with Levothyroxine 125 mcg daily. He also received antivirals and
supportive care for COVID-19, guided by local hospital protocol. After significant clinical improvement, steroids were tapered down and he was discharged on a maintenance dose of 20 mg hydrocortisone per day in divided doses. The patient was stable at outpatient follow up after one month. He was started on testosterone replacement for erectile dysfunction due to hypogonadotropic hypogonadism. He was offered surgery for complete resection of the residual pituitary adenoma, but he declined and preferred to continue medical therapy. **Conclusion:** Hypopituitarism is associated with significant morbidity and premature mortality, a key risk factor being cortisol deficiency. Adrenal crisis is a life-threatening medical emergency and remains an important cause of death in patients with adrenal insufficiency. These patients are also vulnerable to develop severe complications from COVID-19 infection due to the absence of normal cortisol responses to stress. Despite receiving stress dose corticosteroids, this high-risk patient recovered from COVID-19 pneumonia without complications. These findings support the use of corticosteroids when necessary for treatment of coexisting conditions in patients with COVID-19.

Neuroendocrinology and Pituitary

NEUROENDOCRINOLOGY AND PITUITARY CASE REPORTS

COVID-19 and Cushing Disease: A Protective or a Deadly Combination?

Ayesha Mehfooz, MBBS[1], Takako Araki, MD[2], Lynn Ann Burmeister, MD[3].
[1]UNIVERSITY OF MINNESOTA, Minneapolis, MN, USA, [2]University of Minnesota, Minneapolis, MN, USA, [3]University of Minnesota, MINNEAPOLIS, MN, USA.

Background: Manifestations of Cushing disease, including diabetes mellitus, hypertension, and obesity are risk factors for severe novel coronavirus disease 2019 (COVID-19) disease. A potential for severe COVID-19 disease might be hypothesized in Cushing disease patients. We present a finding of asymptomatic COVID-19 positive nasopharyngeal PCR test in an untreated Cushing disease patient. **Case:** A 19 year old female presented in January 2020 reporting amenorrhea and cushingoid facies. Her last menstrual period was two years ago. Low energy, fatigue, easy bruising and dark stretch marks on her legs, axillae and flanks were reported. Physical exam showed blood pressure 123/83 mmHg, pulse 89 bpm, BMI 20.80 kg/m². She had a cushingoid appearance with fullness in the face, neck and supraclavicular area, mild proptosis, pink cheeks and a few faint lavender striae on the inner thighs and flanks. Test results relevant to or supporting a diagnosis of Cushing disease included the following: 1 mg overnight dexamethasone suppression test: AM cortisol 23.9 ug/dl (6.7-22.6 ug/dl). Random 1019 hrs AM ACTH was 32 pg/ml (<47 pg/ml), cortisol 6.5 ug/dl (4-22ug/dl). Repeat 1 mg overnight dexamethasone suppression test: AM cortisol was 36.5 ug/dl (4-22 ug/dl), Dexamethasone 249.2 ng/dl (140-295 expected post 1 mg DXA the night before). 24 hr urine free cortisol was 391.4 (<=45.0 ug/d). Other endocrine labs were within normal limits. Left sided hypoenhancing lesion (2mmx2mmx2mm) consistent with pituitary microadenoma was seen on pituitary MRI. Inferior petrosal sinus sampling supported the presence of central disease and left pituitary location, concordant with the MRI. The time course from first clinical presentation to surgery was impacted by the COVID 19 pandemic temporarily halting elective surgical treatments and her access to care. At August, 2020 pre-op evaluation, the COVID-19 nasopharyngeal PCR was positive. Surgery was rescheduled. She denied symptoms of COVID-19 but recalled community exposure, including known COVID-19 positive contacts, while working as a waitress. **Discussion:** Increased susceptibility to and increased severity of COVID-19 manifestations might be feared in Cushing disease patients due to Cushing disease-associated immunosuppression, hyperglycemia, hypertension, obesity and venous thromboembolism. In contrast, randomized control trials have shown glucocorticoids, at doses sufficient to produce iatrogenic Cushing syndrome, may improve mortality in COVID-19 patients. Although asymptomatic COVID-19 infection is known to occur in young adults, the finding of asymptomatic COVID-19 positive test in a young woman with untreated Cushing disease also raises the possibility that endogenous hypercortisolism confers a similar benefit against severe manifestations of COVID-19 infection.

