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Thyroid

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Concomitant Metastatic Papillary Thyroid Cancer and Graves' Disease Presenting as Thyroid Storm

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Papillary thyroid cancer (PTC) is the most prevalent form of thyroid cancer with a reported incidence of 4.7-5.3 per 100,000 people over the past 10 years. PTC is more commonly seen in females during the fourth and fifth decades of life. Radiation exposure during childhood and family history are known risk factors for thyroid cancer. Thyroid cancer typically presents as a thyroid nodule detected on physical exam or incidental finding on imaging. Patients may feel swollen glands or a lump in the neck that can cause dysphagia. It is uncommon for PTC to present as hyperthyroidism. However, patients with Graves' disease have an increased risk of thyroid cancer. We share a rare case of PTC detected following newly diagnosed Grave's disease presenting as thyroid storm. A 27-year-old male with history of polysubstance abuse and bipolar disorder presented to the hospital for altered mentation. He appeared anxious, tremulous, and was persistently tachycardic and febrile. There was an initial concern for drug intoxication or overdose. However, the patient's mother stated that he had not used drugs for the past six months and that his prescription bottles were appropriately filled. Blood alcohol level was elevated however urine toxicology screen was unrevealing. Due to worsening mentation and inability to protect his airway, the patient was intubated and transferred to the ICU. Thyroid levels were checked and TSH was less than 0.01 with free T4 of 3.6 and free T3 of 13.80. The patient's Burch-Warsofsky score was 40. With endocrinology input, the patient was started on thyroid storm protocol with propylthiouracil, iodine solution, hydrocortisone, and beta blocker. He had significant improvement and was able to be extubated. Propylthiouracil was transitioned to

methimazole. Thyroid stimulating immunoglobulin was found to be elevated, consistent with Grave's disease. Patient did have a known enlarged thyroid with heterogeneity from a recent ultrasound that had not yet been investigated. A CT scan of the neck was ordered, and this showed cervical lymphadenopathy, diffuse thyroid enlargement without nodule, and anterior mediastinum density. An ultrasound guided cervical lymph node biopsy was consistent with metastatic papillary thyroid cancer. A PET CT showed metastatic adenopathy in the upper neck and chest. Patient is planned to undergo thyroidectomy with lymphadenectomy. He is being followed by oncology and endocrinology for further management outpatient. Concurrent hyperthyroidism from Grave's disease with thyroid cancer is rare, though with increasing reports, particularly with PTC. Thyroid stimulating immunoglobulins are thought to accelerate thyroid cancer cell turnover and promote angiogenesis through up-regulation of vascular endothelial growth factors, facilitating invasive and metastatic potential. Thyroid cancer with coexisting hyperthyroidism has a poorer prognosis. Having a high clinical suspicion of thyroid cancer in patients with hyperthyroidism can result in prompter diagnosis and treatment which is imperative.

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