Case Report

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Neonatal Intrathoracic Mass: Neuroblastoma

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Abstract

Neuroblastoma is the most common solid tumor in newborn and the most common extracranial tumor in infancy. Common site for tumor is abdominal, however it could be arises from paraspinal area of the sympathetic nervous system and account for 11 to 26% of all neuroblastoma cases. Thoracic neuroblastoma (TNBL) has a relatively favourable prognosis and better outcome then neuroblastoma arising in other area. We report a case of intrathoracic neuroblastoma in newborn presenting as respiratory distress, treated successfully with chemotherapy and subsequent lobectomy of lung tissue.

Keywords: Newborn; Respiratory Distress; Thoracic Neuroblastoma.

Introduction

Neuroblastoma is the most common solid tumor in newborn [1] and the most common extracranial tumor in infancy.

Thoracic neuroblastoma (TNBL) is a solid tumor composed of highly heterogenous neuroblasts originating along paraspinal area of the sympathetic nervous system, account for 11 to 26% of all neuroblastoma cases.

TNBL has a relatively favourable prognosis and better outcome then neuroblastoma arising in other area. We report a case of intrathoracic neuroblastoma in newborn, treated successfully with chemotherapy and subsequent lobectomy of lung tissue.

Case Report

A male late preterm presented on day 2 with grunting, respiratory distress and not accepting feeds. Baby was irritable, pink, CRT-2 sec, grunting, RR-50/min, HR-100/min, SpO_2-96% and reflex were sluggish. Managed as per respiratory distress protocol, sepsis screen was positive, antibiotics were started.

There was polyhydramnios in mother and neonatal death because of cyanotic congenital heart disease i.e. TGA. X-ray chest showed that right hemi thorax homogenous opacity (Fig. 1) & CT chest, confirms the diagnosis of right intrathoracic mass.

Further investigation reveals LDH-668 U/L, AFP-1918U/L and CSF & bone marrow within normal limit. FNAC of mass was positive for malignant cells (small round cell tumour), thus diagnosis of Neuroblastoma was confirmed.

Tumor was localized to thoracic cavity, four cycles of chemotherapy was given which includes vincristine, carboplastin, etoposide, cisplatin, mesna and cyclophosphamide with immunoglobulin and colony stimulating factor. Homogenous opacity dissolved leaving behind multiple cystic space (Fig. 2).

There was complete disappearance of mass with completion of fourth dose of chemotherapy. Later child develop emphysema of affected part and surgically removed.

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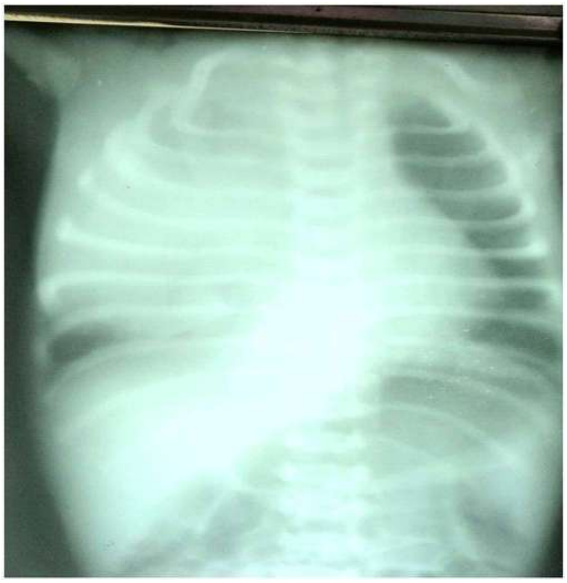

Fig. 1: X-ray chest showed right hemithorax homogenous opacity

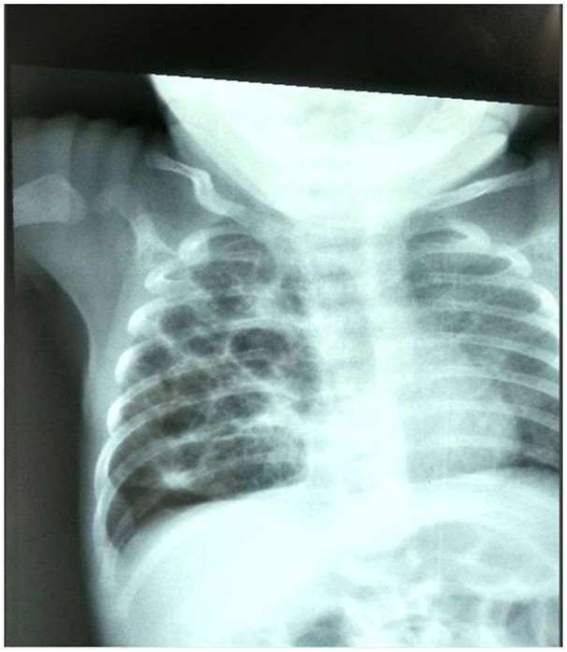

Fig. 2: X-ray chest showed right hemithorax multiple cystic lesions after resolution of mass

Conclusion

Neuroblastoma, 3rd most common paediatric tumour and congenital neuroblastoma accounts for 54% of all neonatal malignancies, rarely presenting as antenatal intrathoracic mass. Differential diagnosis includes Congenital cystic adenomatoid malformation (CCAM, small cyst type), intra-extralobar pulmonary sequestration, teratoma and hemangioma. In this particular case differentiation between teratoma and neuroblastoma was diagnostic puzzle, FNAC confirmed the diagnosis. We report a case of intrathoracic neuroblastoma in 3rd order sibling and TGA in 2nd order sibling. Association of TGA and Neuroblastoma can be explained by "2-hit" theory of carcinogenesis. Prezygotic mutational event might lead to an expression of a cardiovascular anomaly (teratogenesis) as well as forming the basis for later development of neuroblastoma after a second postzygotic mutational event (carcinogenesis) [2,3].

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