



THYROID NODULES

Evaluation of thyroid nodule biopsies may identify less aggressive noninvasive follicular thyroid cancers

BACKGROUND

The most common type of thyroid cancer is papillary cancer, which can be divided into classical and follicular types. When a thyroid nodule biopsy is read as either papillary cancer or suspicious for papillary cancer, surgery with a total thyroidectomy is usually recommended. Recently, a new term has been used to describe a type of papillary thyroid cancer which was non-invasive and of the follicular type. This term is noninvasive follicular thyroid neoplasm with papillary-like nuclear features or NIFTP. These cancers behave less aggressively than typical papillary thyroid cancer. They have been shown to have low risk for recurrence and low risk for spread outside of the thyroid. At present, the diagnosis of NIFTP can only be made after the thyroid is examined after surgery.

It would be helpful to know whether a biopsy positive or suspicious for papillary cancer is a NIFTP prior to surgery, since a lobectomy could be performed instead of a total thyroidectomy. If predictive features on fine needle aspiration were found, then the surgery could be directed toward that particular patient's need. This study aims to determine whether NIFTP can be diagnosed on thyroid biopsy cytology and can be distinguished from classical papillary thyroid cancer.

THE FULL ARTICLE TITLE

Strickland KC et al. Preoperative cytologic diagnosis of noninvasive follicular thyroid neoplasm with papillary-like nuclear features: a prospective analysis. *Thyroid* 2016;26:1466-71. Epub September 8, 2016.

SUMMARY OF THE STUDY

A total of 29 nodules with “suspicious for malignancy” results and 69 nodules with “malignant” results on thyroid biopsy from June 2015 through January 2016 were reviewed at Brigham and Women's Hospital, Boston, MA, by 1 of 10 cytopathologists. The cytopathology was reviewed for characteristics of classical papillary thyroid cancer, follicular papillary thyroid cancer or NIFTP. These results were compared with final surgical pathology. Surgical follow-up was present for 56 of

the nodules (13 suspicious for malignancy results, 43 malignant results). These surgeries were performed on 52 patients, 38 women, 14 men, average age 47 years. Most of the surgeries were total thyroidectomy (49 total, 3 initial lobectomies). The final diagnoses were 42 classical papillary thyroid cancer, 8 NIFTP, 3 follicular variant of papillary thyroid cancer with invasion, 2 follicular adenomas, and 1 poorly-differentiated carcinoma.

A total of 91% (38 of 42) of nodules that were classified as classical papillary at time of thyroid biopsy turned out to be classical papillary thyroid cancer after surgery, with only 1 of these NIFTP. A total of 8 nodules were classified as NIFTP or follicular variant on biopsy, with final pathology showing that 5 were NIFTP, 2 were benign follicular adenomas, 1 follicular variant of papillary cancer with invasion. This suggests that if the biopsy favored classical papillary thyroid cancer, the pathology was indeed a classical papillary thyroid cancer in 95% of the cases (38 of 40). If the biopsy favored NIFTP or a follicular variant, pathology agreed in 89% of the cases (8 of 9).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that thyroid biopsy cytology in positive or suspicious for papillary cancer specimens can be used to determine if the likely cancer is low risk for aggressive behavior, which would be treated by a lobectomy. If the nodule biopsy had classical features of papillary thyroid cancer, then the risk is high enough to perform a total thyroidectomy. These numbers are low, so these findings need to be confirmed in a larger study. However, this data suggests that the majority of NIFTP may be predicted by the fine needle aspiration and be treated sufficiently by thyroid lobectomy.

— Julie Hallanger Johnson

ATA THYROID BROCHURE LINKS

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

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


THYROID NODULES, 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 biopsy: 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.

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).

Noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP): a new term has been used to describe a type of papillary thyroid cancer which is non-invasive. These cancers behave less aggressively than typical papillary thyroid cancer and have been shown to have low risk for recurrence and low risk for spread outside of the thyroid.

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.

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 January is **Thyroid Awareness Month** and a bracelet is available through the ATA Marketplace to support thyroid cancer awareness and education related to thyroid disease.

