

# A case of a spontaneous brain bleed with no neurologic deficits in a COVID-19 patient

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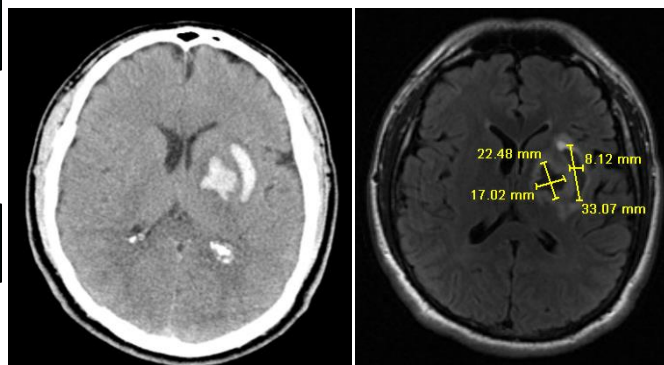
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## Case Diagnosis

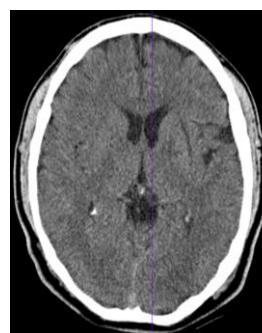
A young man with mild COVID-19 (SARS-CoV-2) infection with a transient ischemic attack who was found to have a significant basal ganglia hemorrhage but no neurologic deficits.

## Case Description

A 40-year old man with no past medical history was admitted to the medical intensive care unit following a brief episode of slurred speech and right-sided weakness with an initial NIHSS of 6. CT head and MRI brain were significant for acute left basal ganglia hemorrhage with surrounding edema. The patient was evaluated by the neurology, neurosurgery, and physical medicine and rehabilitation team within 12 hours of initial presentation and had complete resolution of previously documented symptoms. The patient was also found to be positive for the COVID-19 virus, however, his only symptoms were desaturation to 92% on room air. Serial CT head scans remained stable. Complete neurologic workup including hemoglobin A1c, lipid panel, inflammatory markers, coagulopathy profile, the autoimmune panel returned within normal limits. The patient's blood pressure also remained stable throughout. The patient was discharged with outpatient follow up and remained without neurologic symptoms.



CTH w/o contrast (right) and MRI Brain w/ contrast (left) demonstrating acute hemorrhage of the left basal ganglia and left lateral ventricle with surrounding edema and mild effacement of the anterior horn of the left lateral ventricle.



Repeat CTH w/o contrast performed at outpatient follow up 2 months later with previously noted hemorrhage now isodense to mildly hypodense consistent with resolving subacute hematoma.

## Discussion

While the number of cases of neurologic manifestations of SARS-CoV-2 infection is rapidly increasing as the pandemic continues, few cases of mild COVID-19 infection with concurrent asymptomatic intracerebral hemorrhage (ICH) have been noted in the literature to date. The known COVID-19 central nervous system (CNS) diseases that have been identified thus far include encephalitis, encephalopathy, meningitis, and ischemic and hemorrhagic stroke. These CNS insults are theorized to result from various mechanisms including hypercoagulable states, virus-mediated inflammation, as well as post-infectious immune-mediated processes.

## Conclusion

The incidence of spontaneous brain hemorrhages with COVID-19 infection needs further study. This case highlights a unique patient with a spontaneous basal ganglia hemorrhage with only mild symptoms of COVID-19 who was fortunate enough to immediately recover with no neurological sequelae.

### References:

Koralnik IJ, Tyler KL. COVID-19: A Global Threat to the Nervous System. *Ann Neurol*. 2020 Jul;88(1):1-11. doi: 10.1002/ana.25807. PMID: 32506549; PMCID: PMC7300753..