

## **INTRATHYROIDAL TUMORS PRESENTING WITH EXTRANODAL EXTENSION: WHAT ARE WE MISSING?**

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**Background/Purpose:** Extranodal extension (ENE) is a poor prognostic indicator in well-differentiated thyroid cancer. We have demonstrated that extrathyroidal extension (ETE) predicts ENE in patients with positive lymph nodes, indicating that the primary tumor biology is conferred to the lymph nodes. In an effort to determine if there were other histologic features of the primary tumors that indicated an aggressive biology, we examined a subset of patients with intrathyroidal (T1/T2) disease whose lymph nodes had ENE.

**Methods:** A review was conducted from January 2004 to March 2013. The histologic features of ETE negative ENE positive tumors (group A, 10 cases) were compared with a random sample of ETE negative ENE negative, node positive patients (group B, 27 cases). Cases were reviewed for: size, capsule presence, infiltration, sclerosis, lymphocytic thyroiditis (LT), psammoma bodies, lymph-vascular invasion (LVI), perineural invasion (PNI), architecture/cytomorphology, and focality. Size was compared using the Mann Whitney test, while the remaining features were compared using a Fischer exact test.

**Results:** The breakdown of pathologic features of A/B were as follows: 2.28cm/1.46cm mean tumor size, 90%/67% unencapsulated, 100%/89% infiltrative, 100%/89% sclerotic, 60%/52% LT, 30%/59% positive psammoma bodies, 0%/11% LVI, 0%/4% PNI, 90%/96% classic architecture, 50%/44% multifocal. Neither size (p=0.072) nor the other 9 histologic features examined reached statistical significance.

**Discussion & Conclusion:** None of the histologic features appeared to significantly predict ENE. Further examination of intrathyroidal tumors at a molecular level is necessary to determine if there are any identifiable features of intrathyroidal tumors that predict ENE and thus a more aggressive phenotype.