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Pleomorphic Lipoma Masquerading as Malignant Neoplasm

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Abstract: ***Pleomorphic lipoma is a relatively rare adipocytic neoplasm, occurring predominantly in elderly males in the subcutaneous tissues of the neck or shoulder. It is considered as a variant of lipoma. Histologically, pleomorphic lipoma consists of varying quantity of mature fat, bland spindle cells and ropey collagen. In addition, it is characterized by multinucleate giant cells, which possess floret-like nuclei and marked pleomorphism. Here, we report a case of 51 year male presented with swelling over left arm since two years progressively increased in size. On cytology, a diagnosis of malignant neoplasm was made. Excised specimen was sent for histopathological examination and was diagnosed as pleomorphic lipoma based on the presence of mature adipose tissue, floret-like cells, spindle cells and absent mitotic figures. Because of the relative rarity, variable histological spectrum and cellular pleomorphism, pleomorphic lipoma is misdiagnosed easily. To avoid this misdiagnosis, careful attention should be paid to the above histopathological features.***

Keywords: Arm swelling, Malignancy, Pleomorphic lipoma

1. Introduction

Pleomorphic lipoma was first described by Shmookler and Enzinger in 1981[1], 6 years later than the first description of spindle cell lipoma by Enzinger and Harvey[2]. The two tumors display an overlapping histological feature[1-3], similar immunohistochemical[4, 5], and cytogenetic features[6-8]. So, pleomorphic lipoma is considered as a variant of spindle cell lipoma.

Pleomorphic lipoma occurs predominantly in the subcutaneous tissue of the posterior neck, shoulder, and back[1]. Less frequently, it can occur in unusual locations including palm[9], tonsillar fossa[10], orbit[11], tongue[12], vulva[13] and oral cavity[14].

Microscopically, pleomorphic lipoma can show variable histological appearances. The majority of the tumors show varying proportion of mature fat, spindle cells and "floret-like" cells. Some tumors may predominantly consist of adipose tissue with scattered spindle cells or "floret-like" cells, others may predominantly consist of spindle cells and "floret-like" cells with a little adipose tissue. Very rarely, it may entirely lack mature adipocytes which can pose a great challenge, and be misdiagnosed easily.

2. Case Report

A 51 year old male patient presented with a painless swelling of 14 cm x 12 cm size over anterolateral and upper one third aspect of left arm. FNAC was performed and smear showed round to oval cells with scant eosinophilic cytoplasm and diagnosis of malignant neoplasm was made[Fig.3].The mass was excised and sent for histopathological examination. Grossly, the resected mass measured 14 cm x 7 cm x 5 cm[Fig.1].Cut surface showed grey yellow and myxoid areas[Fig.2].Microscopically the tumor was composed of mature adipose tissue along with fibrocollagenous tissue, uniform spindle cells with hyperchromatic nuclei, many bizarre giant cells and multinucleated giant cells. These multinucleated cells had hyperchromatic nuclei arranged into a "floret-like" pattern[Fig.4 a, b, c].Occasional, mitotic figures were seen.

