Cerebellar Swelling Followed by Atrophy in Anti-Homer-3 Antibody Associated Cerebellitis

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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.
Contributions:
Yacen Hu: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Analysis or interpretation of data
Qiying Sun: Drafting/revision of the manuscript for content, including medical writing for content; Study concept or design

Figure Count:
1

Table Count:
0

Search Terms:
[ 120 ] MRI, Homer-3, atrophy, cerebellar swelling, cerebellitis

Acknowledgment:
We thank the patient for granting permission to publish this information.

Study Funding:
No targeted funding reported.

Disclosures:
The authors report no relevant disclosures.

Preprint DOI:

Received Date:
2022-04-19

Accepted Date:
2022-06-28
A 26-year-old woman presented with dizziness for four weeks, accompanied by vertigo and imbalance for ten days. Physical examination revealed dysarthria, nystagmus, tremor, and severe ataxia. Infectious and malignant etiologies were excluded. High-titre anti-Homer-3 antibodies were detected in cerebrospinal fluid and serum. Neuroimaging showed prominent cerebellar swelling with enhancement (Figure). She got limited improvement despite aggressive immunosuppression. MRI at 2-months follow-up showed cerebellar atrophy, suggesting unfavorable prognosis.

Anti-Homer-3-associated cerebellitis is rare and usually presents with subacute-insidious onset with cerebellar atrophy, masquerading as multiple system atrophy\(^1,2\). To the best of our knowledge, this is the first case showing transition from cerebellar swelling to atrophy in anti-Homer-3-associated cerebellitis.

**Reference**


**Figure legend**

**MRI findings on admission and at 2-months follow-up**

(A) Initial T2-weighted fluid-attenuated inversion recovery (T2-FLAIR) imaging shows cerebellar hyperintensity and swelling. (B) Axial postcontrast T1-weighted imaging shows leptomeningeal enhancement. (C) Sagittal postcontrast T1-weighted imaging shows herniation of the cerebellar tonsils and effacement of the fourth ventricle. (D) Repeated MRI at 2-months follow-up shows resolution of the herniation and occurrence of cerebellar atrophy.
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*Neurology* published online July 20, 2022
DOI 10.1212/WNL.0000000000201105

This information is current as of July 20, 2022

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