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Comparative analysis of tumor capsule thickness and other histologic features in encapsulated follicular variant of papillary thyroid carcinoma (EFVPTC) and non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP)

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Recent reclassification of a subset of non-invasive encapsulated follicular variant of papillary thyroid carcinoma (EFVPTC) tumors as non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP) has led to important changes in the clinical management of patients with these indolent lesions. Although there are established diagnostic criteria to differentiate NIFTP from EFVPTC, our objective was to determine further differences in histological characteristics between NIFTP and non-invasive EFVPTC. Additionally, we sought to identify histological differences between non-invasive and invasive EFVPTC lesions beyond the key finding of invasion. 68 encapsulated follicular lesions with papillary-like nuclear features from patients treated at Thomas Jefferson University Hospital were subcategorized into NIFTP, non-invasive EFVPTC, and invasive EFVPTC based on current diagnostic criteria. Histological characteristics such as capsule thickness, lesion size, fibrosis, and presence of established exclusionary criteria for NIFTP were recorded. Capsule thickness was significantly smaller in NIFTP ($p < 0.02$) and significantly larger in invasive EFVPTC ($p < 0.0003$) when compared to non-invasive EFVPTC. Additionally, tumor size and extent of fibrosis was significantly greater in invasive EFVPTC compared to both NIFTP and non-invasive EFVPTC ($p < 0.01$). These additional features should be taken into consideration upon pathologic examination of a lesion in this category of thyroid neoplasms and may provide additions to pre-existing diagnostic criteria to aid in diagnosis and risk stratification of patients with thyroid tumors.