Neuroendocrinology and Pituitary

NEUROENDOCRINOLOGY AND PITUITARY CASE REPORTS

Cushing's Disease (CD) Due to ACTH-Secreting Pituitary Microadenoma Incidentally Discovered on a Sestamibi Scan for Primary Hyperparathyroidism

Hassan Mehmood, MD[1], Murray B. Gordon, MD[2].
[1]Allegheny Health Network, Pittsburgh, PA, USA, [2]Allegheny General Hospital, Pittsburgh, PA, USA.

Introduction: MIBI scintigraphy is commonly being used for the preoperative localization of parathyroid adenomas. Multiple studies showed MIBI uptake in pituitary adenomas are likely due to higher metabolic activity. When hyperfunctioning pituitary adenomas were reported, both had CD [1,2]. We present the third case of increased pituitary uptake on a MIBI scan later confirmed as CD. CaseA 64-year-old Caucasian female s/p renal transplantation for RPGN who presented for evaluation of hypercalcemia. Evaluation confirmed primary hyperparathyroidism with persistently elevated PTH levels 74-108 pg/ml (11-68), serum calcium levels 10.0-10.4 mg/dl (8.4-10.3), albumin 4.1-4.3 g/dl (3.6-5.1), phosphorus 3.0-3.2 mg/dl (2.5-4.5), creatinine 0.94-1.07 mg/dl. 24-hour urine calcium 60 mg/day (35-250). Vitamin D-25 OH level was 37 ng/dL (30-100). A sestamibi scan showed uptake in the right lower parathyroid, the midsternal chest region and the pituitary gland. MRI of the pituitary revealed a 7mm cystic pituitary microadenoma in the right posterior pituitary. CD was confirmed by the findings of persistently elevated 8 AM serum cortisol levels of 28.4 and 24.2 mcg/dl (4-22), ACTH levels of 59 and 39 pg/ml (10-48), and an elevated plasma

free cortisol of 1.43 mcg/dl (0.07-0.93). CT of the abdomen showed L adrenal thickening suggesting adrenal hyperplasia from CD. Plasma cortisol suppressed to 1.2 mg/dl following 1 mg of dexamethasone. 24 urine for free cortisol 26.7 mcg/day (4-50). The patient had no proximal muscle weakness, striae or Cushingoid facial features. She had no hyperglycemia or hypertension. Patient was diagnosed with an ACTH secreting pituitary microadenoma with mild CD and adrenal hyperplasia. Her DXA scan showed osteoporosis. Genetic testing for MEN1 mutation was negative. Patient did not wish surgery for either her hyperparathyroidism or her CD and is being evaluated for medical treatment of hypercortisolism. **Conclusion:** There are two prior case reports of an incidentally discovered pituitary adenoma on sestamibi scan later diagnosed as CD [1,2]. Corticotrophs may have a strong affinity for sestamibi. Our case is the first, to our knowledge, of pituitary MRI confirmation of the ACTH secreting pituitary incidentaloma initially suspected by pituitary uptake on a sestamibi scan in a patient with hyperparathyroidism. Reference1. Kuhadiya ND et al. Incidentally Discovered ACTH-Secreting Pituitary Adenoma on a Sestamibi Scan in a Patient With Hyperparathyroidism. AACE Clinical Case Reports. 2015;1(3):e152-5. 2. Gierach M et al. The case of Cushing's disease imaging by SPECT examination without manifestation of pituitary adenoma in MRI examination. Nuclear Medicine Review. 2005;8(2):137-9.

Neuroendocrinology and Pituitary

NEUROENDOCRINOLOGY AND PITUITARY CASE REPORTS

Cushing's Disease Presenting With Severe Weight Loss, Anorexia and Refractory Psychotic Depression

Tara Muire McDonnell, Mb Bao bch[1], Michael Lockhart[1], Carmel Kennedy[1], Leanne Cussen[1], Graham Roberts[2], Diarmuid Smith[1], Mohsen Javadpour[3], Amar Agha[1].
[1]Department of Endocrinology, Beaumont Hospital, Dublin, Ireland, [2]Department of Endocrinology and Diabetes, Waterford Regional Hospital, Waterford, Ireland, [3]Department of Neurosurgery, Beaumont Hospital, Dublin, Ireland.

