



## THYROID CANCER

### What is the risk of cancer in suspicious thyroid biopsies

#### BACKGROUND

Thyroid nodules are very common and the concern is whether or not a nodule is a thyroid cancer. Many nodules, especially those larger than 1- 1.5 cm are evaluated by fine-needle aspiration biopsy. This procedure is very accurate in diagnosing nodules that are noncancerous (benign) and those that are definitely cancer. However, 10-15% of biopsies are reported as indeterminate or suspicious. In these cases, surgery is required to determine if the nodule is cancerous or benign. In this study, the authors examined the clinical features of the nodules that were biopsied with suspicious results.

#### THE FULL ARTICLE TITLE:

Castro MR et al Predictors of malignancy in patients with cytologically suspicious thyroid nodules. *Thyroid* 2011;21:1191-8. Epub October 18, 2011.

#### SUMMARY OF THE STUDY

A total of 573 (8%) of 7039 thyroid biopsy samples obtained from January 2004 to September 2008 were reported as suspicious. Of these, 462 patients underwent thyroid surgery. Of this patient group, the average age was 53 years, 69% were female and 65% had multiple nodules with an average size of 2.8 cm. A summary of the biopsy results showed that 326 (70.6 %) had lesions suspicious

for follicular or hurthle-cell lesions, 126 (27.3%) were suspicious for papillary thyroid cancer and 10 (2.1%) were suspicious for other cancers. The cancer rate was 15% for nodules that were suspicious for follicular and hurthle-cell lesions and 77% for those suspicious for papillary cancer. Multiple nodules, as compared with a single nodule, had a higher risk of cancer (41.1% vs. 26.4%). In patients with cytology suspicious for follicular and Hurthle-cell neoplasm, cancer risk was higher in those who were on thyroid hormone therapy than those not on therapy (37.7% vs. 16.5%).

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study confirms that biopsies that are suspicious for follicular or hurthle cell lesions are relatively low (15%) while the risk for cancer in those that are suspicious for papillary cancer is relatively high (77%). The main new finding is that suspicious biopsies are more likely to indicate a cancer if the patient has multiple thyroid nodules as compared to a single nodule.

— Alan P. Farwell, MD

#### ATA THYROID BROCHURE LINKS

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

#### ABBREVIATIONS & DEFINITIONS

**Thyroid nodule:** an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (benign), ~5% are cancerous.

**Thyroid Ultrasound:** a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

**Thyroid fine needle aspiration biopsy (FNAB):** a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to with-draw cells from the thyroid nodule. Patients usually return home or

to work after the biopsy without any ill effects.

**Suspicious thyroid biopsy:** this happens when there are atypical cytological features suggestive of, but not diagnostic for malignancy. Surgical removal of the nodule is required for a definitive diagnosis. Some centers include the indeterminate biopsies within the suspicious category.

**Indeterminate thyroid biopsy:** this happens usually when the diagnosis is a follicular or hurthle cell lesion. Follicular and hurthle cells are normal cells found in the thyroid. Current analysis of thyroid biopsy results cannot differentiate between follicular or hurthle cell cancer from noncancerous adenomas. This occurs in 15-20% of biopsies and often results in the need for surgery to remove the nodule.

**Papillary thyroid cancer:** the most common type of thyroid cancer.