

INTRODUCTION

- ❑ The covid19 pandemic has been of greatest challenge to healthcare. Of all the systems affected by SARS-CoV-2, new-onset endocrine dysfunction is slowly being recognized. Among these, pituitary diseases are even rare, and the causal relationship is difficult to establish.
- ❑ Few literature reviews have suggested involvement of transmembrane serine protease TMPRSS2, which acts as a co-receptor for viral entry by priming the spike protein of SARS-CoV2, to have significant role in instigating pituitary disease.

CASE DISCUSSION

- ❑ 90-year-old female presented for evaluation of cough and shortness of breath requiring 2 L of oxygen to maintain adequate saturation.
- ❑ She tested positive for Sars-CoV2, was started on remdesivir and decadron and admitted inpatient.
- ❑ On day 3, a sudden drop in sodium level from 133 to 122 was noted. Workup showed serum osmolality of 275, urine osmolality 219 and urine sodium 25. She was on torsemide which was discontinued for concerns of hypovolemic hyponatremia.
- ❑ Sodium level did not improve so a trial of fluid restriction along with salt tablets was done but sodium level remained unchanged. This was concerning as the patient developed fatigue and headache. Tolvaptan was given as recommended by Nephrologist without any success.
- ❑ Further workup showed AM cortisol of 1.9, ACTH 6 and TSH of 1.5 with free T4 0.7. Cortisol level after ACTH stimulation test was 19 mcg.dL CT abdomen and pelvis showed no adrenal hemorrhage or infarct.

DIAGNOSIS

- ❑ MRI brain showed hypointense parasellar region, no mass or adenoma.
- ❑ Endocrinologist suggested this could be hypophysitis due to SARS-CoV-2 causing pituitary insufficiency.
- ❑ The patient was started on hydrocortisone 20 mg twice a day for secondary adrenal insufficiency. Interestingly, her sodium level improved to 130 in the next 2 days.
- ❑ She was discharged on tapering dose of oral hydrocortisone and thyroid hormone replacement, and instructed to follow up with endocrinology in a month.



Fig 1 & 2: sagittal and coronal T1 with hypointensity in parasellar region without mass or adenoma

DISCUSSION

- ❑ Hypophysitis associated with SARS-CoV-2 is a rare occurrence.
- ❑ Most of the systems affected by this virus have been associated with ACE2-receptor mediated viral entry. However, expression of these receptors in pituitary gland is minimal.
- ❑ The possible cause for association is TMPRSS2, which is a co-receptor for viral entry and is expressed in highest level in pituitary gland.
- ❑ These patients develop secondary adrenal insufficiency, secondary hypothyroidism and/or hypogonadotropic hypogonadism depending on severity.
- ❑ Our patient developed acute hyponatremia in the setting of secondary adrenal insufficiency which improved on steroids. Clearly, the role of interprofessional teams in evaluating and treating these patients in a timely manner is imperative.

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