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Seeking clarity on retinal findings in patients with COVID-19

Paula M Marinho and colleagues¹ described hyper-reflective lesions in ganglion cell and inner plexiform layers on optical coherence tomography (OCT) images from 24 eyes of 12 adults who had symptoms of COVID-19. Marinho and colleagues argued that these lesions could be associated with COVID-19-related neurological events in humans.² On the basis of the fundamental principles of OCT, we hold different views as to how the hyper-reflective foci were generated and their relevance to COVID-19.

Because of high light absorption and reflection of the retinal blood and vessel walls, retinal blood vessels can be visualised in OCT images as hyper-reflective, tube-like structures with shadows underneath.^{3,4} Therefore, all hyper-reflective lesions marked out by Marinho and colleagues by arrows in the figure of their Correspondence¹ can be adequately explained by normal retinal blood vessels extending into the ganglion cell and inner plexiform layers.

In the appendix, we share two OCT images (Spectralis OCT, Heidelberg Engineering, Heidelberg, Germany) and two infrared fundus images of the same eye from one healthy person. The retinal blood vessels in the infrared fundus images correspond to the hyper-reflective, tube-like structures with obvious shadows in the ganglion cell and inner plexiform layers of the OCT images.

In summary, relating the retinal OCT findings of 12 patients to the consequences of COVID-19 is not well validated. Marinho and colleagues¹ should provide further elaborate analysis and scientific comparison to confirm the hyper-reflective characteristics of the retinas and their conclusion.

We declare no competing interests.

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