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In Reply to the Letter to the Editor Regarding “Battle-Tested Guidelines and Operational Protocols for Neurosurgical Practice in Times of a Pandemic: Lessons Learned from COVID-19”



We greatly appreciate the authors' interest in our article¹ and thank them for their input on the impact of COVID-19 in children and young adults with moyamoya disease. We agree that there is strong evidence on the association between COVID-19 and neurologic disease.^{2,3} Whether this is caused by a proinflammatory or hypercoagulable state is a topic of continuous debate. However, as reported by Ellul et al.,⁴ COVID-19 is associated with elevation of D-dimers and C-reactive protein, as well as other markers that could collectively deplete the patients' cerebrovascular reserve and unmask moyamoya in its early stages. This is particularly striking considering that reports have repeatedly confirmed that children and young adults usually have a mild disease course of COVID-19,^{5,6} and clinicians may therefore not suspect COVID-19 as a catalyst for symptomatic moyamoya angiopathy in this young patient population.

Devising new guidelines for the management of less common neurologic diseases in the setting of COVID-19 is challenging due to relative rarity of such diseases, such as moyamoya, and requires a multinational concerted effort. However, this is crucial because “fast-tracking” this patient population can lead to improved neurologic recovery of patients. As mentioned by the authors, a potential launching pad may be a global registry,⁷ which could expedite those efforts to provide patients a more tailored approach toward surveillance, management, and

follow-up in the setting of a SARS-CoV-2 infection or other viral strains.

Fadi Al Saiegh and Pascal Jabbour

Department of Neurological Surgery, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, USA

To whom correspondence should be addressed: Pascal Jabbour, M.D.

[E-mail: pascal.jabbour@jefferson.edu]

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