



THYROID CANCER

Defining significant changes in ultrasound appearance during active surveillance of small papillary thyroid cancers

BACKGROUND

Thyroid cancer is the fastest rising cancer in the United States, with the most common type being papillary thyroid cancer. Many newly detected thyroid cancers are small (<1 cm) and many studies suggest that these small cancers may not have to be removed by surgery. Instead, they can be followed by thyroid ultrasound, known as active surveillance. Indeed, active surveillance of thyroid cancer has become more common as an alternative to surgery. Ultrasound is used to monitor for possible growth and change in either the longest diameter or the total volume of the small cancer. If the small cancer grows during active surveillance, then surgery is recommended.

The present study looks at how consistent and reliable measurements are between different operators of the ultrasound equipment. Since one definition of significant change is growth of as little as 3 mm in the longest dimension, the investigators want to know how consistent different ultrasound operators make the same measurement thyroid nodules.

THE FULL ARTICLE TITLE

Chung SR et al 2020 Interobserver reproducibility in sonographic measurement of diameter and volume of papillary thyroid microcarcinoma. *Thyroid*. Epub 2020 Dec 7. PMID: 33287640.

SUMMARY OF THE STUDY

This was a study of patients with small papillary thyroid cancers who had their ultrasound images reviewed by two experienced people and who performed measurements of the nodules where the papillary thyroid cancer was discovered. The main outcome was to see how consistent

the two ultrasound operators were at getting the same measurements of the nodules of interest. The description of the nodules (how light or dark they were, the presence of microcalcifications, etc) were compared between the operators as well.

Almost 200 nodules from 188 patients with an average size of just over 6 mm were evaluated. The measure of how consistent the nodules were measured between the two operators was almost 72% for total volume measurement and almost 24% for maximum nodule diameter. In other words, there was up to a 72% difference of measurement between the volume measurement between the two observers and up to a 24% difference between the maximum diameter measurements.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Even with experienced operators and a set of rules for how to measure thyroid nodules/cancers, there can a significant difference in measurements of thyroid nodules among two or more people. This is important for patients as small changes in thyroid nodule/cancer measurements may be due to differences in the measurement technique of the operator of the ultrasound and not a true change in the size of the nodule or cancer. This may inform patients of how worried (or not worried) they should be when there is a change in size of only a few millimeters when monitoring growth of known thyroid cancers. It is possible the changes reported are just due to the measurement technique. Further study is needed to clarify what is actual significant growth that would lead to a recommendation for surgery.

— Joshua Klopper, MD

ATA THYROID BROCHURE LINKS

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

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>





THYROID CANCER, 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.

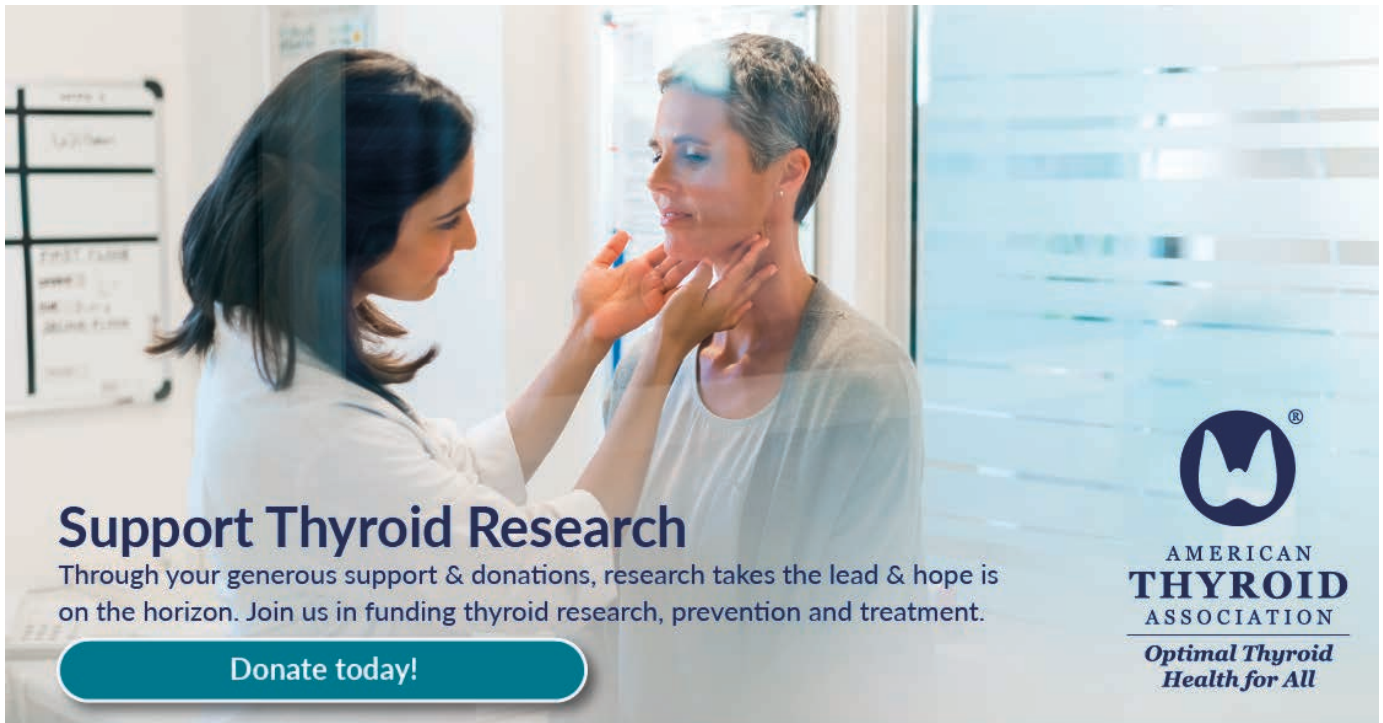
Thyroid Ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle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

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.

Papillary thyroid cancer: the most common type of thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).


Papillary microcarcinoma: a papillary thyroid cancer smaller than 1 cm in diameter.

Active surveillance: the term for deferring surgery for small thyroid cancers by monitoring them over time with ultrasound and physical exam



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