ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 09 | September - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ATYPICAL LIPOMATOUS TUMOUR OF HUMERUS IN A PAEDIATRIC PATIENT : A RARE CASE REPORT

Histopathology

Dr. Loitongbam Bhumeshowri Devi MD, Pathology, Assistant Professor, Department Of Pathology, ESIC Medical College & Hospital, Alwar

Dr. Debanjan Dutta MD, Pathology, Senior Resident, Department Of Pathology, ESIC Medical College & Hospital, Alwar

Dr. Prachi Chouhan MD, Pathology, Senior Resident, Department Of Pathology, ESIC Medical College & Hospital, Alwar

ABSTRACT

Atypical Lipomatous tumor(ALT)/ Well Differentiated Liposarcoma(WDT) is a locally aggressive mesenchymal neoplasm which is rarely seen in paediatric patients. The tumour may mimic lipoblastomatosis of infancy which is a benign condition. Clinicial diagnosis in infants presenting with a soft tissue mass over the extremities become challrnging. Histomorphological diagnosis with immunohistochemistry (IHC) and molecular studies is the gold standard. Here, we report a case of ALT of the proximal humerus in a 1 year old child with clinical, radiological and histopathological findings with treatment modalities.

KEYWORDS

Atypical Lipomatous Tumor, Well Differentiated Liposarcoma, Mesenchymal neoplasm (MN) Immunohistochemistry

INTRODUCTION

ALT of the extremities is a locally aggressive mesenchymal neoplasm. It accounts for 40-45% of the liposarcomas.[1] The lesions occur predominantly in the middle aged adults with peak incidence between 4th to 5th decades of life. It is very rare in paediatric age group.[1] ALT of humerus in a pediatric patient has not been reported in literature. The MESH terms used to carry out the search was (Atypical Lipomatous Tumour) and (Pediatrics). Only three case reports of ALT were found, that too in thigh & retroperitoneal area.[2,3,4] In this article we report a case of ALT in a one year old female child in humerus with brief discussion on its pathogenesis, IHC and treatment protocol.

Case Report

A one year old female child, brought by parents to our tertiary care centre in July 2025, with mother as informant, reported with a chief complaint of swelling over left shoulder since last eight months [Fig.1].

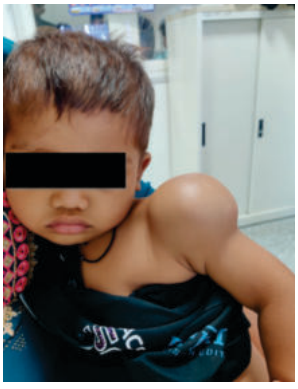

Fig. 1: Clinical image of the mass overlying left proximal humerus.

The general physical examination of the child was within normal limits. On clinical examination there was a large protruding mass over the left proximal humerus measuring 12 x 6 cm in size. The overlying skin around the shoulder joint was intact, stretched and shiny in appearance without any color change. On palpation, the skin was not fixed to the underlying mass however the mass was fixed to the underlying deeper tissue. It was firm to hard in consistency with mild tenderness on palpation. MRI report showed a neoplastic mass measuring 11x 9x 7cm encircling the humerus bone. The mass was hyperintense on both T1 and T2 weighted images. Considering the clinical & MRI findings, a differential diagnosis of Hemangioma, Lipoma and Infantile myofibromatosis were considered.

Surgical excision of the mass was done in dept of Onco-surgery and submitted to the dept of Pathology for histopathological examination.

On gross, we received an irregular, lobulated and well circumscribed, greyish white soft tissue mass measuring 10x 8.5x 6.8cm, which was firm in consistency [Fig.2]. The cut section showed white to yellowish homogenous fibrotic areas.[Fig.3] No areas of haemorrhage or necrosis was seen.

