

## **ENDOCRINOLOGIST PERFORMED ULTRASOUND-GUIDED FINE NEEDLE ASPIRATION OF THYROID NODULES IN TORONTO**

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**Background/Purpose:** Radiologists traditionally perform ultrasound-guided fine needle aspiration (FNA) of thyroid nodules in Canada, with selection of nodules for FNA based primarily on nodule size. Most updated international guidelines for thyroid nodule management however recommend a consideration of medical history and sonographic features to delineate nodule/s for FNA.

**Methods:** This is a retrospective analysis of FNAs performed by an endocrinologist in three centers of greater Toronto area (Malton, Oakville and Thornhill). The study dataset includes 585 consecutive FNAs performed among 504 patients, with all specimen reported by a single cytopathologist.

**Results:** Cytology was reported as: Benign in 75%, malignant or suspicious in 5%, Atypia in 3%, follicular neoplasm in 2% and nondiagnostic in 16% samples. Malignancy rate (suspicious/malignant cytology) positively associated with male gender, age, radiation history and sonographic features (hypoechoogenicity, irregular borders, microcalcifications and intranodular vascularity). Endocrinologist documented high suspicion on FNA encounter was most predictive for malignancy. Nodule size (range 7 mm to 7.4 cm) did not associate with either malignancy or nondiagnostic rates.

80% sufficiency was observed on repeat FNAs among subjects with previous FNAs performed at other facilities (n=162), with: 6% malignancy rate for previous nondiagnostic cytology reports; 20% malignancy rate for previous cytology reported as atypia.

**Discussion & Conclusion:** A combination of medical history and sonographic features documented by an endocrinologist yields a greater prediction of malignancy rates vs. the commonly used size criteria for selecting thyroid nodules for FNA in Canada. Overall, FNA sufficiency and malignancy rates in this Toronto-based study are consistent with published global literature.