



THYROID NODULES

Repeat FNA is unnecessary for many nodules with nondiagnostic results

BACKGROUND

Thyroid nodules are very common, occurring in up to 50% of the population in the United States. The concern with any nodule is the possibility of thyroid cancer. A thyroid biopsy is often indicated. Between 80% and 99% of all thyroid biopsies will provide a diagnosis. However, a nondiagnostic thyroid biopsy result is seen in up to 15-20% of biopsies. Current guidelines recommend repeating the biopsy after a nondiagnostic result. A recent study suggested that the likelihood of cancer at repeat biopsy is lower than for the initial biopsy. The purpose of this study was to identify features of thyroid nodules that may help to predict cancer or benign results after initial nondiagnostic biopsy.

THE FULL ARTICLE TITLE

Anderson TJ et al. Management of nodules with initially nondiagnostic results of thyroid fine-needle aspiration: can we avoid repeat biopsy? *Radiology*. April 17, 2014

SUMMARY OF THE STUDY

Ultrasound-guided thyroid biopsy was performed on 5349 nodules; 776 (14.5%) were reported as having nondiagnostic results. A total of 393 patients with a single nodule with nondiagnostic biopsy results were included in the study. Their medical records, ultrasound characteristics of the nodule, results of subsequent biopsies and ultrasound examinations and final pathology result if the patient had surgery were reviewed. Ultrasound images acquired at the time of biopsy were later reviewed by an experienced radiologist who did not know the results of the biopsy. After a nondiagnostic biopsy result, repeat FNA was obtained on 336 nodules (85.5%); 18 of these nodules (5.4%) were suspicious for cancer, for which surgical removal and pathologic examination was done, leading to a diagnosis of 2 cancers (0.6%). Repeat biopsy was benign

in 245 of 336 nodules (73%). Of the remaining 73 nodules, 49 were removed by surgery, revealing 5 cancers; 24 other nodules were followed up with ultrasound. Among patients who did not have repeat biopsy, 27 had surgery, which led to the diagnosis of 2 cancers. In total, 92 nodules (92 of 393, 23%) were removed at surgery; 85 of these (92%) were benign and 7 (8%) were cancer.

Patients who underwent surgery had larger nodules than those who did not undergo surgery. Male patients were 4 times more likely than women to have cancerous nodules. Patients with cancer were also generally older (63 years) than those with benign nodules (55 years). No cancers were found in spongiform or cystic nodules or those with eggshell calcifications.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The likelihood of a repeat biopsy result that was suspicious for malignancy after a nondiagnostic biopsy was low (5.4%), and importantly, the majority (89%) proved to be benign at the time of surgery. Only 2 cancers were diagnosed with repeat biopsy while 7 cancers were found after surgery. The authors suggest that nodules with a nondiagnostic biopsy result without other risk factors and benign appearance at ultrasound can be followed with serial ultrasound examinations, avoiding repeat biopsy.

— M. Regina Castro, MD

ATA THYROID BROCHURE LINKS

Thyroid Nodules: <http://www.thyroid.org/what-are-thyroid-nodules>

Thyroid cancer: <http://www.thyroid.org/cancer-of-the-thyroid-gland>

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



THYROID CANCER, continued

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.

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.

Eggshell calcifications: Flecks of calcium that can be seen in the periphery of a thyroid nodule, usually seen as large bright spots on ultrasonography.

Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of December is **Thyroid and Development Awareness month** and a bracelet is available through the [ATA Marketplace](#) to support thyroid cancer awareness and education related to thyroid disease.

