



## THYROID NODULES

### A taller-than-wide thyroid nodule shape on ultrasound imaging is associated with increased risk of thyroid cancer

#### BACKGROUND

Thyroid nodules are the most common endocrine problem, occurring in up to half of patients that have any type of imaging study that includes the neck. The concern about a thyroid nodule is the possibility that the nodule could contain thyroid cancer. The most recent American Thyroid Association guidelines recommend using thyroid ultrasound to assess the risk of thyroid cancer. The size of the nodule on ultrasound is a major determinant of which nodules should be biopsied. Other features on ultrasound also raise suspicion of cancer. For example, prior studies have shown that nodules with a greater height than width (taller-than-wide) on ultrasound imaging are more likely to be cancerous than round nodules shaped like a ball. This study evaluated the association between a taller-than-wide ultrasound finding and the presence of thyroid cancer.

#### THE FULL ARTICLE TITLE:

Moon et al. A taller-than-wide shape in thyroid nodules in transverse and longitudinal ultrasonographic planes and the prediction of malignancy. *Thyroid* 2011;21(11):1249-1253.

#### SUMMARY OF THE STUDY

Ultrasound images from 471 thyroid nodules from 435 patients were studied. There were 370 women and 65 men

and their average age was 50.4 years. The final diagnosis was determined from evaluation of 145 surgically removed and of cells from fine needle aspiration biopsy in 339 patients. A taller-than-wide shape of the nodule was found in 44-68% of nodules ultimately found to be cancerous depending on which ultrasound view was examined. In contrast, a taller-than-wide shape was found 5.5-17.9% of non-cancerous nodules.

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

This study shows that an ultrasound finding of taller-than-wide in a nodule increases the possibility that the nodule is cancerous and should prompt further evaluation with fine needle aspiration biopsy. Since ultrasound imaging is rapidly becoming the standard for evaluation of thyroid nodules, the presence of concerning features such as taller-than-wide helps the physician determining the urgency for performing a biopsy.

— Ruth Belin, MD

#### ATA THYROID BROCHURE LINKS

Thyroid nodules: [http://thyroid.org/patients/patient\\_brochures/nodules.html](http://thyroid.org/patients/patient_brochures/nodules.html)

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 sound waves 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 withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.