Fig. 2: Gross image of the specimen

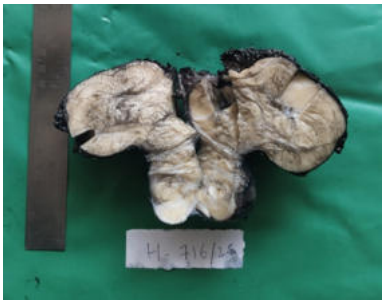

Fig. 3: Cut Section of the specimen

On microscopy, a well circumscribed lesion composed of sheets of adipocytes of varying sizes separated by traversing fibrocollagenic tissue was identified. Stroma showed scattered plump to spindle shaped atypical cells admixed within the adipocytes with occasional lipoblasts. (Fig. 4)

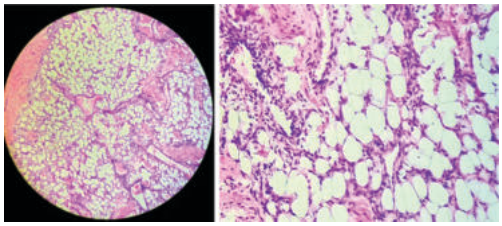

Fig. 4: Atypical lipomatous tumour showing plump to spindle shaped stromal cells and different stages of adipocytes and lipoblasts

A histomorphological diagnosis of ALT was made and IHCs were conducted for confirmation of the diagnosis. IHCs showed nuclear immunopositivity for MDM2 & CDK4 gene, and cytoplasmic positivity for S100. CD34 was negative, thus confirming the histomorphological diagnosis.

DISCUSSION

ALT is classified as an intermediate grade adipocytic neoplasm with local aggressive behaviour.[5] They account for less than 10% of the soft tissue neoplasms in paediatric patients.[6] It commonly affects deeper soft tissues of thigh and retroperitoneum.[2,3,4,6] However, ALT occurring in humerus in a pediatric patient has been not yet been reported in literature. Histological presentation of ALT resembles Lipoblastoma or Lipoblastomatosis in infants which is a benign tumor, however atypical stromal cells are absent in lipoblastomatosis. The confirmatory diagnosis depends on histomorphology, IHC studies and cytogenetics. Molecular & IHCs are available for both MDM2 & CDK4 gene making the diagnosis more rapid. MDM2 & CDK4 Gene mutation is seen in ALT however it is negative in Lipoblastomatosis.[7] Surgical excision of the tumor with negative margins remains the treatment protocol in case of locally aggressive tumors with less chance of recurrence.

CONCLUSION

Atypical lipomatous tumour of paediatric patient is itself a rare entity. The location of the tumor in the humerus has not been reported in literature so far. A thorough work up of the case covering the clinical, radiological, histological as well as molecular aspects should be considered. Follow up of the case is mandatory considering the chance of recurrence.

REFERENCES

1. WHO Classification of Tumours Editorial Board. Head and neck tumours (WHO classification of tumours series, 5th ed. vol. 9). Lyon (France): International Agency for Research on Cancer 2022.
2. Dadone.Montaudié B, Burel.Vandenbos F, Soler C, Rosello O, Boyer C, Fabas T, Bianchini L, Pedeutour F. Double minute chromosomes harboring MDM2 amplification in a pediatric atypical lipomatous tumor. Genes, Chromosomes and Cancer. 2019 Sep;58(9):673-9.
3. Kukull BJ, Khalighi MA, Gundle KR, Hansford BG, Corless CL, Davis JL. Low-grade osteosarcomatous dedifferentiation of an atypical lipomatous tumor in a pediatric patient. Pediatric and Developmental Pathology. 2020 Jun;23(3):240-6.,
4. Iseed R, Stanford L. Pediatric case of atypical spindle cell/pleomorphic lipomatous tumor within the vastus lateralis muscle. Journal of Surgical Case Reports. 2024 Apr 1;2024(4).
5. Sbaraglia M, Bellan E, Dei Tos AP. The 2020 WHO classification of soft tissue tumours: news and perspectives. Pathologica. 2020 Nov 3;113(2):70.
6. Özşen M, Yalçınkaya U, Yazıcı Z, Sarısözen MB. Lipomatous tumors in pediatric patients: a retrospective analysis of 50 cases. Turkish Journal of Pathology. 2020 Jan 15;36(1):1.
7. Abdul-Ghafar J, Ahmad Z, Tariq MU, Kayani N, Uddin N. Lipoblastoma: a clinicopathologic review of 23 cases from a major tertiary care center plus detailed review of literature. BMC research notes. 2018 Jan 17;11(1):42.