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PaediatricThoracic Lipoblastoma: Radiologic Features and Clinical Outcomes

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Lipoblastoma; Mediastinal Tumor; Pediatric MRI; Thoracic Surgery; Lung Infiltration

1. Abstract

Lipoblastoma is a benign neoplasm of immature adipose tissue, predominantly observed in children under three years of age. This case report details a right thoracic lipoblastoma in a 2-year-old girl, diagnosed using imaging modalities, including computed tomography (CT) and magnetic resonance imaging (MRI), and subsequently confirmed histologically following surgical excision. Radiological findings revealed a well-circumscribed mass with fatty components and contralateral extension without invasion of critical structures. Postoperative MRI follow-up revealed no recurrence. This case underscores the critical role of imaging in the diagnosis and surveillance of rare tumors.

2. Introduction

Nocturnal cough and bronchitis are common in paediatric. When evolution is uncommon, rare causes must be explored through imagery. We discuss a 2-year-old girl's intrathoracic lipoblastoma case.

2.1. Case Presentation

A 2-year-old female patient was hospitalized twice for oxygen-dependent spastic bronchitis. She presented with a chronic nocturnal cough unresponsive to inhaled corticosteroids (ICS). A chest X-ray revealed a well-defined mass in the upper right lung. Further thoracic imaging (CT and MRI) identified a right intrathoracic mass extending into the mediastinum, consistent with a lipoblastoma. Surgical intervention via posterolateral thoracotomy achieved complete resection. Post-operative follow-up, including control MRIs, showed no recurrence. The cough resolved post-surgery.

2.2. Discussion

Lipoblastomas constitute less than 1% of pediatric mesenchymal tumors, predominantly affecting males under three years [1]. These tumors comprise immature adipocytes with well-defined septa, lipoblasts, vascular network, and myxoid appearance similar to myxoid liposarcoma [1,2]. Imaging reveals cystic or solid masses with fat densities, with differential diagnosis including lipoblastoma, lipoma, teratoma and liposarcoma [3,4]. Radical surgical resection is the primary treatment, with low recurrence risk after complete excision [5-7].Conventional radiography is an important diagnostic tool in pulmonary pathology. Lipoblastoma appears as a well-defined mediastinal opacity suggesting a posterior mediastinal mass [8]. Sonographic imaging shows a homogeneous hyperechoic mass, though mixed echogenicity may occur. CT or MRI are required for evaluating soft-tissue masses in paediatric patients. CT identifies fatty components and intratumorally stranding with occasional enhancement. On MRI, the mass appears hyperintense on T2, while T1 images show variable fat content. Lipoblastoma typically shows minimal enhancement. Fat suppression confirms fatty components. Lipomas are rare in paediatric populations. Non-fat components in fatty masses suggest lipoblastoma. Liposarcoma is rare in children under 10 years. Teratomas occur in young children and may share locations with lipoblastoma but typically contain calcification [9].

2.3. Conclusion

Intrathoracic lipoblastoma should be considered in young children with atypical respiratory symptoms. Imaging aids diagnosis and surgical planning. Complete resection ensures excellent prognosis, while early identification prevents complications.

