Hypophysitis after COVID-19 Infection

Sir,
We read with great interest the article by Kumar et al.,[1] regarding endocrine dysfunction among patients with coronavirus disease-19 (COVID-19).

While there have been reports of pituitary involvement in COVID-19 in the form of pituitary apoplexy on the background of underlying adenoma, we recently came across a case with hypophysitis after COVID-19 infection.[2] A 27-year-old male patient presented with malaise, anorexia, and vomiting associated with early morning headaches since the past 4 weeks. He did not have fever, diplopia, pain abdomen or polyuria. He had been diagnosed as COVID-19 by reverse
transcriptase-polymerase chain reaction (RT-PCR), 2 weeks prior to the onset of present symptoms. He had not received vaccination against COVID-19. He had mild symptoms at that time and was managed conservatively. He did not receive any glucocorticoids and did not require supplemental oxygen. His physical examination was unremarkable. There was no postural hypotension or visual field defect. Laboratory evaluation revealed hyponatremia (120 meq/L), hypocortisolism (8 am cortisol <0.50 µg/dl) and hypothyroidism (TSH 3.07 µIU/ml and free T4 0.45 ng/dl, normal range of free T4:0.89–1.76 ng/dl). His serum testosterone and gonadotropins levels were also low. He had hyperprolactinemia (93.12 ng/ml, normal range 2.1-17.7 ng/dl). In view of the panhypopituitarism, MRI of sella was advised. MRI revealed a diffusely enlarged pituitary and thickened stalk with homogenous post-contrast enhancement [Figure 1]. These findings were suggestive of hypophysitis.

A provisional diagnosis of lymphocytic hypophysitis, possibly related to COVID-19 was kept. He was initiated on therapeutic doses of steroids for hypophysitis and thyroxine replacement. He is currently under our follow-up.

The hypothalamus and pituitary are putative targets for severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) due to angiotensin-converting enzyme2 (ACE2) expression. Leow et al.,[3] reported post-infectious hypophysitis with transient hypocortisolism in patients who survived the previous severe acute respiratory syndrome (SARS) epidemic. Misgar et al.,[5] recently reported a case of infundibuloneuro-hypophysitis which presented with central diabetes insipidus. However, there was no involvement of the anterior pituitary as demonstrated by normal hormonal in their patient.

We did not perform a pituitary biopsy to confirm our diagnosis and the causality with COVID-19 cannot be proven in our case. However, the past history of COVID-19 in this patient and the propensity of SARS-CoV-2 to affect endocrine tissues makes this diagnosis a possibility.

In light of our experience, hypophysitis should figure in the list of differential diagnosis when patients with exposure to COVID-19 present with pituitary dysfunction.

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Conflicts of interest
There are no conflicts of interest.

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