A Case of Ectopic Cushing’s Syndrome Complicated by COVID-19 Infection

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**Background:** Ectopic Cushing’s syndrome is associated with high morbidity and mortality rates and patients can rapidly decline if not intervened on earlier. We report a case of Ectopic Cushing’s syndrome and highlight the
challenges that were encountered in managing this patient who subsequently developed Covid-19 infection during hospitalization. **Clinical Case:** 61-year-old female with history of non-insulin dependent diabetes presented with increased confusion, elevated blood sugars and persistent hypokalemia. She was hypertensive, with exam findings of facial plethora, coarse chin hair growth, central adiposity with thin extremities. During evaluation Potassium was 2.0 mmol/l (ref range 3.5-5), Cortisol 101.7 mcg/dl (AM ref range 6.2-19.4), ACTH 365 pg/ml (ref range 6-50), plasma renin activity of 1.06 ng/ml/hr (ref range 0.25 - 5.82), and Aldosterone level of <1 ng/dl (supine ref range 3-16). CT abdomen/pelvis imaging revealed a 4.4×3.1 cm right pulmonary mass concerning for malignancy, two hepatic lesions suspicious for metastases and bilateral adrenal gland thickening with focal nodularity. Biopsy of the lung mass demonstrated a Grade I well differentiated neuroendocrine tumor. Unfortunately, ACTH staining was not performed on the biopsy specimen, but suspicion for ectopic hypercortisolism remained high given her clinical presentation, resistant hypokalemia and neuroendocrine tumor. Gallium Dototate scan revealed increased uptake in the right lung infra-hilar mass and bilateral adrenal glands with decreased uptake in the liver lesions. Ketoconazole and Metyrapone were initiated along with Spironolactone and potassium supplements. She was thought to be a poor candidate for thoracic surgery and was seen by radiation oncology who recommended stereotactic body radiation therapy (SBRT) to the right lung lesion with IR guided bland embolization of the liver lesions. While awaiting further intervention, she decompensated developing hypoxic respiratory failure with high oxygen requirements and was found to have Covid-19 infection. She received convalescent plasma and Remdesivir. After much discussion, despite her endogenous hypercortisolism, patient was given IV steroids per infectious disease and pulmonology recommendations. She continued to decline requiring intubation. Intravenous Etomidate infusion was started to decrease cortisol production. Despite many efforts, her hospital course was complicated by an upper GI bleed, acute L1-L3 fractures and significant hyperkalemia requiring hemodialysis. Family declined further intervention and withdrew treatment, shortly after which patient passed away. **Discussion:** Ectopic cushing’s disease may be associated with fatal progression of Covid-19 pneumonia and respiratory failure requiring emergent intervention. Due to endogenous hypercortisolism, immune response may be blunted, and patients infected with Covid-19 infection may lack the typical clinical presentation and cytokine storm. Role of exogenous steroids in patients with Covid-19 infection with pre-existing endogenous hypercortisolism is not clear with the concern being the resulting severe metabolic sequelae which may lead to adverse outcomes. **Presentation:** Saturday, June 11, 2022 1:00 p.m. - 3:00 p.m.