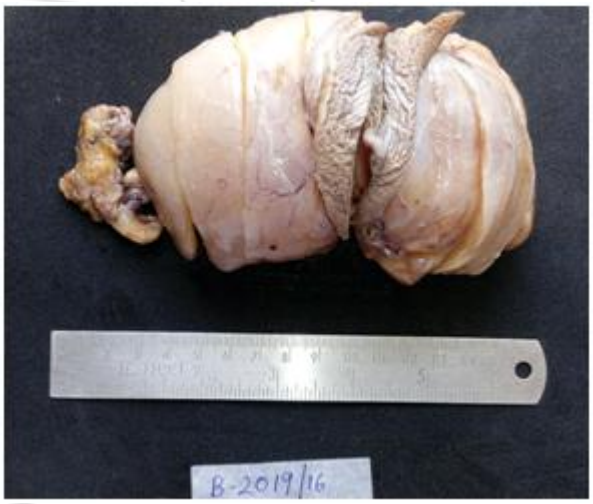

Figure 1: Showing resected mass measuring 14 x 7 x 5 cm

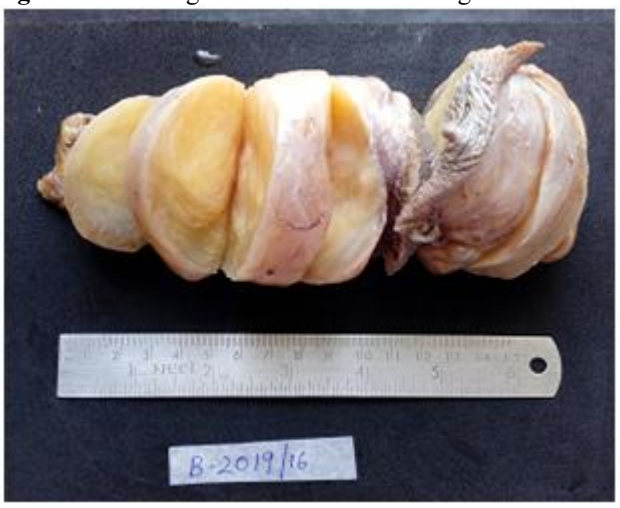

Figure 2: Cut surface shows grey yellow and myxoid areas

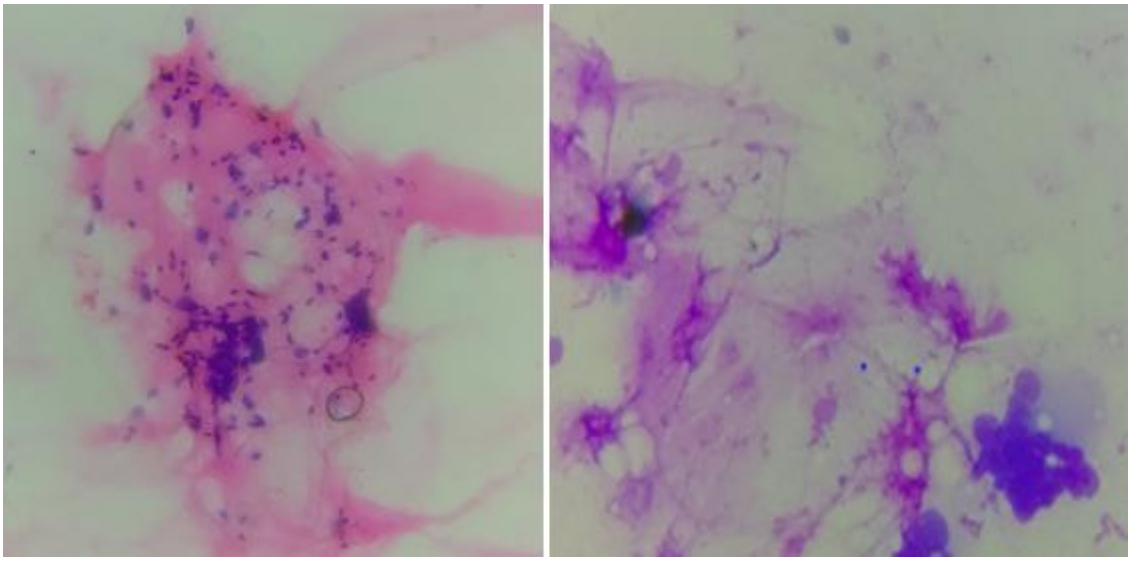

Figure 3: FNAC Smear shows round to oval cells with vesicular nuclei and scant eosinophilic cytoplasm.