Introduction: In this paper we report an unusual case of Cushing's disease presenting with psychotic depression, paranoia, anorexia leading to severe weight loss culminating in 18% of her body weight. **Case:** A 22 year old female admitted with first episode psychosis to her local hospital displaying psychotic depressive symptoms, low mood, severe anorexia and mood congruent delusions regarding food contamination. Clinical manifestations of Cushing's were recognised: cushingoid facies, facial plethora, hirsutism with striae and proximal myopathy. The degree of weight loss (70kg to 57kg) and paranoid ideation surrounding food necessitated caloric supplementation parenterally. Laboratory indices notable for hypokalaemia of 2.7nmol/l, male range testosterone level of 10.7nmol/l, DHEAS>27.1umol and suppressed gonadotrophins. Urine Free Cortisol was >25 times normal. Late night salivary cortisol was 13.4nmol/L(<2.6nmol/L). ACTH was raised at 74.0pg/ml in keeping ACTH dependent Cushing's. MRI pituitary showed a bulky pituitary. CRF testing and Inferior Petrosal Sinus Sampling both indicated pituitary dependent Cushing's disease. Following Metyrapone therapy and nutritional treatment the patient condition improved. She proceeded to transphenoidal pituitary exploration. Intraoperatively a very soft central lesion was excised and neuropathology confirmed a corticotroph adenoma. Post-operative morning cortisol at day 3 was 31nmol/l indicating early remission. 3 months post-operative there was remarkable improvement in mood, weight, cessation of anti-psychotics with normal diet and return of menses. She remained severely hypocortisolaemic 6 months post-op **Conclusion:** Cushing's disease may present with severe psychiatric manifestation and significant weight loss. Clinicians need to be vigilant of psychosis as the primary presentation of Cushing's disease.

Neuroendocrinology and Pituitary

NEUROENDOCRINOLOGY AND PITUITARY CASE REPORTS

Cushing's Disease: Not Always Black and White

Kajal Shah, MD[1], Alan Chang, MD[2], Natalie Jarahzadeh, MS43.
[1]Stony Brook Medicine/University Hospital Endocrine Fellowship Program, Stony Brook, NY, USA, [2]Stony Brook University, Miller Place, NY, USA, [3]Renaissance School of Medicine at Stony Brook University, Stony Brook, NY, USA.

Cushing's Disease is a well known entity but the difficulty of diagnosis is often underappreciated. Given the wide spectrum of clinical presentation and pitfalls with each diagnostic evaluation, diagnosis of Cushing's Disease (CD) is often difficult in clinical practice, even with pathological analysis. A 37 year old female with a history of Cushing's Disease presented for her third transphenoidal resection to our institution. She was diagnosed with a pituitary microadenoma 16 years ago based on MRI, as she had persistent headaches and vision abnormalities. The patient also reported unexplained weight gain, "buffalo hump", and moon facies at the time. She was diagnosed with CD due to an abnormal 1 mg overnight dexamethasone suppression test (DST) with AM cortisol of 3.03 ug/dl (normal <1.8 microgram/dl). She was on an oral contraceptive pill (OCP) at the time. The patient underwent her first pituitary transsphenoidal resection and was symptom free for about 10 years, after which she had a recurrence of her initial symptoms. She had another abnormal DST while on an OCP and pituitary MRI revealed growth of the pituitary adenoma. Patient underwent a second pituitary surgery with benign postoperative course with a recurrence about 5 years later. The workup prior to her third surgery revealed an abnormal DST while on OC pills with the 8am cortisol being 3.36 ug/dl (<1.8ug/dl), urinary free cortisol 35.4 mcg/24 hour (4-50 mcg/24 hour). 8am ACTH done on a separate day was 48 pg/ml (6-50 pg/ml) with a cortisol of 14.5 ug/dl. Midnight salivary cortisol was not performed. Interval history was still positive for weight gain and headaches, hence she was referred for her third pituitary surgery. Post surgery, the patient was on a short taper of hydrocortisone and 8am cortisol was 32 ug/dl the next day. After a discussion with the pathologist, it was determined that the pathology was suggestive of a corticotroph adenoma with moderate ACTH staining and patchy nuclear staining for TPIT, although the pathologist stated that it