



THYROID NODULES

Shear wave elastography for thyroid nodules

BACKGROUND

Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Despite many studies, there are no specific findings that will clearly determine if a nodule is cancerous without performing a biopsy and/or surgery. Shear wave elastography is a new ultrasound technique used to measure the stiffness of a thyroid nodule to attempt to determine if it is cancerous. This is based on the assumption that cancerous nodules are stiffer than benign ones. This study was performed to determine if shear wave elastography could correctly identify cancerous thyroid nodules.

THE FULL ARTICLE TITLE:

Shear wave elastography: A new ultrasound imaging mode for the differential diagnosis of benign and malignant thyroid nodules. *J Clin Endocrinol Metab* 2010; 95:5281-8

SUMMARY OF THE STUDY

A total of 93 patients with thyroid nodules were evaluated with both shear wave elastography and usual ultrasound imaging. A total of 61 patients had a single nodule and 32 patients had many nodules. All patients with multiple nodules and 47 of the 61 patients with single nodules underwent surgery. The average elasticity index was significantly higher in cancerous nodules than in non-cancerous nodules and normal thyroid

glands. All follicular cancers had an increased elasticity index. Fifteen of the solitary nodules were cancerous and 8 patients with multiple nodules had a total of 14 separate cancers. In this small group of patients, shear elastography seemed to be more accurate than conventional ultrasound and was able to correctly exclude malignancy in a larger proportion of patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Shear wave elastography appears to be a more accurate method than conventional ultrasound to evaluate thyroid nodules. It seems to be particularly helpful in the diagnosis of follicular thyroid cancers because these cancers often do not have the typical ultrasound characteristics of thyroid cancer and they usually cannot be diagnosed by biopsy. However, further studies including larger number of patients are needed to confirm these findings and to determine the true value of this new technique in the evaluation of patients with thyroid nodules.

— 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

Shear wave elastography — an ultrasound technique used to measure the stiffness of a thyroid nodule. Cancerous nodules are stiffer than benign nodules.

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.

Follicular thyroid cancer — the second most common type of thyroid cancer.