



THYROID NODULES

Thyroid Imaging Reporting and Data Systems (TIRADS) accurately determine the risk of cancer in small thyroid nodules

BACKGROUND

Thyroid nodules are very common, occurring in up to 50% of people in the United States. The concern of any nodule is whether it is a thyroid cancer. Fortunately, ~95% of thyroid nodules are benign. At present, the only way to make a diagnosis of thyroid cancer prior to surgery is with a thyroid biopsy. Thyroid ultrasound is important in identifying a nodule and the appearance on ultrasound in addition to size are the key factors determining the need for biopsy. The more suspicious features thyroid nodule has the lower is the threshold for thyroid biopsy. In rare cases, the appearance on ultrasound alone can be diagnostic of either cancerous or benign nodules. A lot of research is being done to expand the characteristics of a nodule on ultrasound into a risk assessment of the likelihood of thyroid cancer.

The American College of Radiology Thyroid Imaging Reporting and Data Systems (TIRADS) is a 5 point classification to determine the risk of cancer in thyroid nodules based on ultrasound characteristics. This system has been mainly used for thyroid nodules that are ≥ 1 cm. This study explores the accuracy of TIRADS to predict cancer in thyroid nodules that are ≤ 1 cm.

FULL ARTICLE TITLE

Mendes GF et al 2018 Fine needle aspiration biopsy of thyroid nodule smaller than 1.0 cm: accuracy of TIRADS classification system in more than 1000 nodules. Br J Radiol 91:20170642. Epub 2017 Dec 22. PMID: 29182368.

SUMMARY OF THE STUDY

A total of 1116 thyroid nodules < 1 cm in 951 patients who had a thyroid biopsy were selected for analysis. Thyroid nodules were classified according to TIRADS based on their US features. In the TIRADS, the following four ultrasound features were scored 1 point each: irregular margins, hypoechogenicity (darkness), taller-than-wide shape, and microcalcifications; marked hypoechogenicity scored 2 points. TIRADS 1 was defined as normal thyroid, 2 as the presence of benign features such as a cystic or spongiform nodule, 3 as the absence of suspicious features, and 4A as 1 point, 4B as 2 points, 4C as 3 to 4 points, and 5 as 5 points, respectively.

Cancer rates were 0.9% in TIRADS 2, 2.9% in TIRADS 3, 12.3% in TIRADS 4A, 34.4% in TIRADS 4B, 66.6% in TIRADS 4C, and 86% in TIRADS 5.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

A simple 5-category TIRADS analysis was able to accurately assess the risk of cancer in thyroid nodules < 1 cm. This is the first study validating TIRADS in thyroid nodules that are ≤ 1 cm. We are not yet at the point where a diagnosis of cancer can be made with ultrasound alone without a thyroid biopsy. However, better understanding of the characteristics of benign nodules may help decrease the need for a biopsy in some patients. Understanding the risk of cancer in these small thyroid nodules can guide the management in selected patients.

— Valentina D. Tarasova, M.D.

ATA THYROID BROCHURE LINKS

Thyroid Nodules: <https://www.thyroid.org/thyroid-nodules/>

Fine Needle Aspiration Biopsy of Thyroid Nodules: <https://www.thyroid.org/fna-thyroid-nodules/>





THYROID NODULES, continued

ABBREVIATIONS AND 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.

Microcalcifications: Small flecks of calcium within a thyroid nodule, usually seen as small bright spots on ultrasonography. These are frequently seen in nodules containing papillary thyroid cancer.

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 **September** is **Thyroid Cancer Awareness Month** and a bracelet is available through the **ATA Marketplace** to support thyroid cancer awareness and education related to thyroid disease.

