



THYROID NODULES

A New Classification System for Thyroid Fine Needle Aspiration Biopsy Results

WHAT IS THE STUDY ABOUT?

Thyroid nodules are very common, occurring in up to 50% of patients. Overall, thyroid cancer is present in ~8% of thyroid nodules. The best test to determine if a cancer is present in a thyroid nodule >1 cm in size is a thyroid fine needle aspiration biopsy (FNAB). However, the description of FNAB results is different across medical centers and pathologists. The National Cancer Institute (NCI) recently proposed a six category classification system to be used for reporting all thyroid FNAB results. The aim of this study was to determine how well these categories matched results obtained from surgical specimens.

THE FULL ARTICLE TITLE:

Theoharis et al. The Bethesda Thyroid fine-needle aspiration classification system: year 1 at an academic institution. *Thyroid*. 2009 19(11): 1215-23.

WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to determine how well these categories matched results obtained from surgical specimens.

WHO WAS STUDIED?

These investigators applied the new NCI classification system to all reports of FNAB results at Yale-New Haven Hospital in 2008. A total of 3207 biopsies from 2468 patients were evaluated.

HOW WAS THE STUDY DONE?

All thyroid FNAB samples were reviewed and classified according to the NCI classification system. The NCI classification system includes the following six categories: 1) unsatisfactory, 2) benign/negative for malignancy, 3) indeterminate, 4) follicular neoplasm, 5) suspicious for malignancy and 6) positive for malignancy. A subset of patients subsequently underwent surgical resection of their thyroid/thyroid nodules and the final pathology of these specimens was compared to the FNAB result obtained prior surgery.

WHAT WERE THE RESULTS OF THE STUDY?

Of the 3207 nodules from 2468 patients, the majority (72.9%) of the nodules were benign on review of the fine needle aspiration. Two hundred thirty patients (9.3%) had an “unsatisfactory” diagnosis on FNAB. Nodules were classified as “suspicious for malignancy” or “malignant” in 39 (1.6%) and 145 (5.9%) respectively. The diagnosis of “indeterminate” was applied in 89 (3.6%) of patients and the term “follicular neoplasm” was used in 166 (6.7%) of patients. Overall, 378 of the 2468 patients underwent surgery to remove the thyroid and in these patients comparisons were made between the surgical and FNAB specimens. In general, there were excellent correlations between FNAB and surgical pathology results.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

There have been no previous studies to specifically assess this new NCI classification system for reporting FNAB results. Studies using very similar classification schemes have shown results consistent with this report.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The recently proposed NCI classification system provides an excellent standard for reporting FNAB results. Institutions should consider employing this classification system routinely.

— Whitney Woodmansee, 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

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THYROID NODULES, continued

ABBREVIATIONS & DEFINITIONS

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.

Thyroid nodule — an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5-8% are cancerous.

National Cancer Institute (NCI) — a part of the National Institutes of Health in Bethesda, MD, the NCI is the federal government's primary agency for cancer research and training.