



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Available online at www.sciencedirect.com

ScienceDirect

Biomedical Journal

journal homepage: www.elsevier.com/locate/bj

Letter to the Editor

Author reply to letter to the editor “Imaging abnormalities in pediatric neuro-COVID are more diverse than specified”

Alex Mun-Ching Wong ^{a,b,*}, Cheng Hong Toh ^{b,c}^a Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital at Keelung, Keelung, Taiwan^b College of Medicine, Chang Gung University, Taoyuan, Taiwan^c Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan

ARTICLE INFO

Article history:

Received 10 August 2022

Accepted 12 August 2022

Available online xxx

Keywords:

Pediatric

Neuro-COVID

Hemorrhagic leukoencephalitis

Fulminant edema

This letter is in response to the letter by Dr Finsterer [1], which commented on our review of neuroimaging mimics in children with COVID-19 infection [2] and expressed that our article was interesting but incomplete and should include more neuroimaging abnormalities associated with pediatric COVID-19 infection. We appreciate their interest in this article and feel encouraged to share our common enthusiasm towards the neuroimaging manifestations in pediatric COVID-

19 infection, based on the common belief that the neuroimaging abnormalities are likely to be diverse or placed on a spectrum, as our titles indicate.

In our review article, we aimed to address the neuroimaging spectrum of the majority of reported neurological diseases in children with COVID-19 infection. Specifically, ischemia was discussed under venous sinus thrombosis, and vasculitis and infarction. Inflammatory brain diseases were discussed in our article under encephalitis, acute necrotizing encephalopathy, and acute disseminated encephalomyelitis. However, because of space limitation, rarely reported neurological entities were not included in our article. As COVID-19 infection continues to spread among children globally at the time of writing this response, neurological disorders not previously reported to associate with COVID-19 infection are expected to emerge. Likewise, during the recent Omicron subtype outbreak in Taiwan that was nine months after the writing of our review article, rarely reported severe neurological conditions like acute fulminant cerebral edema and acute hemorrhagic leukoencephalitis had emerged in our institution.

We encourage and appreciate the continual enthusiastic concern on neuroimaging manifestations of children with

* Corresponding author. Department of Medical Imaging and Intervention; Chang Gung Memorial Hospital; 5 Fu-hsing Str., Taoyuan, 333, Taiwan.

E-mail address: alexmcwchop@yahoo.com (A. Mun-Ching Wong).

Peer review under responsibility of Chang Gung University.

<https://doi.org/10.1016/j.bj.2022.08.004>

2319-4170/© 2022 Chang Gung University. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article as: Mun-Ching Wong A, Toh CH, Author reply to letter to the editor “Imaging abnormalities in pediatric neuro-COVID are more diverse than specified”, Biomedical Journal, <https://doi.org/10.1016/j.bj.2022.08.004>

COVID-19 infection. We hope such a concern may let us more thoroughly understand the pathophysiology and help the management of these neurological conditions.

Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES

- [1] Finsterer J. Imaging abnormalities in pediatric neuro-COVID are more diverse than specified. *Biomed J* 2022;45:424–5.
- [2] Wong AM, Toh CH. Spectrum of neuroimaging mimics in children with COVID-19 infection. *Biomed J* 2022;45:50–62.