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October 2004

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Recommended Citation

Ahmed, Z., Shah, H. U., Yaqoob, N., Muzaffar, S. (2004). Pleomorphic liposarcoma in a ten year old child. *Journal of Pakistan Medical Association*, 54(10), 533-534.

Available at: https://ecommons.aku.edu/pakistan_fhs_mc_pathol_microbiol/953

Pleomorphic Liposarcoma in a ten year old Child

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Introduction

Liposarcoma is the second most common soft tissue sarcoma in adults.¹ It is extremely uncommon in the pediatric age group. Although many cases so diagnosed in children in the past are in reality examples of lipoblastomatosis,² several indubitable cases of liposarcoma have been recorded in adolescents and children.³⁻⁵ In children under ten years of age, it is extremely rare.⁶ Majority of liposarcomas in children are myxoid liposarcomas, while the pleomorphic subtype is exceptional.⁷ We report a case of pleomorphic liposarcoma in a 10 year old child.

Case Report

We received the specimen of a ten year old boy from Nawabshah coded as "mass left lower leg". There was a history of trauma a month ago which was followed by the development of a mass along with a non-healing ulcer opening on the surface of the skin, on the lateral aspect of the left lower leg. Interestingly, provisional clinical diagnosis was giant cell tumor of bone. Grossly, the specimen consisted of multiple nodular soft tissue fragments measuring together approximately 12x8.5x6cms in aggregate. Multiple representative sections from the soft tissue fragments were submitted. On microscopy, the tumor was seen to be composed of sheets of malignant lipoblasts with highly vacuolated cytoplasm and severe nuclear hyperchromasia. Bizarre tumor giant cells were seen and numerous mitotic figures including abnormal ones were identified (Figures 1 and 2). In many cells, the nuclei were indented due to the presence of intracytoplasmic lipid. On immuno histochemistry, the tumor cells were positive for S100 protein and weak positive for vimentin. Tumor cells were negative for cytokeratins, anti smooth muscle actin and CD34. Based on the histological features, a diagnosis of pleomorphic liposarcoma

Figure 2. High power view showing tumour giant cells and lipoblasts (H&E, Mag 40x). was made.

Discussion

Liposarcoma of any type are rare in children, but pleomorphic subtype is exceptional.⁷ Only a handful of cases are reported in literature.⁸⁻¹⁰ These cases occurred in neck^{8,9} shoulder⁹ inner chest wall¹⁰, roof of mesentery,⁷ finger and urinary bladder.¹¹ In our case, the tumor was located in the left lower extremity. To our knowledge, this is the first report of a childhood pleomorphic liposarcoma originating in this anatomic location.

Histological diagnosis of pleomorphic liposarcoma depends on the presence of pleomorphic malignant lipoblasts. These were easily identifiable in this case. Pleomorphic liposarcoma must be distinguished from poorly differentiated myxoid liposarcoma. The diffuse distribution of pleomorphic lipoblasts and the absence of myxoid, spindle cell and round cell areas made this distinction possible. In this case, tumour cells were positive for immuno histochemical stain S100 protein. This is usually seen in

finger and urinary bladder.¹¹ In our case, the tumor was located in the left lower extremity. To our knowledge, this is the first report of a childhood pleomorphic liposarcoma originating in this anatomic location.

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