a greater effect. Because blood flow in the macula is divided into upper and lower arcade vessels, macular PD reduction caused by BRVO should not extend to the unaffected side. Therefore, the decreased RS on the unaffected side may be due to macular oedema and photoreceptor cell damage with serious retinal detachment (SRD) (Ota et al. 2007). Patients with a shorter time between onset and treatment had a better visual prognosis (Scott et al. 2011). In this study, RS at baseline positively correlated with VA. Because natural recovery of VA beyond 20/40 occurs in few patients (Rogers et al. 2010), early treatment initiation is strongly recommended before macular oedema or SRD reduces RS on the unaffected side.

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Received on October 22nd, 2020. Accepted on February 23rd, 2021.

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Bilateral acute macular neuroretinopathy following COVID-19 infection

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doi: 10.1111/aos.14913

E ditor.

A 23-year-old woman had fatigue, nasal congestion, headache, vertigo and sweating for two weeks without fever. The next day, she noticed photopsias which evolved to several paracentral scotomas in both eyes. Ophthalmologic examination in the emergency room revealed best-corrected visual acuity of 20/20 in both eyes. Ishihara colour vision testing revealed dyschromatopsia only in the left eye. Pupillary reaction, ocular motility, biomicroscopy and funduscopy were within normal limits. Spectral-domain optical coherence tomography (SD-OCT) now showed decreased vascular flow signal at the level of the deep capillaryplexus (DCP) in the region of the OCT and NIR abnormalities (Fig. 1A–D). Fluorescein angiography and indocyanine green angiography were normal in both eyes. Optical coherence tomography angiography (OCT-A, Angiovue RTx 100, Optovue, Inc, Fremont, CA, USA), however, showed decreased vascular flow signal at the level of the deep capillaryplexus (DCP) in the region of the OCT and NIR abnormalities (Fig. 1E, F). A final diagnosis of bilateral acute macular neuroretinopathy (AMN) was made. Given her excellent visual acuity, no specific treatment was recommended. One month later, the examination and ancillary testing did not show any remarkable changes.

In a previous review of 101 cases of AMN (Bhavsar et al. 2016), almost half were associated with a preceding respiratory or influenza-like illness. Our patient had preceding flu-like symptoms from COVID-19, and shortly after noticing the visual disturbance, she had a herpes labialis eruption. We believe this was either concomitant infection with SARS-CoV-2 or reactivation by SARS-CoV-2. The published literature does not implicate HSV-1 virus with AMN.

The pathophysiology of AMN is a non-inflammatory vaso-occlusive
disorder of retinal capillaries. Optical coherence tomography (OCT) and OCTA changes related to capillary vasculopathy have been reported in the DCP and/or choriocapillaris (Casalino et al. 2019), (Fawzi et al. 2012). The typical fundus abnormality of AMN is one or more wedge-shaped, well-delineated lesions pointing to the fovea (Bhavsar et al. 2016). AMN following COVID-19 infection is rare. Two previous published cases (Gascon et al. 2020; Virgo & Mohamed 2020) reported small, focal petaloid lesions in one affected eye. However, our patient demonstrated unusually large, confluent lesions in both eyes, which suggested a large area of retinal pathology. We wonder whether endotheliopathy due to direct SARS-CoV-2 infection predisposes to greater retinal ischaemia and larger lesions of AMN (Iba et al. 2020). Systematic ophthalmologic examination of patients with coronavirus disease may clarify the prevalence and clinical profile of AMN associated with COVID-19.

Open Access Funding provided by Universite de Lausanne.

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Received on February 13th, 2021.
Accepted on May 1st, 2021.

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Spectral calibration of fluorescence lifetime imaging ophthalmoscopy

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doi: 10.1111/aos.14950
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