

Ischemic stroke in young subjects attributable to SARS-COV2 disease: A case report

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Introduction: Acute cerebrovascular diseases are not uncommon in patients with SARS-COV2 but the relationship between them is still unclear. We highlight this link in a young patient who had no vascular risk factor and discuss the mechanisms and the prognosis.

Case: A healthy 44 years old man, admitted to the emergency department for a sudden left hemiplegia and ipsilateral visuo-spatial hemi-neglect, associated to confusion, fever and dyspnea, evolving for 15 hours. His O₂ saturation was 81%. His NIHSS score was 19. Brain CT scan revealed total right carotid ischemic cerebral stroke with midline mass effect. SARS-COV2 PCR was positive, and chest CT showed a severe pneumonitis. CRP, D-Dimer, fibrinogen, and ferritin were in very elevated levels. Cardiac assessment was normal. Echodoppler of the supra-aortic trunks objectified an occlusion of the right internal carotid, confirmed by brain angio-scan; there were no other atheromatous lesions elsewhere. Lipidic, Immunological profile including anti-phospholipid Abs, hemostasis, homocysteine, and tumor markers; were normal. Multidisciplinary management saved our patient, however he kept a severe hemiplegia. His mRS was 4.

Discussion : Several pathophysiological mechanisms are involved in the occurrence of ischemic stroke during SARS-COV2; renin-angiotensin system which would be the mode of intrusion of the virus, increased release of cytokines inhibiting fibrinolysis, elevated level of CRP increasing the thromboembolic risk, and mitochondrial damage within the vascular wall. Coexistence of vascular risk factors makes it difficult to establish the causal link in this association. Our observation places SARS-COV2 as an independent risk factor for stroke.

