This distinction is crucial, as liposarcomas and GISTs may require more aggressive treatment, including chemotherapy or radiotherapy.

Radiological imaging, particularly CT and MRI, plays a crucial role in the diagnosis and management of mesenteric lipomas. MRI's superior soft-tissue resolution allows reliable discrimination of benign lipomas from sarcomas based on enhancement patterns and border regularity. Lipomas typically appear as well-circumscribed, homogeneous, fat-density lesions with no internal septations or enhancement on contrast imaging, which is characteristic of benign lipomatous lesions [2-5]. MRI is preferred in cases where the tumor's relationship with surrounding structures needs further clarification or when the diagnosis is uncertain based on CT. This helps to avoid unnecessary biopsy procedures, which are not recommended due to the benign nature of the lesion [1]. In the case presented, CT confirmed the diagnosis, and biopsy was avoided.

Once imaging characteristics are consistent with a benign lipoma, a decision for surgical excision should be made without the need for biopsy [1]. For giant lipomas, complete surgical resection achieves definitive cure, with pediatric literature reporting no recurrences even after intestinal resection [1, 2].

CONCLUSION

This case highlights the diagnostic utility of MRI in pediatric mesenteric lipomas and reaffirms surgical resection as definitive treatment. Clinicians should prioritize imaging to avoid unnecessary biopsies and ensure timely intervention.

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