Thyroid Cancer

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Overview

Thyroid cancer begins in the thyroid gland, which is located in the front of the neck just below the larynx (voice box). Thyroid cancer starts when the cells in the thyroid begin to change, grow uncontrollably, and eventually form a tumor. There are two types of tumors: benign (noncancerous) and malignant (cancerous, meaning that it can spread to other parts of the body). Thyroid tumors can also be called nodules, and 90% of all thyroid nodules are benign.

About the thyroid

The thyroid gland is part of the endocrine system [2], which regulates hormones in the body. The thyroid gland absorbs iodine from the bloodstream to produce thyroid hormones, which regulate a person's metabolism.

A normal gland has two lobes, one on each side of the windpipe, joined by a narrow strip of tissue called the isthmus. A healthy thyroid gland is barely palpable (capable of being touched or felt). If a tumor develops in the thyroid, it is felt as a lump in the neck. A swollen or enlarged thyroid gland is called a goiter, which may be due to a person not getting enough iodine. However, most Americans receive enough iodine from salt, and a goiter under these circumstances is caused by other reasons.

Types of thyroid cancer

The thyroid gland contains two types of cells: follicular cells, which are responsible for the production of thyroid hormone, and C cells, which make calcitonin, a hormone that participates in calcium metabolism. There are four main types of thyroid cancer:

Papillary thyroid cancer. Papillary thyroid cancer develops from the follicular cells and grows slowly. It is the most common type of thyroid cancer. It is usually found in one lobe; only 10% to 20% of papillary thyroid cancers appear in both lobes. Papillary thyroid cancer is a differentiated thyroid cancer, meaning that the tumor looks similar to normal thyroid tissue under a microscope.

Follicular thyroid cancer. Follicular thyroid cancer also develops from the follicular cells and usually grows slowly. Follicular thyroid cancer is also a differentiated thyroid cancer, but it is less common than papillary thyroid cancer.

These two types of cancer are very often curable, especially when found early and in people younger than 45. Together, papillary and follicular thyroid cancers make up about 90% of thyroid cancers.

Medullary thyroid cancer (MTC). MTC develops in the C cells and is sometimes the result of a genetic syndrome called multiple endocrine neoplasia type 2 (MEN2) [3]. This tumor has very little, if any, similarity to normal thyroid tissue. MTC can often be controlled if it is diagnosed and treated before it spreads to other parts of the body. MTC accounts for about 5% of thyroid cancers.

Anaplastic thyroid cancer. This type is rare, accounting for about 2% of thyroid cancers. It is a fast-growing, poorly differentiated thyroid cancer that starts from differentiated thyroid cancer or a benign tumor of the gland. Anaplastic thyroid cancer can be subtyped into giant cell classifications. Because this type of cancer grows so quickly, it is more difficult to treat successfully.

This section addresses these four main types of thyroid cancer. There are also subtypes (or variants) within these main types, such as the follicular thyroid cancer variant called HÃ¼rthle cell cancer. For lymphoma in the thyroid, please read Cancer.Net's Guide toLymphoma, Non-Hodgkin [4]. For more information on sarcoma in the thyroid, review the Cancer.Net Guide to Sarcoma [5]. For information on a tumor in the parathyroid gland, read Cancer.Net's Guide to Parathyroid Cancer [6].

Find out more about basic cancer terms used in this section [7].

Looking for More of an Overview?

If you would like additional introductory information, explore this related item on Cancer.Net:

- *ASCO Answers* Fact Sheet [8]: Read a one-page fact sheet (available in PDF) that offers an easy-to-print introduction for this type of cancer.

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