however, an important subset of these cancers known as the tall cell variant (TCV), portend a more aggressive prognosis. TCV PTC is characterized by cells, which are at least twice as tall as they are wide. Patients diagnosed with TCV PTC fare worse than those with the classic variant. A less common thyroid cancer, spindle cell squamous cell carcinoma (SCSC), may arise as a primary tumor, but rarely also alongside or from a previous TCV PTC (1). It may also occur as a component of an anaplastic thyroid cancer, the most aggressive and rarest thyroid malignancy. There are three main types of anaplastic SCSC arising from TCV PTC based on histological characteristics: Type 1 is defined by the presence of **both** TCV and SCSC within the initial resection; type 2 refers to when the SCSC arises as a recurrence or metastasis in patients with a known history of TCV PTC; type 3 occurs when SCSC presents as a primary laryngeal SCC in patients with or without a known history of TCV. We report a case of type 2 anaplastic SCSC.

Clinical Case: A 76 yr old man with hx of invasive TCV PTC (diagnosed 2011) s/p total thyroidectomy with b/l neck dissection and laryngectomy, as well as 200 mci of I-131 (in 2012), returns to clinic in 2019, with worsening unexplained weight loss (> 20 lbs). He had been lost to follow-up since 2015. Now, chest CT showed a new, necrotic, left lower lobe mass obstructing the bronchus, as well as bony erosion of the right clavicle and manubrium. Bronchoscopy of the mass was performed, and pathology was consistent with metastatic anaplastic thyroid cancer with squamous nests. Immunohistochemistry was positive for PAX-8, p40, p63 and negative for TTF-1, Napsin A, TG and PDL-1. The endobronchial tumor tissue was compared to the prior resection specimen from 2011, showing morphologic similarity to the squamoid nests. In retrospect, these nests likely represented small foci of anaplastic thyroid cancer arising in association with TCV PTC. The positive staining for PAX-8 and lack of expression for TTF-1 and Napsin A supports this interpretation and is evidence against a primary pulmonary squamous cell carcinoma. Next Gen Sequencing was positive for BRAF V600E mutation, which allowed us to offer BRAF inhibitor and MEK inhibitor therapy. Unfortunately, due to patient's non-adherence to therapy and follow-up clinic visits, we are not able to assess his response.

Conclusion: This is a case of the rarely described type 2 anaplastic SCSC and is an example of the very poor prognosis associated with TCV PTC. It is a reminder that this variant of PTC should be treated more aggressively from the time it is first identified on biopsy.

Reference: (1) Gopal PP et al. The variable presentations of anaplastic spindle cell squamous carcinoma associated with tall cell variant of papillary thyroid carcinoma. Thyroid. 2011;21(5):493–499.

Neuroendocrinology and Pituitary

CASE REPORTS IN UNUSUAL PATHOLOGIES IN THE PITUITARY

A Brute of a Case: Pituitary Apoplexy in a Patient Treated for Chronic Lymphocytic Leukemia with Ibrutinib.

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Background- Patients treated for chronic lymphocytic leukemia are frequently administered ibrutinib. Ibrutinib inhibits Bruton's tyrosine kinase, blocks the B-cell receptor signaling pathway, thereby reducing downstream effects such as proliferation; effectively treating the malignancy. Adverse events such as bleeding have been reported and are suspected to be caused by inhibition of kinases in the platelet aggregation pathway.

Clinical Case- A 60-year-old man with chronic lymphocytic leukemia, treated with ibrutinib for five months, was diagnosed with pituitary apoplexy and consequent panhypopituitarism. He presented with a severe headache one month prior to diagnosis. At this time, a non-contrast head CT was interpreted as unremarkable. On second presentation one month later, studies showed a serum sodium of 116 mmol/L (135-145 mmol/L), glucose of 43 mg/dL (65-179 mg/dL), and blood pressure of 95/52. An MRI brain demonstrated an enlarged pituitary with areas of intrinsic T1 hyperintense signal noted within the sella turcica suggestive of blood products. Serum cortisol rose from 0.3 to 8.9 ug/dL (4.5-22.7 ug/dL) one hour after IV injection of 250 mcg cosyntropin. Paired ACTH was < 5 pg/mL (7.2-63 pg/mL). Hydrocortisone was started and blood pressure, sodium, and glucose normalized. LH was 0.9 mIU/mL (3-10 mIU/mL), FSH was 4.7 mIU/mL (1.6-9.7 mIU/mL), and total testosterone was < 0.7 ng/dL (240-950 ng/dL). TSH was 0.115 uIU/mL (0.6-3-3 uIU/mL) with FT4 of 0.84 ng/dL (0.71-1.4 ng/dL). Prolactin was 2.4 ng/mL (4-18 ng/mL) and IGF-1 Z score was -1.28 (-2.0-2.0). Replacement levothyroxine and testosterone were started. Oncology stopped ibrutinib and switched therapy to rituximab and venetoclax. A pituitary MRI two months later showed significant improvement of the T1 hyperintensity (blood products) and a 1.1 cm adenoma was found. During the entire course of his illness his platelet counts ranged from 275 to 431 10^9/L (150-440 10^9/L). His INR was 1.14 and PT 13.2 sec (10.2-13.2 sec). He has recovered well on hormone replacement.

Discussion- Pituitary apoplexy often has underlying risk factors, including pituitary adenomas and coagulopathies. To our knowledge apoplexy has not been reported in patients taking ibrutinib, though bleeding and platelet dysfunction have been well described. Knowledge of the possible side effects of newer anti-cancer drugs is increasingly important for the endocrinologist.

Tumor Biology

TUMOR BIOLOGY: GENERAL, TUMORIGENESIS, PROGRESSION, AND METASTASIS

Expression of Cell Synthesis and Dna Repair Markers in Meningioma Recurrence or Regrowth

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