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Dermal pleomorphic liposarcoma resembling pleomorphic fibroma: report of a case and review of the literature†

Pleomorphic liposarcoma (PLPS) is a rare, high-grade sarcoma defined by the presence of pleomorphic lipoblasts. Constituting 5% of all liposarcomas, PLPS usually arises in deep soft tissues of the extremities, with rare occurrences in the dermis and subcutis. We describe a unique case of an 85-year-old Caucasian gentleman with a 1 year history of a pedunculated, pink, non-tender papule on the dorsum of his left arm, measuring 1.0 cm in maximum dimension. Biopsy revealed a dermal collection of atypical epithelioid and spindle cells superimposed on a sclerotic background, resembling a pleomorphic fibroma on low power. On high power, a central focus of discrete adipocytic differentiation with pleomorphic lipoblasts was present. Tumor cells were positive for S-100 and negative for desmin, actin, CD68, keratin, MART-1 and CD34. Clinicopathologic findings were consistent with PLPS and the diagnosis was made. PLPS is rarely localized to the dermis and one with low power features resembling a pleomorphic fibroma has not been previously described in the literature.

Keywords: atypical features, cutaneous neoplasm, S100, soft tissue tumors

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Liposarcoma is the most common soft tissue sarcoma of adulthood and can be subclassified into four groups based on distinctive clinical, pathological and cytogenetic features: (a) atypical lipomatous tumor/well-differentiated liposarcoma (including adipocytic, sclerosing inflammatory, spindle cell and dedifferentiated variants), (b) myxoid/round cell liposarcoma, (c) pleomorphic liposarcoma (PLPS) and (d) mixed-type liposarcoma.[1–3] Liposarcomas account for approximately 20% of all adulthood sarcomas, with 5% of these tumors being subclassified as the most rare form, PLPS.[1,4] PLPS is a high-grade sarcoma with features of a pleomorphic sarcoma; however, diagnosis requires the presence of pleomorphic lipoblasts, mono- or multivacuolated, which may not be readily observed. PLPS usually arises in the deep soft tissues, but has also been reported in the subcutis and the dermis, the latter representing a very rare site of occurrence with few cases reported in the literature.[5] PLPS typically occurs in three morphologic patterns: (a) high-grade pleomorphic malignant fibrous histiocytoma-like sarcoma containing scattered multivacuolated lipoblasts; (b) cellular pleomorphic or spindle cell