Published Ahead of Print on February 7, 2023 as 10.1212/WNL.0000000000206889

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AMERICAN ACADEMY OF NEUROLOGY®

Neurology Publish Ahead of Print

DOI: 10.1212/WNL.0000000000206889

Teaching NeuroImage: Primary Central Nervous System Vasculitis Mimicking Intracranial Tumor

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Contributions:

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

Shujiang Zhang: Analysis or interpretation of data

Tianping Yu: Analysis or interpretation of data

Dong Zhou: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data

Jinmei Li: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Analysis or interpretation of data; Additional contributions: -

Figure Count: 2

Table Count: 0

Search Terms:

[120] MRI, [134] Vasculitis

Acknowledgment:

Study Funding: The authors report no targeted funding

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

Preprint DOI:

Received Date: 2022-07-22

Accepted Date:

2022-12-20

Handling Editor Statement:

Submitted and externally peer reviewed. The handling editor was Resident and Fellow Section Editor Whitley Aamodt, MD, MPH.

A 21-year-old man with headache, vomiting, and limb weakness presented to the clinic in two years ago. Examination showed paresthesia and weakness in left upper and lower limbs. Brain MRI demonstrated a large space-occupying lesion with ring enhancement and compression of the right fronto-tempo-parietal lobes (Figure 1, A – B). The patient underwent surgery for a presumed glioblastoma. Pathological examination revealed primary central vasculitis (PCNSV) without neoplasm (Figure 2). His screening workup for systemic vasculitis were negative. Symptoms improved after a corticosteroid taper. After stopping immunosuppressive therapy for one year , new lesions were found again in the right frontotemporal lobe (Figure 1, C – D). Corticosteroids and mycophenolate mofetil were given, and the patient's symptoms significantly improved and lesions on MRI had subsided significantly (Figure 1, E – F). MRI findings of PCNSV frequently present as nonspecific white matter lesions[1]. It can mimic glioblastoma[2], CNS lymphoma and tumefactive multiple sclerosis[1].

Appendix 1: Authors

Name	Location	Contribution
Hanlin Sun ,M.D.	West China Hospital , Sichuan University	Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data
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Tianping Yu ,M.D.	West China Hospital , Sichuan University	Analysis or interpretation of data
Dong Zhou, Ph.D.	West China Hospital , Sichuan University	Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data
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http://links.lww.com/WNL/C640

Reference:

1. Hajj-Ali RA, Calabrese LH. Central nervous system vasculitis: advances in diagnosis. Curr Opin Rheumatol 2020;32:41-46.

2. Jin H, Qu Y, Guo Z-N, Cui G-Z, Zhang F-L, Yang Y. Primary Angiitis of the Central Nervous System Mimicking Glioblastoma: A Case Report and Literature Review. Front Neurol 2019;10:1208.

Figure legends:

Figure 1 .MRI of Brain

Brain MRI demonstrates hyperintense irregular mass within the right frontotemporal and parietal lobes with perifocal edema and ring enhancement (A-B). A lesion appeared in the right frontotemporal lobe and corpus callosum, the anterior horn of the right ventricle was significantly compressed (C-D). MRI lesion largely disappeared after immunosuppressant therapy (E-F)

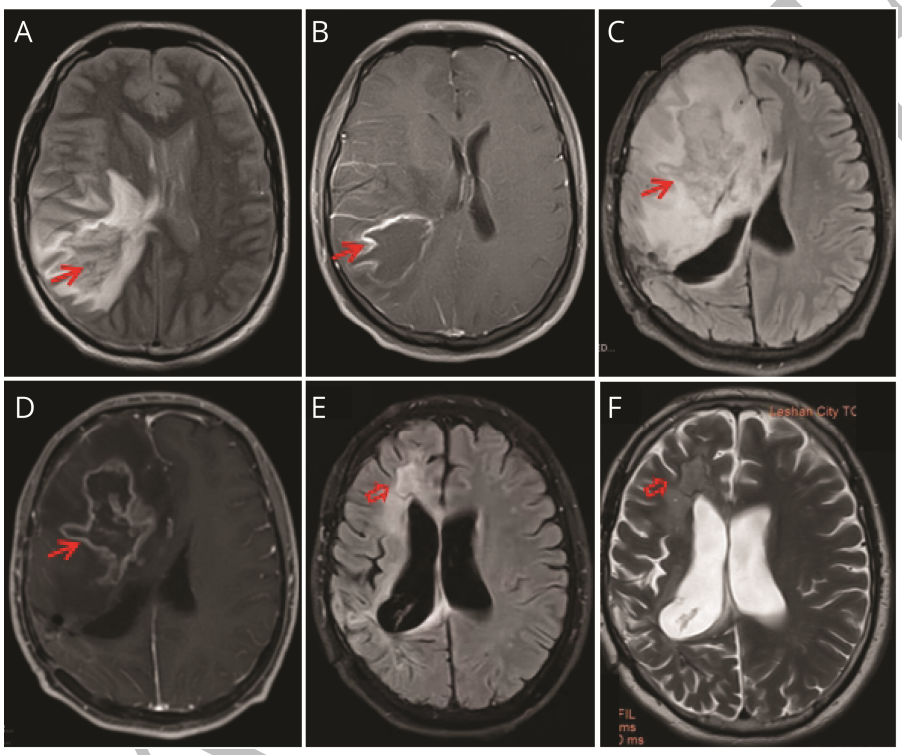
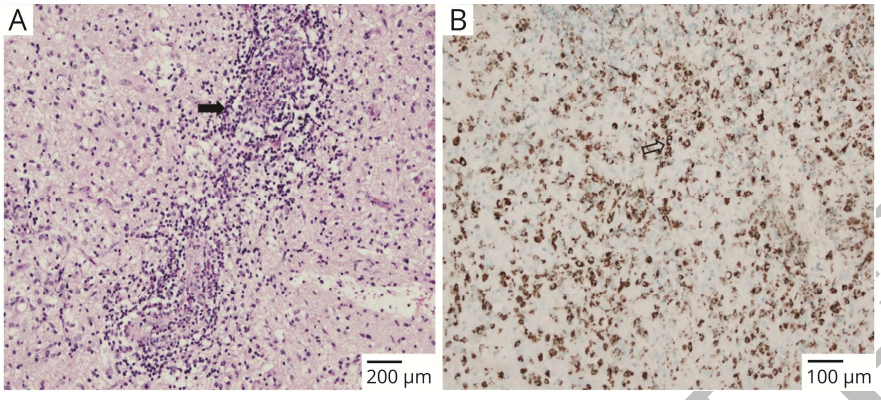


Figure 2. The pathology slide

H&E (A) showed necrosis of small blood vessels with perivascular infiltrates of lymphocytes.Anti-CD68 immunostain (B) demonstrating macrophages expression.



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