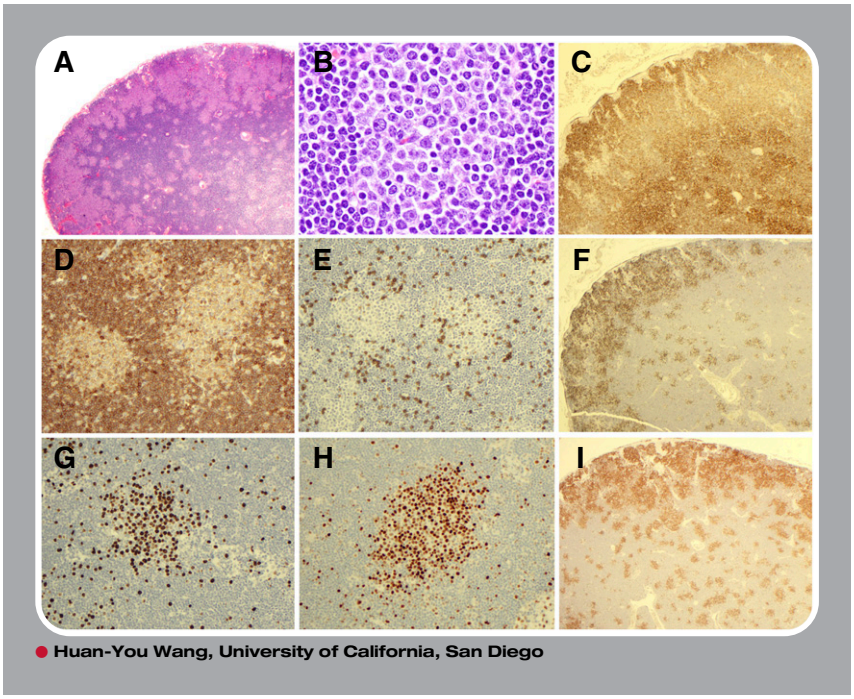
bloodwork
IMAGES IN HEMATOLOGY

Large B-cell lymphoma variant of Richter transformation originates in pseudoproliferation centers of small lymphocytic lymphoma



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Cervical lymph node (LN) dissection for squamous cell carcinoma was performed on a 69-year-old man in whom chronic lymphocytic leukemia (CLL) was diagnosed in 2004. Fluorescence in situ hybridization determined that the CLL had an ATM deletion. Prior to surgery, the patient experienced a 30-lb (~14-kg) unintentional weight loss and diffuse lymphadenopathy. The LN shows numerous discrete foci (inner portion) to confluent (periphery) areas composed of medium to large atypical lymphoid cells in the background of small lymphocytic lymphoma (SLL) (panels A-B; hematoxylin and eosin stain, original magnifications ×20 [A] and ×400 [B]). These atypical large lymphoid cells are positive for CD20 (panel C, bright; original magnification ×40) with aberrant coexpression of CD5 (panel D, dim; original magnification ×200) compared with negative CD3 (panel E; original magnification ×200). In contrast to surrounding SLL, these atypical large lymphoid cells display ~60% proliferation index by Ki-67 in both confluent (panel F; original magnification ×20) and nodular regions (panels F-G; original magnifications ×20 [F] and ×200 [G]). Interestingly, the large atypical cells express C-MYC (panel H; original magnification ×200) and MUM1 (panel I; original magnification ×20). The overall findings are most compatible with the large B-cell lymphoma (LBCL) variant of Richter transformation (RT).

The unique case herein suggests that it is the pseudoproliferation center (PC) of SLL that gives rise to LBCL with resultant RT. From discrete foci of large B cells colocalized with PCs to confluent growth, this case sheds light on the possible histogenesis of the LBCL variant of RT, based on the morphologic and immunohistochemical features.

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