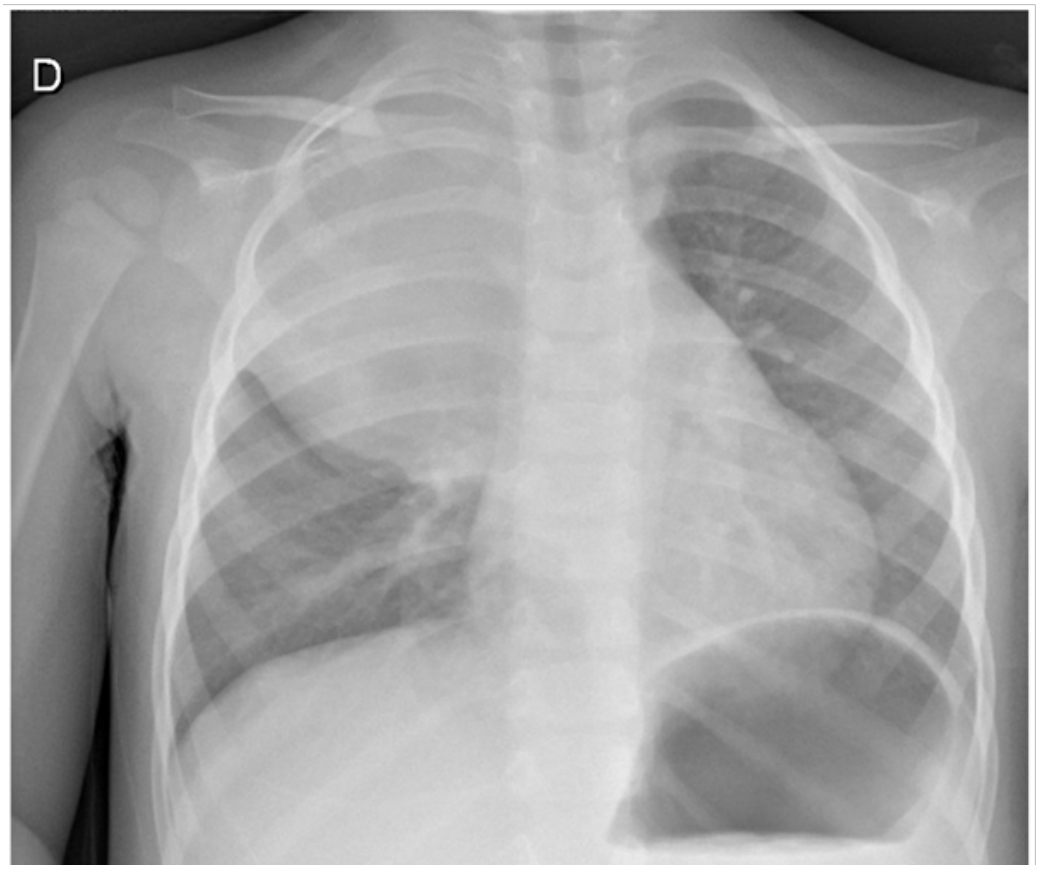

Figure 1: Face radiography of a medistinal mass.

