**Introduction**

Coronavirus disease 2019 (COVID-19) is primarily a febrile respiratory illness declared a pandemic on March 11, 2020. The pathophysiology of the virus is complex and remains under investigation. As a result of this, new manifestations of this disease process continue to be discovered. We submit complex and remains under investigation. As a result of this, new declarations of a pandemic on March 11, 2020. The pathophysiology of the virus is

**Case Description**

**History of Present Illness**

35 year-old previously healthy male who presented to the ED for three days of sharp retro-orbital headache and neck stiffness. He states that he began to have upper respiratory tract infection symptoms four days prior to arrival, including fevers, loss of smell and taste, increased sputum production and non-bloody diarrhea. No visual changes, diplopia, pain with extraocular movements, focal weakness, or sensory changes.

**Vitals**

Temp 101.1°F BP 142/89 HR 117 RR 20 O2 sat 95%

**Pertinent Physical Exam**

GEN: Well-developed, well nourished, diaphoretic male

NEURO: Normal neurological examination. No visual field deficits.

**Pertinent Labs**

CBC normal

LFTs in a hepatocellular injury pattern (ALT 293, AST 141, LDH 318)

COVID positive via PCR

**Hospital Course**

Neurosurgery was consulted and the patient was admitted to the ICU. Repeat head CT revealed slight worsening of the bleed with MRI later confirming hemorrhagic pituitary microadenoma consistent with pituitary apoplexy. During hospitalization, the patient developed pancytopenia, which has been consistent with COVID-19 infection [2]. Hormone testing was unrevealing the remained of his hospitalization was unremarkable and was discharged with endocrinology follow up.

**Discussion**

Pituitary apoplexy is a rare neurological and endocrine emergency due to hemorrhage or infarction of the pituitary gland. Risk factors have traditionally included pregnancy and the post-partum period, trauma, hypertension and coagulopathies. Presentation is usually in the 5th to 6th decade of life [1,2]. None of which were present in our patient.

Typical COVID-19 infections have come to be associated with lung injury as well as proinflammatory/thrombotic states such as PE [5]. To date, there are few reports of spontaneous bleeding in the setting of COVID-19, or neurological manifestations although myelitis and acute necrotizing hemorrhagic encephalopathy have both been reported [3,4].

COVID-19 in the setting of pituitary apoplexy makes the management more complicated. Patients with COVID-19 who complain of headache are likely to appear septic and have concerning presentations for meningitis. Furthermore, if the patient is already experiencing hypopituitarism, it would be easy to attribute hypotension to severe sepsis and septic shock. This could lead emergency providers to miss the potential brain hemorrhage or the adrenal crisis, which requires additional management considerations.

**Conclusions**

This case demonstrates a very uncommon though potentially lethal variation on the presentation of COVID-19 infections. While headache is not an uncommon presentation in acute viral infections this case presents a new concern that may warrant neuraxial imaging of patients suspected of having COVID-19 infections in the setting of headache. COVID-19 infections raise concern for CNS involvement and while typical practice may allow for an LP without CT imaging given a normal neurologic exam this case demonstrates potentially missed alternative diagnoses that require specialized care. Further research into the prevalence of CNS hemorrhage and COVID-19 infection will further inform this discussion. When encountering a patient suspected of COVID-19 with headache in the emergency department consideration for CNS hemorrhage should occur.

**References**


