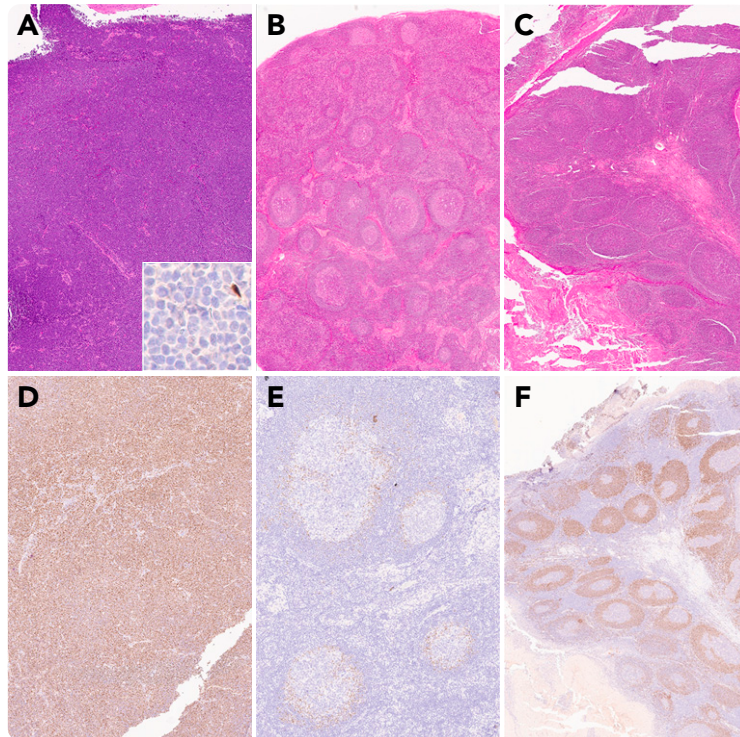


Progression of $CCND1^{-}$ in situ mantle cell neoplasia to $CCND1^{-}$ mantle cell lymphoma

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A 53-year-old woman presented with a mass at the base of her tongue. Biopsies of the lesion demonstrated diffuse effacement of the submucosal tissue by intermediate-sized lymphocytes with atypical centrocytic morphology (A). These lymphocytes were $CD20^{+}$ and $CD5^{+}$ B cells that were negative for $CCND1$ (cyclin D1) (A inset). The lymphocytes were diffusely positive for SOX11 (D) and diagnostic of $CCND1^{-}$ mantle cell lymphoma. Fluorescence in situ hybridization confirmed the absence of $CCND1$ rearrangement. The patient had undergone a right neck lymph node biopsy and bilateral tonsillectomy 9 and 5 years previously, respectively, both with benign diagnoses. These specimens were reevaluated given the patient's new lymphoma diagnosis. The initial lymph node biopsy demonstrated reactive morphologic features including follicular hyperplasia and dermatopathic changes

(B). $SOX11^{+}$ lymphocytes were present, restricted to the inner mantle zones (E). The subsequent tonsil biopsy demonstrated a subtle expansion of the mantle zones (C) by numerous $SOX11^{+}$ cells (F).

These specimens illustrate progression of in situ mantle cell neoplasia to a mantle cell lymphoma that first exhibited a mantle zone pattern and later diffuse growth. All were $CCND1^{-}$, demonstrating that $CCND1^{-}$ mantle cell lymphomas may sometimes be preceded by $CCND1^{-}$ in situ mantle cell neoplasia.

For images A, D, and E, $\times 40$ total magnification; B, C, and F, $\times 20$ total magnification; and A inset, $\times 400$ total magnification.