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## Tumor Biology

### *PSAT279*

#### ***Thyroid Oncocytic tissue: Presenting as metastatic thyroid carcinoma***

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**Case:** A 76-year-old male with status post thyroidectomy in 2017 for compressive multi-nodular goiter. Pathology reported as benign thyroid tissue with follicular hyperplasia.

In 2020, he presented with incidental finding of left neck mass on MRI. Ultrasound neck confirmed two extra-thyroidal masses left neck largest dimension of 2.9 cm. FNA reported as benign follicular cells favoring benign thyroid tissue. Surgical resection of the neck masses revealed benign thyroid tissue with focal oncocytic features and two benign lymph nodes.

In 2021, he presented with left chest mass. Biopsy reported benign thyroid tissue, no evidence of papillary cancer. PET CT confirmed hypermetabolic chest mass, multiple lytic bone lesions and pulmonary nodules. Referred to Endocrinology for further evaluation, Thyroglobulin level elevated at >4500 ng/mL (Tg Ab <1.0 IU/mL). Molecular testing of chest wall mass was positive for TERT and HRAS mutations, loss of 22q and gain of 17q on microarray consistent with changes found in thyroid cancer.

Surgical resection of the chest wall mass not feasible due to size and location. External beam radiation for cytoreduction of the sternal mass planned and radioactive iodine therapy if tumor RAI (radioactive iodine) avid. He is currently not a candidate for tyrosine kinase inhibitor (TKI) as he recently had acute coronary event. Zoledronic acid infusions initiated for bone involvement.

**Discussion:** Thyroid carcinomas that exhibit vascular invasion, or anaplastic dedifferentiation are readily and consistently diagnosed. However, the morphology of primary oncocytic thyroid tumors is similar to their non-oncocytic counterparts posing a huge challenge for the pathologist. This controversial and often confusing area of thyroid pathology requires careful evaluation for accurate diagnosis and management for patients with oncocytic thyroid lesions. Molecular and microarray testing should be considered when in doubt.

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