AMERICAN THYROID ASSOCIATION
Optimal Thyroid Health for All

Clinical Thyroidology® for the Public

VOLUME 12 | ISSUE 11 | NOVEMBER 2019

THYROID NODULES

Hashimoto's thyroiditis increases risk for thyroid cancer

BACKGROUND

Antibodies are made by the immune system to protect our bodies from infections but sometimes they get confused and attack parts of the body. These conditions are called autoimmune diseases. Hashimoto's thyroiditis, the most common cause of hypothyroidism in the United States, is caused by antibodies that attack the thyroid gland causing inflammation which eventually destroys the gland. The possibility of an association between long term inflammation and cancer was first questioned in 1893. There had been multiple studies since then, but the results were not conclusive. The aim of this study was to evaluate whether there is an association between Hashimoto's thyroiditis and thyroid cancer in a large group of patients evaluated for thyroid nodules. The researchers also wanted to find out whether Hashimoto's thyroiditis affected the results of the thyroid biopsies since it can cause changes in the thyroid cells.

THE FULL ARTICLE TITLE

Silva de Morais N et al 2019 The impact of Hashimoto thyroiditis on thyroid nodule cytology and risk of thyroid Cancer. J Endocr Soc 3:791–800. PMID: 30963137

SUMMARY OF THE STUDY

Researchers analyzed a database that had information from patients who were seen at Brigham and Women's Hospital Thyroid Nodule Clinic between 1995 and 2017. Some patients had more than one nodule, all nodules were >1 cm. Patients had a clinical exam and a thyroid ultrasound. TPO antibodies (TPOAb) were measured in some patients if their thyroid hormone levels were abnormal. Ultrasound was used to guide the needle when the nodules were biopsied. Biopsy results were reported as nondiagnostic, negative for malignant cells, indeterminate (atypia of undetermined significance, suspicious for follicular neoplasm), suspicious for malignancy, or malignant. Nodules that were suspicious for malignancy or malignant were treated with surgery. Hashimoto's thyroiditis was diagnosed by elevated TPOAb in the blood, ultrasound features of thyroiditis, or diffuse lymphocytic thyroiditis diagnosis on examination of the thyroid tissue.

There were 9851 patients with 21,397 nodules. 83.9% of the patients were female. 14,063 nodules were biopsied. Hashimoto's thyroiditis was diagnosed in 3895 (27%) of the nodules. More nodules had indeterminate or malignant (cancer) biopsy results in the Hashimoto's thyroiditis group. Among the nodules treated with surgery, cancer was diagnosed more frequently in the patients with Hashimoto's thyroiditis compared to patients who did not have Hashimoto's thyroiditis (23.3% vs 15.9%). The aggressiveness of the cancer was similar in the two groups. The risk of cancer was the same whether a patient had one or multiple nodules.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In conclusion, in this large study, patients with thyroid nodules > 1 cm were at increased risk of having indeterminate biopsy results and thyroid cancer if they also had Hashimoto's thyroiditis. This finding is important because Hashimoto's thyroiditis is very common. Not everyone with Hashimoto's thyroiditis has thyroid nodules. But when someone has both conditions, thyroid nodules may need to be more carefully examined and followed in patients who have Hashimoto's thyroiditis.

— Ebru Sulanc, MD

ATA THYROID BROCHURE LINKS

Hashimoto's Thyroiditis: https://www.thyroid.org/hashimotos-thyroiditis/

Thyroid Nodules: https://www.thyroid.org/thyroid-nodules/

Thyroid Cancer (Papillary and Follicular): https://www.thyroid.org/thyroid-cancer/

THYROID NODULES, continued

ABBREVIATIONS & DEFINITIONS

Autoimmune thyroid disease: a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

Hashimotos thyroiditis: the most common cause of hypothyroidism in the United States. It is caused by antibodies that attack the thyroid and destroy it.

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 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.

Indeterminate thyroid biopsy: this happens a few atypical cells are seen but not enough to be abnormal (atypia of unknown significance (AUS) or follicular lesion of unknown significance (FLUS)) or when the diagnosis is a follicular or hurthle cell lesion. Follicular and hurthle cells are normal cells found in the thyroid. Current analysis of thyroid biopsy results cannot differentiate between follicular or hurthle cell cancer from noncancerous adenomas. This occurs in 15-20% of biopsies and often results in the need for surgery to remove the nodule.

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.

TPO antibodies: these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.