blood work
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ALK$^+$ large B-cell lymphoma with aberrant expression of CD3

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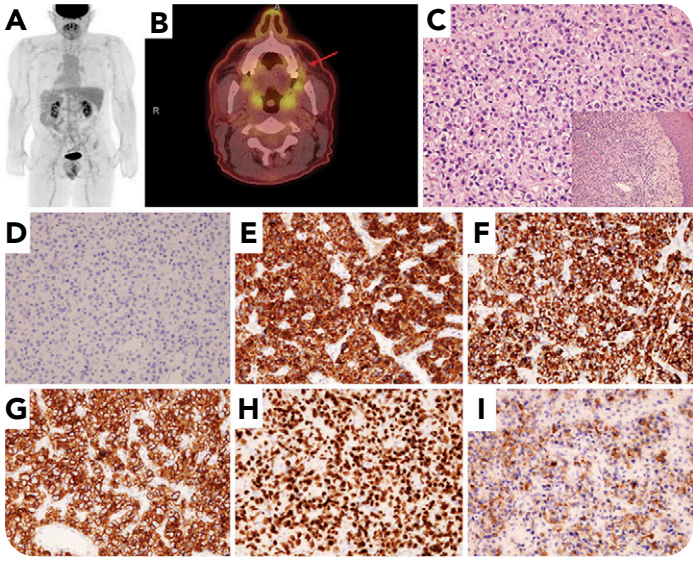

A 56-year-old man presented with a left lower jaw lesion for 1 month. Positron emission tomography/computed tomography was negative for lymphadenopathy (panel A) but showed fluorodeoxyglucose-avid focus within the left upper pterygomandibular raphe (panel B red arrow). A mucosal biopsy showed cohesive growth of atypical large cells with pale nuclei, small nucleoli, and abundant amphophilic cytoplasm (panel C; hematoxylin and eosin stain; 100× objective, original magnification ×1000 [inset, 20× objective, original magnification ×200]). Immunohistochemistry analysis (panels D-I; 40× objective, original magnification ×400) showed that cells were negative for CD20 (panel D) and positive for CD3 (cytoplasmic; panel E), ALK (granular and cytoplasmic; panel F), CD138 (panel G), MUM1.IRF4 (panel H), and EMA (patchy weak; panel I). The neoplastic cells were also weakly positive for OCT2 and BOB.1, and the Ki-67 proliferation index was 60% (not shown). CD4, CD5, CD7, CD30, PAX5, EBV, HHV-8, cytokeratin, S100 protein, and melan-A were negative by immunohistochemistry (not shown). In situ hybridization analysis showed monotypic cytoplasmic κ staining of lymphoma cells (not shown). These results supported the diagnosis of ALK$^+$ large B-cell lymphoma (LBCL).

ALK$^+$ LBCL is a rare neoplasm with a plasmablastic immunophenotype and may aberrantly express T cell–associated markers, most often CD4 or CD43. To our knowledge, aberrant expression of CD3 in ALK$^+$ LBCL has never been reported. The strong CD3 expression and absence of B cell–associated markers in this case created some diagnostic difficulty, resolved by demonstration of ALK expression.

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