



## THYROID NODULES

### Benign thyroid nodules remain benign during follow-up

#### BACKGROUND

Thyroid nodules are very common and increase in frequency with age. Most nodules are found during examination for other conditions. Ultrasound imaging is used to identify and characterize the size of thyroid nodules. Larger nodules (over 1–1.5 cm) usually undergo fine-needle aspiration biopsy to determine if cancer is present. Only ~8% of thyroid nodules are cancerous, so the vast majority are non-cancerous (benign). When the nodule is benign, guidelines recommend repeat ultrasound evaluation and repeat biopsy if there is significant growth of the nodule.

The goals of this multicenter Italian study were to determine how often and how quickly benign nodules grow and to determine whether cancer was diagnosed in nodules that grew during a 5-year period of observation.

#### THE FULL ARTICLE TITLE:

Durante C et al The natural history of benign thyroid nodules. *JAMA* 2015;313:926-35.

#### SUMMARY OF THE STUDY

The study was performed in four academic centers in Italy. Patients were enrolled between January 2006 and January 2008. Patients underwent complete evaluation, including tests of thyroid function and anti-thyroid antibodies and ultrasound examination for thyroid nodules.

All nodules that had ultrasound features suspicious for malignancy or were solid and larger than 10 mm were biopsied. Suspicious features included hypoechogenicity, microcalcifications, irregular margins, taller-than-wide shape, and intranodular vascularity. When a patient had multiple suspicious nodules, only the largest nodule was biopsied. The size of each nodule was measured in three dimensions. Each patient had annual ultrasound examination and thyroid function tests. When a nodule was found to be suspicious during the follow-up, a repeat biopsy was performed. At the 5-year follow-up, most nodules >1 cm underwent repeat biopsy.

A total of 992 patients were studied, with a total of 1567 nodules. The average age was 52 years, 82% were women, and about half had a family history of thyroid

nodules. In 579 patients, 630 nodules (40% of the total) were classified as benign based on biopsy. Data representing 5 years of follow-up were available for 875 patients. Shorter follow-up occurred in 117 patients; 71 were lost to follow-up, 4 died of unrelated causes, and 42 had thyroidectomy for nodule growth or suspected thyroid cancer.

In 69% of the patients, the nodule size remained stable during follow-up. In 18.5%, one or more nodules shrank. Significant growth of the nodule occurred in 15.4% of patients. Overall, 174 of the 1567 original nodules increased in size, with an average change in the largest diameter of more than 4.9 mm. New nodules were found in 93 patients (9.4%). Multiple nodules, nodule volume, younger age, and male sex were associated with nodule growth, whereas age >60 years was associated with a lower growth rate. Repeat biopsy was performed in 365 cases, with confirmation of the original diagnosis in 99%.

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

This study shows that benign thyroid nodules usually remain stable, as 85% of asymptomatic benign thyroid nodules did not change in size during 5 years of follow-up. Only 15% of nodules grew significantly during a 5-year follow up and a new finding of thyroid cancer was rare. Less than 1% of patients had features of a thyroid cancer during careful follow-up. Of the 7 cancers identified, 2 were in nodules that were not present in the initial evaluation. The data show that benign nodules may grow, but only a small proportion are diagnosed as cancers during follow-up.

— Ronald B. Kuppersmith, MD, FACS

#### ATA THYROID BROCHURE LINKS

Thyroid Nodules: <http://www.thyroid.org/what-are-thyroid-nodules>

Thyroid Function Tests: <http://www.thyroid.org/blood-test-for-thyroid>

Thyroid cancer: <http://www.thyroid.org/cancer-of-the-thyroid-gland>



## THYROID NODULES, continued

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

## Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of July is **Graves' Disease Awareness Month** and a bracelet is available through the [ATA Marketplace](#) to support thyroid cancer awareness and education related to thyroid disease.

