Anaplastic Thyroid Cancer

There are four main types of thyroid cancer: papillary, follicular, medullary and anaplastic. Anaplastic thyroid carcinoma is the least common, is rapidly progressive and has a grave prognosis. A common presenting symptom of this tumor is hoarse voice and diagnostic examination will show invasion of local structures and a mixed cellular morphology. Major risk factors for anaplastic carcinoma are old age, presence of multinodular goiter, and history of previous thyroid disease or malignancy.



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Pathophysiology

Rapidly Progressive

Rapid-rabbit

Patients commonly present with a progressively growing painful, hard thyroid nodule or ‘neck mass’. Around 80% of patients have extensive invasion of other structures (trachea, esophagus, carotid artery, etc.) at initial presentation.

Poor Prognosis

Gravestone

Data shows that the median survival length from the time of diagnosis of anaplastic thyroid cancer is 5-6 months, and if metastasis occurs then survival time drops even lower. Unfortunately this cancer has a mortality rate of nearly 100%. Palliative treatment is often sought initially at the time of diagnosis because of this grave prognosis.

Hoarseness

Horse-in-throat

Due to their rapid growth, anaplastic thyroid cancer can compress the upper airway, recurrent laryngeal nerve, or vocal cords. This compression can cause patients to present with a hoarse voice, almost always in conjunction with a large thyroid mass.

Diagnosis

Invades Local Structures

Invading Local Structures

Anaplastic carcinoma is both poorly differentiated and extremely fast growing, and local invasion occurs early in disease progression with metastasis following soon after. When local structures are invaded and compressed by the tumor, patients may have symptoms of dysphagia, hoarseness, and cough.

Mixed Morphology

Tumors Morphing into Mixed-patterns

Anaplastic thyroid cancers consist of several cell types such as pleomorphic giant cells, spindle cells, and squamoid epithelial cells. These cells are mixed amongst one another and will often show mitotic figures within them on histological examination, demonstrating the extremely aggressive nature of this carcinoma.

Risk Factors

Multinodular Goiter

Mulitiple Knobs on Goat

A goiter is a general term for a swelling of the thyroid gland. They can be described as uninodular, multinodular, or diffuse depending on the growth pattern. Up to one-half of anaplastic thyroid cancer patients have a history of a multinodular goiter.

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Older Age

Older-adult

This cancer typically occurs in individuals over age 65. In addition, women are affected more often than men.

History of Thyroid Disease

Hx Thigh-droid Diseased

About one-fifth of anaplastic carcinoma patients have a history of another thyroid disease or malignancy. Presence of another cancer may lead to further loss of function in tumor pathways and allow for the development of this highly undifferentiated cancer.

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