

## Poster 283

*Thyroid Cancer Saturday Trainee Poster Contest Finalist Clinical*

### **FIVE YEAR EXPERIENCE WITH AFIRMA GENE EXPRESSION CLASSIFIER (GEC) AT A SOUTHERN CALIFORNIA TEACHING HOSPITAL**

H.M. Huribal, L.H. Clarine, M. Levine

Endocrinology, Scripps Clinic, San Diego, CA

Fine needle aspiration (FNA) biopsy, the most frequent methodology for thyroid nodule evaluation, is fraught with indeterminate cytopathology in 15–30% of cases. Previously, surgery for definitive pathologic diagnosis was recommended, with the vast majority having benign surgical pathology. Afirma Gene Expression Classifier (GEC) offers potential preoperative reclassification of indeterminate to “benign” or “suspicious” with a NPV of 94%. This study reviews the role of the Afirma GEC since implementation at Scripps Clinic in La Jolla, California. 60 month, single center retrospective review of 2,038 FNA cases performed at Scripps Clinic from 2011–2015, of which 59 indeterminate cases were analyzed by Thyroid Cytopathology Partners (TCP) and subsequently 29 TCP indeterminate cases by Afirma GEC. The study cohort was 56 cases, 3 excluded due to TCP nondiagnostic results. Mean age 52.5 (range 20–93 years) including 43 females (77%) and 13 males (23%) (male:female ratio of 1:3.3). 41 Scripps Clinic cases (73%) identified as atypia or follicular lesion of undetermined significance (AUS/FLUS) and 14 (25%) as suspicious for follicular neoplasm (SFN). TCP reclassified 24 (43%) indeterminate to benign, 4 of which had surgery for compressive symptoms with 100% benignity on surgical pathology. 3 cases (5.3%) reclassified as malignant with 100% papillary thyroid carcinoma (PTC) on surgical pathology. Afirma GEC performed on 29 cases (33.9%), 13 benign (45%) with no surgical intervention and 16 suspicious (55%), of which 9 underwent recommended surgery with 1 follicular carcinoma (11%) identified. The absence of microcalcifications was the only nodule characteristic with statistical significance between GEC benign and GEC suspicious groups ( $p = 0.03$ ). Afirma GEC is a useful tool in preoperative classification of indeterminate nodules. At Scripps Clinic, since the inception of Afirma GEC, there was a 23% reduction in thyroid surgery performed on indeterminate

nodules. Loss of patient follow up contributes to the challenge of comparison between the Scripps Clinic experience and previously reported GEC NPV. Overall, the review demonstrates that a conservative approach with the use of Afirma GEC can limit unnecessary surgery.