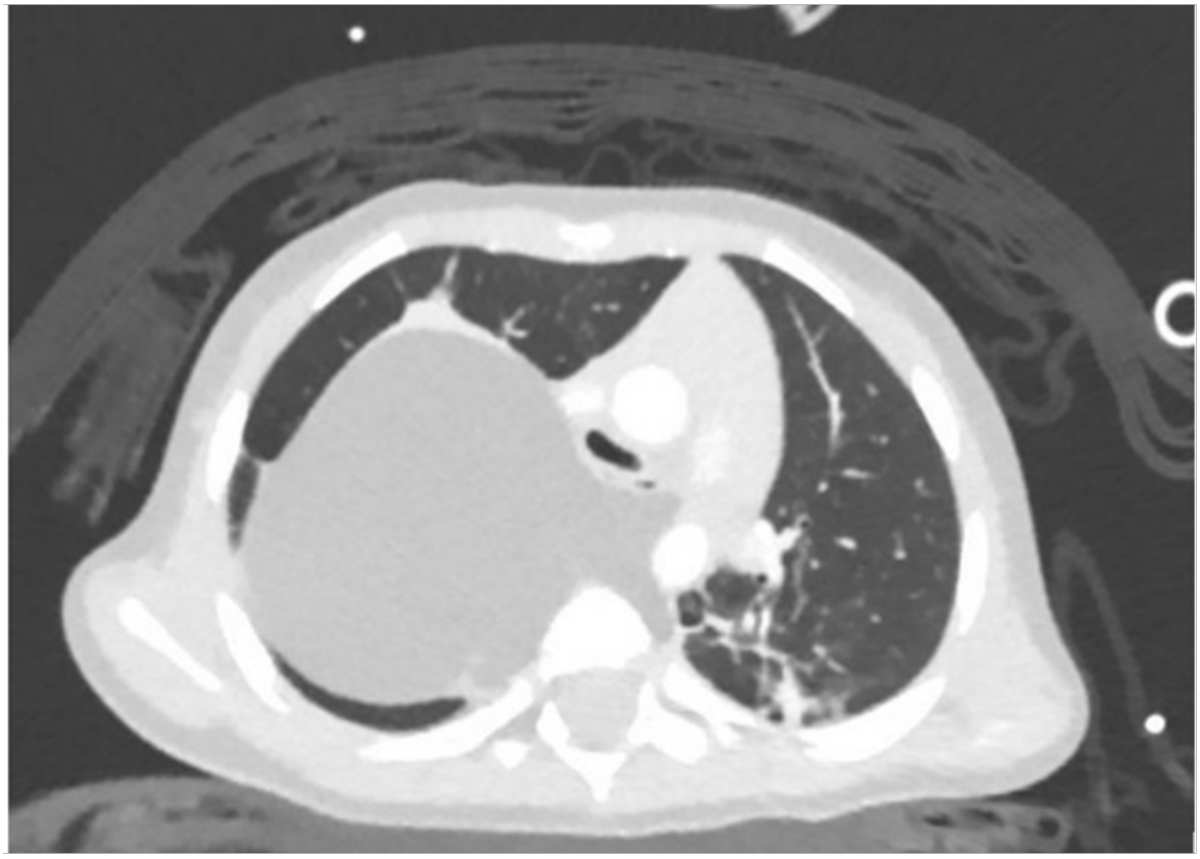

Figure 2: Axial CT image of a lipidic mediastinal mass.

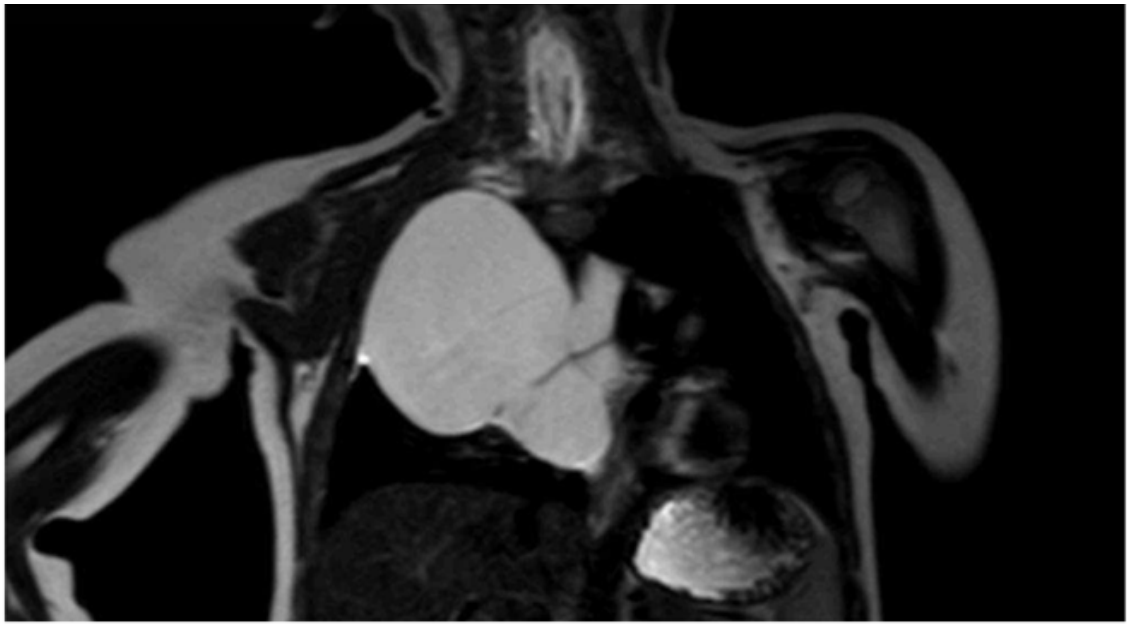

Figure 3: Coronal T1 MRI of a lipidic mediastinal mass.

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