Malignant Neoplasms

Approximately 5% of palpable thyroid nodules contain carcinoma; these are responsible for 1% of cancer-related deaths. Both Papillary and Follicular carcinomas fall under the category of well-differentiated thyroid carcinomas. Risk factors include female gender and exposure to ionizing radiation. Thyroglobulin is used as a tumor marker for well-differentiated thyroid cancers.

Papillary thyroid cancer (PTC) is the most common thyroid cancer. It presents as a solitary nodule, microscopically characterized by psammoma bodies, cleaved “orphan Annie” nuclei, and papillary formations. PTC tends to be multifocal, slow-growing, and invades locally into adjacent structures in the neck. Metastases, when they occur, are usually via lymphatics, but can also occur hematogenously. However, most PTC is diagnosed at stage I or II, making the prognosis favorable.

Follicular thyroid cancer (FTC) is more common in parts of the world that are deficient in iodine. Diagnosis by FNA is difficult due to the histological similarity between follicular adenoma and carcinoma. The definitive diagnosis of FTC usually requires evidence of invasion, either capsular or vascular, found upon evaluation of the entire nodule. FTC metastasizes via hematogenous routes to bone, lung, and CNS structures. Because more patients with FTC tend to present with stage IV disease, prognosis is significantly worse than that of PTC, with a 10-year survival rate of 80-85% for FTC versus 90-95% for PTC. Follicular carcinoma has an association with mutations in the RAS family of oncogenes.

Surgery is the mainstay of treatment for well-differentiated thyroid tumors, along with suppressive doses of thyroid hormone. Histologic diagnosis and staging can be performed, and lymph nodes can be evaluated and excised if necessary. The question of lobectomy versus near total or total thyroidectomy does not have a conclusive answer. While some cite the similar survival rates for both procedures, lobectomy carries a lower incidence of post-operative hypothyroidism and laryngeal nerve injury, while thyroglobulin monitoring and whole body radioiodide scanning to assess recurrence cannot be performed if native thyroid tissue remains. Finally, adjuvant radioablative therapy works best in the absence of excess thyroid tissue.

Medullary Thyroid Cancer comprises roughly 5-10% of all thyroid cancers. It can arise spontaneously, or can be associated with the Multiple Endocrine Neoplasia Syndromes (MEN IIa and IIb). All patients with MTC should also consider genetic testing for the RET proto-oncogene, and appropriate counseling should be given. Treatment is primarily surgical. The disease can be followed with serial calcitonin levels, whose rise can signal disease recurrence.

Anaplastic Thyroid Cancer carries a poor prognosis, and most patients succumb to the disease within 6 months of diagnosis. The tumor generally presents in the seventh decade of life, is poorly differentiated, aggressive, and responds poorly to chemotherapy and radiation.

Thyroid Lymphoma is characterized microscopically by sheets of lymphoid cells
proliferating in the gland. Clinically, Thyroid Lymphoma most often presents as a rapidly enlarging thyroid mass, and is associated in many cases with underlying Hashimoto’s Thyroiditis. Radiation therapy is the treatment of choice, and usually results in good outcomes.

References:


