Cytotoxic Edema Involving the Corpus Callosum and Middle Cerebellar Peduncles in a Young Patient With Mild COVID-19

Author(s):
Klaus Altmann, MD¹; Katrin Koziol, MD¹; Anna Palaver, MD¹; Gerald Frisch, MD²; Bettina Pfausler, MD³; Raimund Helbok, MD³; Andreas Kampfl, MD¹

Corresponding Author:
Andreas Kampfl, andreas.kampfl@bhs.at

Neurology® Published Ahead of Print articles have been peer reviewed and accepted for publication. This manuscript will be published in its final form after copyediting, page composition, and review of proofs. Errors that could affect the content may be corrected during these processes.
Affiliation Information for All Authors: 1. Department of Neurology, General Hospital Barmherzige Schwestern, Ried im Innkreis, Austria; 2. Department of Radiology, General Hospital Barmherzige Schwestern, Ried im Innkreis, Austria; 3. Neurological Intensive Care Unit, Department of Neurology, Medical University of Innsbruck, Innsbruck, Austria

Equal Author Contribution:

Contributions:

Klaus Altmann: Drafting/revision of the manuscript for content, including medical writing for content
Katrin Koziol: Major role in the acquisition of data
Anna Palaver: Major role in the acquisition of data
Gerald Frisch: Major role in the acquisition of data; Analysis or interpretation of data
Bettina Pfausler: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data
Raimund Helbok: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data
Andreas Kampfl: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data; Other

Figure Count:
Table Count:
0

Search Terms:
[ 120 ] MRI, [ 360 ] COVID-19

Acknowledgment:

Study Funding:
The authors report no targeted funding.

Disclosures:
The authors report no disclosures relevant to the manuscript.

Preprint DOI:

Received Date:
2022-02-09

Accepted Date:
2022-04-19

Handling Editor Statement:
Submitted and editor reviewed. The handling editor was Editor-in-Chief José G. Merino, MD,
A 24-year-old man presented with gait ataxia, scanning speech and otherwise unremarkable neurological examination four days after COVID-19 onset (PCR-confirmed, omicron variant). Brain-MRI (Figure 1) revealed cytotoxic lesions of the corpus callosum (CLOCC) with secondary involvement of the middle cerebellar peduncles. Worsening in neuroimaging triggered empirical treatment with IVIG following methylprednisolone treatment (1g-q-24h/5d). The patient was neither hypoxic nor required ICU-care and clinically improved with resolving neuroimaging findings.

Cerebellar manifestations are rare in CLOCC and have not been described in COVID-19 so far.¹ In our patient, drug-toxicity and metabolic disorders were excluded suggesting hyperinflammation and cytokine storm as potential etiology.²

**References**


**Figure legend**

**Figure 1:** Sequential brain MRI revealing cytotoxic lesions in the corpus callosum and middle cerebellar peduncles. Axial MRI images show cytotoxic lesions in the genu and rostrum of the corpus callosum in diffusion-weighted images (DWI), fluid-attenuated inversion recovery (FLAIR) and T2 with hyperintensity (Panel a, e, f, respectively) and
reduced apparent diffusion coefficient (ADC) (Panel b). While on day 6 lesions of the corpus callosum regress (Panel i + j), new cytotoxic lesions are present in middle cerebellar peduncles (Panel k + l). On day 11, all cytotoxic lesions dissolved (Panel m - t).
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Klaus Altmann, Katrin Koziol, Anna Palaver, et al.
Neurology published online May 16, 2022
DOI 10.1212/WNL.00000000000200816

This information is current as of May 16, 2022