Bone marrow involvement of primary cutaneous \(\gamma/\delta\) T-cell lymphoma

A 72-year-old woman had generalized cutaneous nodules and multiple erythematous lesions. A histopathologic examination revealed the infiltration of tumor cells expressing T-cell receptor \(\gamma\) (TCR\(\gamma\)) into the dermis without epidermotropism or angiocentricity, demonstrating a diagnosis of primary cutaneous \(\gamma/\delta\) T-cell lymphoma (PCGD-TCL) (panels A and B; original magnification \(\times 40\) and \(\times 400\), respectively; hematoxylin and eosin stain). Her disease was controlled with local irradiation and electron beam therapy, combination chemotherapies, and mogamulizumab for \(>2\) years but eventually advanced. Medium- to large-sized abnormal cells bearing clumped to dispersed chromatin and a basophilic cytoplasm were detected in the peripheral blood (PB; \(0.047-42.2 \times 10^9/L\)). Some showed vacuolation and a convoluted nucleus (panels C-G; original magnification \(\times 600\); May-Grünwald Giemsa stain). They subsequently proliferated in the bone marrow (BM) (panels H, red arrowheads, and I-K; original magnification \(\times 400\) for panels H-K; stains: May-Grünwald Giemsa [H], hematoxylin and eosin [I], anti-TCR\(\beta\) antibody [J], and anti-TCR\(\gamma\) antibody [K]). Their immunophenotype by flow cytometry was CD3\(^+\)/CD2\(^+\)/CD5\(^+\)/CD4\(^-\)/CD8\(^-\)/CD7\(^-\)/CD56\(^-\)/TCR\(\gamma/\delta\)-1\(^+\).

PCGD-TCL accounts for only 1% of all cutaneous T-cell lymphomas. It occurs in adults and has an aggressive clinical course with B symptoms. Its 2 major cutaneous infiltration patterns are (1) the epidermis and perivascular in the upper dermis (mycosis fungoides-like) and (2) the deep dermis to subcutaneous tissue (panniculitis-like). These lesions often disseminate to extranodal sites. Their involvement in PB is occasionally detected using flow cytometry, but BM, lymph nodes, and spleen are rarely involved.
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