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Composite morphologically and immunohistochemically distinct classical and pleomorphic mantle cell lymphomas

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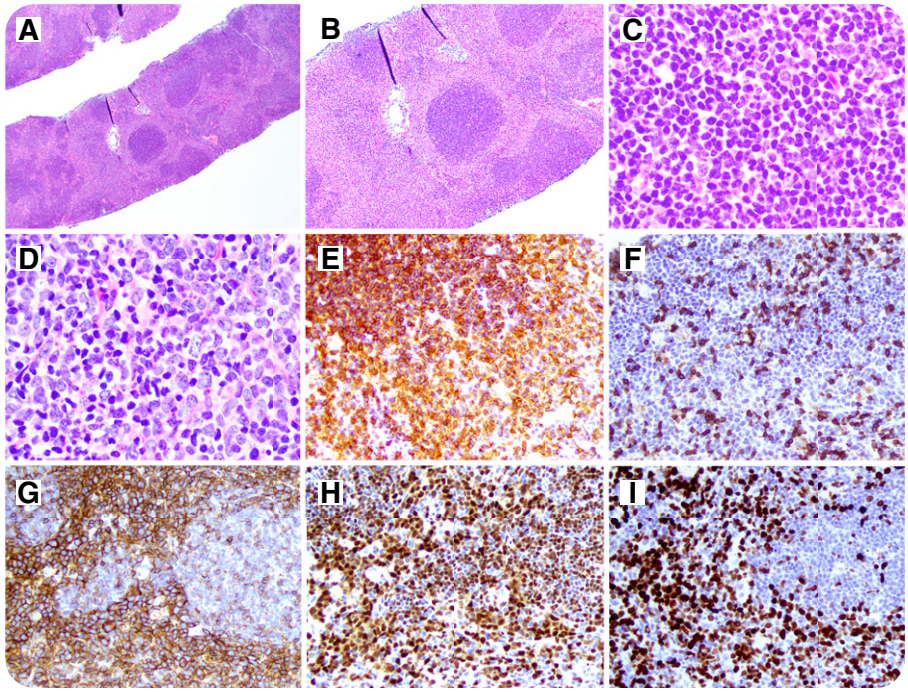

The patient is a 76-year-old woman with right-axillary lymphadenopathy. Hematoxylin-and-eosin staining of core biopsies shows nodules composed of small- to medium-sized atypical lymphoid cells (panels A-C; original magnification: ×20 [A], ×40 [B], ×400 [C]). Interestingly, at the periphery of and in between these nodules are medium-sized to large atypical lymphoid cells with conspicuous nucleoli (panel D; original magnification ×400). The small- to medium-sized atypical lymphoid cells within the nodules are positive for CD20 (panel E; original magnification ×200), negative for CD3 (panel F; original magnification ×200), predominantly negative for CD5 (panel G; original magnification ×200), but positive for cyclin D1 (panel H; original magnification ×200) with a very low proliferation index (panel I; original magnification ×200). However, although the medium-sized to large atypical lymphoid cells are positive for CD20 (panel E) and cyclin D1 (panel H), compared with negative CD3 (panel F), these cells aberrantly coexpress CD5 (panel G) with an estimated high proliferation index of 60% to 70% (panel I). Next-generation sequencing shows *IGH-CCND1* and *CDK*12 R1051* and subclonal *TP53* D184fs*62 and Q167*. Taken together, the overall findings are most consistent with composite mantle cell lymphomas (MCLs) consisting of morphologically well-demarcated and immunohistochemically distinct classical MCL and pleomorphic MCL within a single anatomic site according to World Health Organization classification.

Although a prior case of 2 immunophenotypically distinct composite MCLs has been reported, this is the first documented case of composite MCLs with well-demarcated morphologies and distinct immunophenotypes.

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