

## Comments on: Neuro-ophthalmic presentation of COVID-19 disease: A case report

Dear Editor,

With interest we read the article by Katti *et al.* about a 46-year-old male with symptomatic SARS-CoV-2 infection who developed acute loss of vision 10 days after onset of COVID-19.<sup>[1]</sup> Initially, optic neuritis was suspected, why methyl-prednisolone was applied.<sup>[1]</sup> MRI, however, revealed a pituitary macro-adenoma with apoplexy and bleeding.<sup>[1]</sup> The report is appealing but raises the following comments and concerns.

Ischemic stroke is an increasingly recognized central nervous system (CNS) complication of COVID-19.<sup>[2]</sup> Ischemic stroke in COVID-19 patients is multi-causal and may be due to micro-/macro-angiopathy, cardio-embolism, hypercoagulability, thrombocyte dysfunction, or arterial hypertension. We should be told which of these mechanisms was made responsible for hemorrhagic stroke of the macro-adenoma.

A shortcoming of Fig. 1 is that only two MRI modalities (T1, T2) were provided. Since the patient was diagnosed with hemorrhagic stroke of the pituitary gland it is crucial to provide DWI, PWI, and SWI modalities and MR-angiography to assess if major cerebral arteries were properly perfused.

Since steroids may promote cerebral bleeding and may prolong SARS-CoV-2 viremia,<sup>[3]</sup> we should be told why the patient received steroids although the diagnosis COVID-19 had been established already. Since acute visual loss is multi-causal and since therapy should start after establishing a diagnosis, it is crucial that cerebral imaging is carried out before starting steroids. Since steroids are not only beneficial but potentially harmful, the indication should be clear-cut.

It should be explained why the patient did not undergo immediate neurosurgery. Since he experienced acute visual loss and steroids were only partially beneficial it would have been comprehensible to decompress the chiasma immediately. Obviously, the macro-adenoma became symptomatic due to swelling from SARS-CoV-2-associated apoplexy and bleeding.

Missing are the outcome after neurosurgery and the long-term outcome of vision, particularly if it recovered completely or only partially.

Overall, the interesting case has limitations that challenge the conclusions.

### Author contribution

JF: design, literature search, discussion, first draft, critical comments

Informed consent: was obtained

The study was approved by the institutional review board.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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Access this article online	
Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_634_21

Cite this article as: Finsterer J. Comments on: Neuro-ophthalmic presentation of COVID-19 disease: A case report. *Indian J Ophthalmol* 2021;69:2554.

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