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Anaplastic diffuse large B-cell lymphoma: a deceptive morphology

Priyadharshini Sivasubramaniam[1], Aishwarya Ravindran[2]

[1]Department of Laboratory Medicine and Pathology, Mayo Clinic Rochester, MN, [2]Division of Laboratory Medicine-Hematopathology, Department of Pathology, University of Alabama at Birmingham, Birmingham, AL, USA

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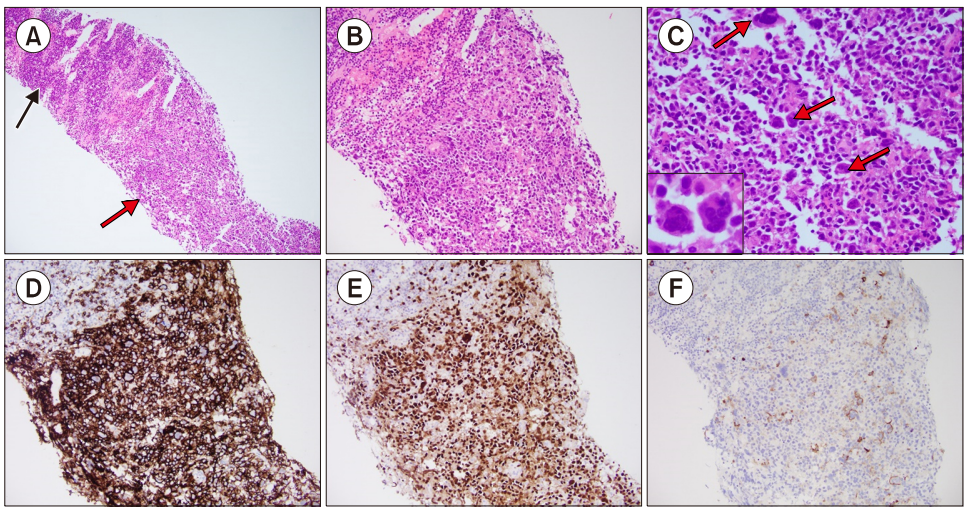
Correspondence to Aishwarya Ravindran, M.D., Division of Laboratory Medicine-Hematopathology, Department of Pathology, University of Alabama at Birmingham, Birmingham 35249-7331, USA, E-mail: aravindran@uabmc.edu



An elderly male without significant past medical history presented with cervical lymphadenopathy. Labs showed anemia (Hb 7.6 g/dL) and elevated WBC count (16×10^9/L) with neutrophilia. Limited core biopsy revealed partial nodal involvement by an overtly malignant proliferation with marked anaplasia including multinucleated forms (**A, B**) and appeared to display a somewhat cohesive pattern of growth suggestive of an epithelioid neoplasm. Flow cytometry showed no immunophenotypic evidence of lymphoma. The primary differential diagnosis based on these findings included a poorly-differentiated carcinoma versus melanoma, however, immunostains for keratin, Melan A and SOX10 were negative. CD45 was only performed subsequently due to receipt of the case for hematopathologist evaluation given the lymphadenopathy. Surprisingly, the anaplastic tumor cells (**A** ×40; **B** ×200; **C** ×400) were diffusely CD45-positive; subsequent immunostains revealed positivity for CD20 (**D** ×200), MUM1 (**E** ×200), BCL6, CD30 (subset, **F** ×200), BCL2, and MYC, diagnostic of diffuse large B-cell lymphoma (DLBCL) with anaplastic morphology (non-germinal center B-cell phenotype, double expressor-MYC+/BCL2+). The tumor was negative for CD10, ALK, cyclin D1, and EBV. Fluorescence in situ hybridization was negative for *MYC* gene rearrangement. Staging bone marrow was not performed. The patient expired at 8 weeks from diagnosis post-one cycle of chemotherapy. Anaplastic DLBCL is a rare morphologic variant and portends an aggressive clinical course compared to those DLBCL without anaplastic features. Flow cytometry may be negative as large B-cells may not survive processing, and morphology is key to establishing prompt diagnosis. This case highlights the histopathologic heterogeneity of anaplastic DLBCL, and underscores the importance of evaluation for a hematolymphoid neoplasm in cases with morphology suggestive of a poorly-differentiated malignancy.