

## **ULTRASOUND GUIDED FINE-NEEDLE ASPIRATION OF THYROID NODULES – DOES SIZE MATTER?**

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**Background/Purpose:** Authors have reported that fine-needle aspiration (FNA) biopsies of thyroid nodules  $\geq 4$ cm are unnecessary since they often yield inaccurate results compared to nodules  $< 4$ cm. They therefore recommend diagnostic thyroid lobectomies for nodules  $\geq 4$ cm and FNA for smaller nodules. The aim of this study is to evaluate the accuracy and predictive values of ultrasound guided FNA (USFNA) of nodules  $\geq 4$ cm compared to smaller nodules.

**Methods:** A retrospective study at the McGill University Thyroid Cancer Center was performed on patients between 2006-2012 comparing the USFNA and post-operative pathology diagnoses of nodules  $\geq 4$ cm versus those  $< 4$ cm. Pre-operative USFNA results were divided into benign, indeterminate and malignant/suspicious for malignancy subgroups. Postoperative results were separated into benign and malignant groups. SPSS was used for data analysis using the chi-square method.

**Results:** There were 225 patients with nodules  $\geq 4$ cm and 773 patients with nodules  $< 4$ cm. The sensitivity, specificity, positive predictive value and negative predictive value for USFNA of nodules  $> 4$ cm were 84.62% (CI 71.91-93.10), 91.49% (CI 79.6-97.58), 91.67% (CI 80.0-97.63) and 84.31% (CI 71.4–92.95), respectively. The sensitivity, specificity, positive predictive value and negative predictive value for USFNA of nodules  $< 4$ cm were 90.48% (CI 86.1-93.8), 85.92% (CI 75.6-93.02), 95.8% (CI 92.41-97.96) and 71.76% (CI 60.95-81.0), respectively. The difference in diagnostic accuracy of USFNA between both groups was not statistically significant ( $p > 0.05$ ).

**Discussion & Conclusion:** This study shows that USFNA of nodules  $\geq 4$ cm is as accurate as smaller nodules. It is therefore suggested that these nodules be managed similarly to their smaller counterparts.