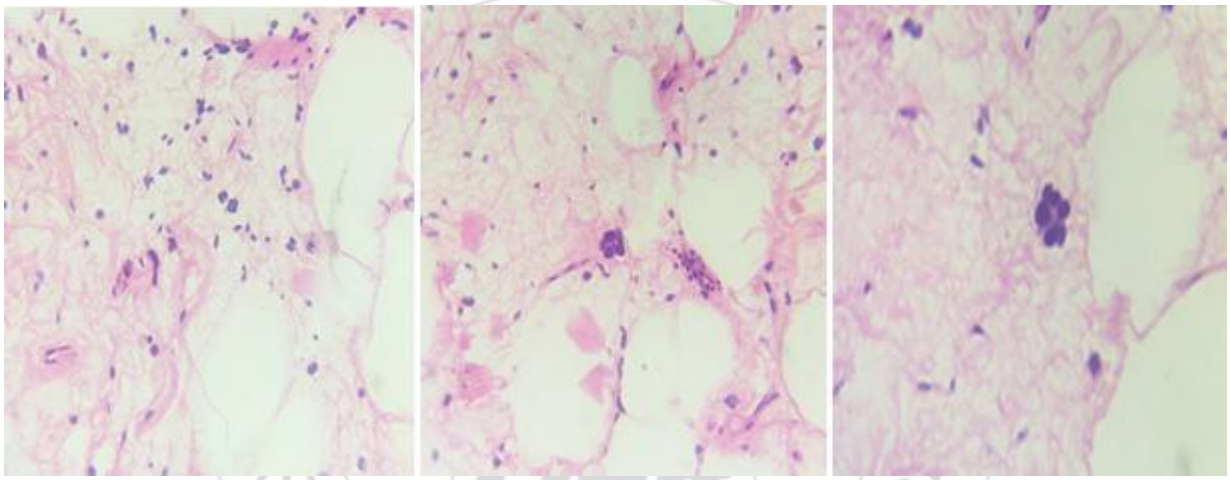

Figure 4: H&E: a) 10x b) 10x c) 40x: Mature adipose tissue along with fibrocollagenous tissue, spindle cells with hyperchromatic nuclei; many bizarre giant cells and multinucleated giant cells showing "floret-like" pattern

3. Discussion

Pleomorphic lipoma, considered as a variant of spindle cell lipoma, typically presents in older men with a median age of more than 55 year. The majority of the lesions occurs in the subcutis of the posterior neck, back, and shoulder area[1]. Less frequently, it can occur in palm[9], tonsillar fossa[10], orbit[11], tongue[12], vulva[13] and oral cavity[14]. Pleomorphic lipomas are benign tumors, can be readily treated by excision, although occasionally recurrences can happen.

Histologically, pleomorphic lipoma is largely composed of mature fat and bland spindle mesenchymal cells. In addition, multinucleated giant cells are scattered amid the spindle cells, and their nuclei are radically arranged in a "floret-like" pattern. The spectrum of histology shows a wide variation, and varies from tumor that resembles ordinary lipoma with few spindle cells to tumor that mainly consists of spindle cells with just a few fat cells. Cytologically, spindle cells have single elongated hyperchromatic nuclei and inconspicuous nucleoli, whereas multinucleated giant cells have irregular, hyperchromatic and significantly atypical nuclei. The mitoses of the two cell types are rare. "Ropelike" collagen bands are randomly distributed amid the cellular elements, usually an important diagnosis clue to pelomorphic lipoma. Some lesions may have extensive myxoid stroma, which can be a dominant feature and pose a diagnostic challenge. Some inflammatory cells including mast cells, lymphocytes and plasma cells are often scattered among the spindle cells. The vascular pattern usually consists of a few small or intermediate-sized, thick-walled vessels. Immunohistochemically, the spindle cells and "floret-like" cells are strongly positive for CD34, but negative for S-100 protein and smooth muscle actin[4, 5]. Some cases can show desmin positive expression, which may lead to a misdiagnosis of a smooth muscle tumor[15].

The differential diagnosis of classic pleomorphic lipoma includes atypical lipomatous tumor/well-differentiated liposarcoma and pleomorphic liposarcoma. The typical pleomorphic lipoma usually arises in the subcutaneous tissue of shoulder or head and neck region. But, atypical lipomatous tumor/well-differentiated liposarcoma and pleomorphic lipoma usually arises in deep soft tissue of extremities or retroperitoneum. "Floret-like" giant cells in pleomorphic lipoma occasionally can also be seen in atypical lipomatous tumor/well-differentiated liposarcoma, which is not suitable for distinguishing them. The ropey collagen cannot be seen in atypical lipomatous tumor/well-differentiated liposarcoma and pleomorphic liposarcoma, so

it is useful for differential diagnosis. Moreover, pleomorphic lipoma lacks lipoblasts, which can be seen in the above two lesions[3].

4. Conclusion

Because of the relative rarity, variable histological spectrum and cellular pleomorphism, pleomorphic lipoma is misdiagnosed easily. To avoid this misdiagnosis, careful attention should be paid to the above histopathological features.

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