AMERICAN THYROID ASSOCIATION
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THYROID CANCER

What are the risk factors in cancer recurrence in patients with involvement of the neck lymph nodes at diagnosis?

BACKGROUND

Papillary thyroid carcinoma is the most common thyroid cancer. Despite the fact that at least 30% of patients with papillary thyroid cancer have spread to the neck lymph nodes at the time of the initial surgery, papillary thyroid cancer has a relatively good prognosis. Indeed, even if the papillary thyroid cancer recurs after the initial treatment, it often can be either cured or controlled for long periods of time.

The risk of recurrence of papillary thyroid cancer varies in patients with spread to the neck lymph nodes. The American Thyroid Association guidelines for management of thyroid cancer include size of abnormal lymph nodes containing papillary thyroid cancer in understanding a patient's risk of recurrence. The goal of this study is to evaluate the size of the largest area of papillary thyroid cancer in the neck lymph nodes and its relation to how these patients respond to treatment.

THE FULL ARTICLE TITLE

Deng Y et al. 2019 Size of the largest metastatic focus to the lymph node is associated with incomplete response of pN1 papillary thyroid carcinoma. Endocr Pract 25:887–898. PMID: 31170371.

SUMMARY OF THE STUDY

This study evaluated 1403 patients treated at a single center in China between January 2014 and December 2016. The study included patients with papillary thyroid cancer who had a total or near-total thyroidectomy and neck lymph node removal followed by radioactive iodine treatment with and without spread of the cancer to the central neck lymph node. Patients who had spread of the cancer outside of the neck were not included. A total of 554 patients were included in this study. Patients were separated into three groups based on the largest size of the papillary thyroid cancer noted in the lymph nodes: 1) < 2mm; 2) 2 -10 mm; 3) ≥ 10 mm. Of the 554 patients, 64% had an excellent response (follow up imaging negative with a low or undetectable thyroglobulin level), 4% had a biochemical incomplete response (imaging negative with an elevated thyroglobulin level), 18% had structural incomplete response (imaging positive for persistent cancer), and 14% had an indeterminate response (unclear finding on imaging or mildly elevated thyroglobulin level). Of these, 2.5% (4 of 161) of group 1 patients, 13.9% (37 of 267) of group 2, and 47% (59 of 126) of group 3 had a structural incomplete response. Further, patients with a larger area of papillary thyroid cancer in the neck lymph nodes were more likely to have larger thyroid cancers, more lymph nodes involved with cancer, and cancers which extended beyond the thyroid capsule. The size of the largest area of papillary thyroid cancer in the neck lymph nodes was a predictive factor for incomplete response to treatment.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that the size of the largest abnormal lymph node containing papillary thyroid cancer predicts the risk of recurrence in patients with papillary thyroid cancer spread to the lymph nodes after radioactive iodine therapy. Indeed, if the largest abnormal lymph node is >10 mm, there is an almost 50% risk of cancer recurrence. Thus, this study suggests that patients with papillary thyroid cancer and large abnormal lymph nodes should be followed more closely and treated more aggressively.

— Priya Mahajan, MD

ATA THYROID BROCHURE LINKS

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

Thyroid Surgery: https://www.thyroid.org/thyroid-surgery/

THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

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).

Cancer Metastasis: spread of the cancer from the initial organ where it developed to other organs, such as the lungs and bone.

Lymph Node: bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

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.

Near-total Thyroidectomy: removal of nearly all of each thyroid lobe, leaving only a small portion of the thyroid gland.

Radioactive Iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

Thyroglobulin: a protein made only by thyroid cells, both normal and cancerous. When all normal thyroid tissue is destroyed after radioactive iodine therapy in patients with thyroid cancer, thyroglobulin can be used as a thyroid cancer marker in patients that do not have thyroglobulin antibodies.