



THYROID NODULES

Validation of American Thyroid Association ultrasound risk assessment of thyroid nodules selected for biopsy

BACKGROUND

A thyroid nodule is an abnormal growth of thyroid cells that forms a lump within the thyroid gland. Thyroid nodules are very common. Although the majority of these nodules are non-cancerous, a small proportion do contain thyroid cancer. A thyroid ultrasound is an accurate test that can determine nodule characteristics and help physicians decide which nodules should be evaluated with a thyroid biopsy.

In 2015, the American Thyroid Association published updated guidelines regarding the evaluation and treatment of thyroid nodules and thyroid cancer. These new guidelines recommend using a combination of the thyroid nodules' appearance on ultrasound and their size to determine whether they should be evaluated with a biopsy. Depending on the thyroid nodule pattern seen on ultrasound, five categories were created with different risk of cancer. These include high (70–90%), intermediate (10–20%), low (5–10%), very low (<3%), and benign (<1%), with the percentages denoting risk for cancer. The aim of this study was to evaluate the ultrasound appearance of thyroid nodules and correlate this with cytology and pathology results in order to validate the ultrasound risk-pattern categories proposed by the American Thyroid Association.

THE FULL ARTICLE TITLE

Tang, AL et al. Validation of American Thyroid Association Ultrasound Risk Assessment of Thyroid Nodules Selected for Ultrasound Fine-Needle Aspiration. *Thyroid* 2017;27:1077-82.

SUMMARY OF THE STUDY

A total of 199 patients with suspicious or dominant thyroid nodules who had thyroid biopsy between March

2015 and May 2016 at a single institution were included in the study. For each patient a thyroid ultrasound was initially performed in the office and the nodule was classified in a risk category: high, intermediate, low, very low or benign, based on the guidelines mentioned above. Subsequently, biopsy of the nodules was performed. In total, 64 patients had thyroid surgery because of the biopsy result or because of the large size of the nodule.

The study showed that the nodules that were found to be cancer or suspicious for cancer by biopsy correlated with the following ultrasound risk pattern: high (77%), intermediate (6%), low (1%) and very low (0%). Among the 71 nodules that were indeterminate by biopsy, 52 were removed by surgery. Their cancer rates correlated with the following ultrasound risk pattern: high (100%), intermediate (21%), low (17%) and very low (12%). Overall, this study found a good correlation between the ultrasound risk pattern categories established by the 2015 American Thyroid Association guidelines and the pathology results in the patients studied.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is an important study as it reinforces the validity of the recommendations made by the American Thyroid Association and helps to encourage physicians to use these guidelines when treating their patients with thyroid nodules. It is essential to consider the ultrasound appearance of thyroid nodules when determining the appropriate management for each patient. It is especially important to take into consideration that the high suspicion ultrasound pattern for thyroid nodules is highly predictive of thyroid cancer.

— Maria Papaleontiou, MD

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 & 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.

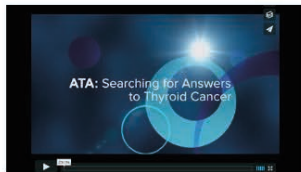
Thyroid ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle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

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.

Indeterminate thyroid biopsy: this happens a few atypical cells are seen but not enough to be abnormal (atypia of unknown significance (AUS) or follicular lesion of unknown significance (FLUS)) or 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.

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