



THYROID NODULES

Thyroid nodule macrocalcification does not mean the nodule is benign

BACKGROUND

Thyroid nodules are the most common endocrine problem, occurring in up to half of patients that have any type of imaging study that includes the neck. The concern about a thyroid nodule is the possibility that the nodule could contain a thyroid cancer. The most recent American Thyroid Association guidelines for evaluation of thyroid nodules and cancer recommend using thyroid ultrasound to guide the clinician in the selection of nodules that need biopsy in order to exclude cancer. The thyroid ultrasound finding of small flecks of calcium (microcalcifications) are very specific for papillary thyroid cancer. While the general feeling is that large flecks of calcium (macrocalcifications) only occur in benign, non-cancerous nodules, the actual risk for cancer associated with macrocalcifications is less well known. The purpose of this study was to determine the clinical usefulness of calcification patterns of thyroid nodules found on ultrasound in predicting cancer.

THE FULL ARTICLE TITLE:

Lu et al, Clinical value of using ultrasound to assess calcification patterns in thyroid nodules. *World J Surg* 2011;35:122-7.

SUMMARY OF THE STUDY

A total of 2122 thyroid nodules were examined in 1498 Chinese patients within a month before thyroidectomy. Calcification patterns including macrocalcifications, microcalcifications, egg-shell/rim calcifications and isolated calcifications were correlated with the final diagnosis. Some

type of calcification was found on ultrasound in 15.7% of benign and 49.6% of cancerous nodules. A total of 12% of thyroid nodules were found to be cancerous, with most of the cancers (85.3%) being papillary cancer. The average size of the nodules was 2.3 cm. Microcalcifications were found in 33.7% (87 of 258) of cancerous nodules and 6.4% (120 of 1864) of benign nodules; 95% of the cancers associated with microcalcifications were papillary cancers. Macrocalcifications were found in 37% of benign nodules and 27% of cancerous nodules.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Calcifications are a common finding on ultrasound of thyroid nodules. Although microcalcifications are specific for cancer, the presence of other patterns of calcification (macrocalcifications, egg-shell/rim calcifications, other calcification) was also found in cancerous nodules. It was previously considered that macrocalcifications were usually benign and did not need evaluation or surgery. This and several other reports suggest that all types of calcifications may be seen in thyroid cancer. Thus, macrocalcifications should not exclude a nodule from further investigation, including biopsy.

— M. Regina Castro, MD

ATA THYROID BROCHURE LINKS

Thyroid Nodules: http://thyroid.org/patients/patient_brochures/nodules.html

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

ABBREVIATIONS & DEFINITIONS

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.

Papillary thyroid cancer — the most common type of thyroid cancer.

Thyroidectomy — surgery to remove the entire

thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

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.

Macrocalcifications — Large flecks of calcium that can be seen either inside a thyroid nodule or in the periphery (so called egg-shell/rim calcifications), usually seen as large bright spots on ultrasonography.