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THYROID NODULE

Can the rate of thyroid nodules that are non-diagnostic after a biopsy be reduced?

BACKGROUND

Thyroid nodules are very common, occurring in up to 50% of patients. The concern about a thyroid nodule is whether this represents a thyroid cancer, which occurs in 5–6% of thyroid nodules. Depending upon the size and appearance of the nodule on ultrasound, the next step to evaluate a nodule is a thyroid biopsy. In general, there are two separate techniques of doing the procedure. Both require placement of a needle into the nodule but the method of collecting the sample differs. In the aspiration technique the sample is obtained by suction into a syringe whereas in the non-aspiration technique the sample is collected in a needle (called capillary action).

In up to 10% of biopsies, a diagnosis cannot be made since there are too few cells and the result is called non-diagnostic. In some cases, such as aspiration of a cyst where few cells would be present, this is expected. In other nodules, a non- diagnostic results usually requires a repeat biopsy. This study reviewed 24 published studies to compare the rate of non-diagnostic biopsy between the aspiration technique and the capillary action technique.

THE FULL ARTICLE TITLE

Moss WJ et al 2018 Needle biopsy of routine thyroid nodules should be performed using a capillary action technique with 24- to 27-gauge needles: a systematic review and meta-analysis. Thyroid 28:857–863. Epub 2018 Jun 5. PMID: 29742978.

SUMMARY OF THE STUDY

This study reviewed 24 studies, with a total of 4428 thyroid nodules; 20 of these compared biopsies using capillary action and aspiration, while 6 evaluated the size of the needles. The results of the study indicate that the rate of non-diagnostic samples were significantly lower in patients undergoing biopsy through capillary action as opposed to suction /aspiration. Smaller needles were also better as compared to larger gauge needles.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that biopsies done by capillary action rather than on aspiration leads to a significant reduction in the rate of non-diagnostic results. This is important for patients, as per current practice guidelines most of these nodules would require a repeat biopsy. This often leads to a delay in diagnosis and contributes to a patient's concerns and anxiety.

—Vibhavasu Sharma, MD, FACE

ATA THYROID BROCHURE LINKS

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

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

THYROID NODULE, 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 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.

Inadequate/Insufficient biopsy: this happens with not enough cells are obtained during the biopsy to provide a diagnosis. This occurs in 5–10% of biopsies. This often results in the need to repeat the biopsy.

Non-diagnostic thyroid biopsy: this happens when some atypical cells are found but not enough to provide a diagnosis. This occurs in 5–10% of biopsies. This often results in the need to repeat the biopsy.