

Ocular stroke and COVID-19

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To the Editor—Recent reports have linked retinal vascular diseases with the hypercoagulability and thromboembolic pathology of coronavirus disease 2019 (COVID-19). Central retinal artery occlusion (CRAO), also known as ocular stroke, is a sight-threatening ophthalmological emergency, and its reported correlation with COVID-19 is of particular interest to our territory-wide tertiary CRAO referral centre in Hong Kong.

In a literature search, we found only three case reports¹⁻³ and two case series^{4,5} with at least one patient with COVID-19 presenting with stroke symptoms identified as CRAO. One case report on ophthalmic artery occlusion was excluded. Acharya et al¹ reported a 60-year-old man with history of hypertension, hyperlipidaemia, coronary artery disease, and chronic obstructive pulmonary disease, who presented with right CRAO 12 days after testing positive for COVID-19. He had D-dimer level 42.131 (no unit provided), fibrinogen level >700 (no unit provided), and C-reactive protein (CRP) level 7.02 (no unit provided). Montesel et al² reported a 59-year-old man with history of hypertension and hyperuricaemia who presented with left CRAO 69 days after testing positive for COVID-19. He had D-dimer level 2.059 ng/mL, fibrinogen level 5.9 g/L, and CRP level 184 mg/L. Murchison et al,³ Sweid et al,⁴ and Alam et al,⁵ all affiliated with the same institution, apparently described the same patient, with similar lesion site and blood test results (some minor differences and/or errors in reporting notwithstanding). These authors all describe a 59-year-old man with history of hypertension who presented with right CRAO after testing positive for COVID-19 (date of positive test not reported). He had D-dimer level 450 ng/mL, fibrinogen level 5.45 g/L, and CRP level 21 mg/L.

Central retinal artery occlusion is a rare disease worldwide, with an estimated annual incidence of 0.85 per 100 000 population, which could account for

the few published case reports. All cases had at least one known risk factor for CRAO, with hypertension being the commonest. The correlation of CRAO and COVID-19 is uncertain, but we believe these cases do not demonstrate any causal link.

Author contributions

SCL Au drafted the letter and all authors contributed to the critical revision of the letter for important intellectual content. All authors approved the final version for publication and take responsibility for its accuracy and integrity.

Conflicts of interest

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