Published Ahead of Print on August 14, 2023 as 10.1212/WNL.0000000000207761

Neurology®
The most widely read and highly cited peer-reviewed neurology journal
The Official Journal of the American Academy of Neurology

AMERICAN ACADEMY OF NEUROLOGY®

Neurology Publish Ahead of Print
DOI: 10.1212/WNL.0000000000207761

Teaching Video NeuroImage: Dural Angioleiomyoma: Insights From Dynamic Imaging

Author(s):
Thomas Leclerc, MD[1,2]; Catherine Oppenheim, MD-PhD[1,2]; Arnault Tauziede-Espariat[2,3]; Hélène Charpentier, MD[4]; Johan Pallud[2,5]; Joseph Benzakoun, MD, PhD[1,2]

Corresponding Author:
Joseph Benzakoun, j.benzakoun@ghu-paris.fr

Affiliation Information for All Authors: 1. Radiology Department, GHU Paris Psychiatrie et Neurosciences, Site Sainte-Anne, F-75014 Paris, France; 2. Université Paris Cité, Institute of Psychiatry and Neuroscience of Paris (IPNP), INSERM U1266, F-75014 Paris, France; 3. Neuropathology Department, GHU Paris Psychiatrie et Neurosciences, Site Sainte-Anne, F-75014 Paris, France; 4. Radiology Department, CHU Besançon, 25000 Besançon, France; 5. Neurosurgery Department, GHU Paris Psychiatrie et Neurosciences, Site Sainte-Anne, F-75014 Paris, France

Equal Author Contribution:

Contributions:
Joseph Benzakoun: 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; Additional contributions (in addition to one or more of the above criteria)
Thomas Leclerc: 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; Additional contributions (in addition to one or more of the above criteria)
Catherine Oppenheim: 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; Additional contributions (in addition to one or more of the above criteria)
Arnault Tauziede-Espariat: Major role in the acquisition of data; Analysis or interpretation of data; Additional contributions (in addition to one or more of the above criteria)
Hélène Charpentier: Major role in the acquisition of data; Additional contributions (in addition to one or more of the above criteria)
Johan Pallud: Major role in the acquisition of data; Analysis or interpretation of data; Additional contributions (in addition to one or more of the above criteria)

Figure Count:
1

Table Count:
0

Search Terms:
[130] Volumetric MRI, [214] Primary brain tumor

Acknowledgment:

Study Funding:
The authors report no targeted funding.

Disclosure:
The authors report no relevant disclosures.

Preprint DOI:

Received Date:
2023-05-04

Accepted Date:
2023-06-26

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

Manuscript

A 47-year-old man with unremarkable medical history presented with mild dull occipital headaches for 7 months, without other neurologic changes. Structural MRI showed an extra-parenchymal, well-delineated left cerebellar lesion with partial post-gadolinium enhancement (Figure). Exploration with T1-weighted perfusion (Video) revealed a progressive, centrifugal enhancement with slow contrast filling, rapid near the center but slower toward outer edges, suggesting a benign mesenchymal tumor. Absence of mass effect and cerebellar symptoms further supported a slow-growing tumor. A surgical removal was performed. Neuropathologic examination revealed a well-circumscribed lesion with smooth muscle cells and vascular cavities, indicating dural angioleiomyoma (Figure). Dural angioleiomyoma is a rare benign tumor, with <80 cases reported in a recent literature review (1), related to soft tissue angioleiomyomas. Partial and flamelike enhancement arising from the tumor base and extending to its periphery appears to be the most typical imaging characteristic (2), and dynamic contrast-enhanced sequence may aid envisioning diagnosis preoperatively.

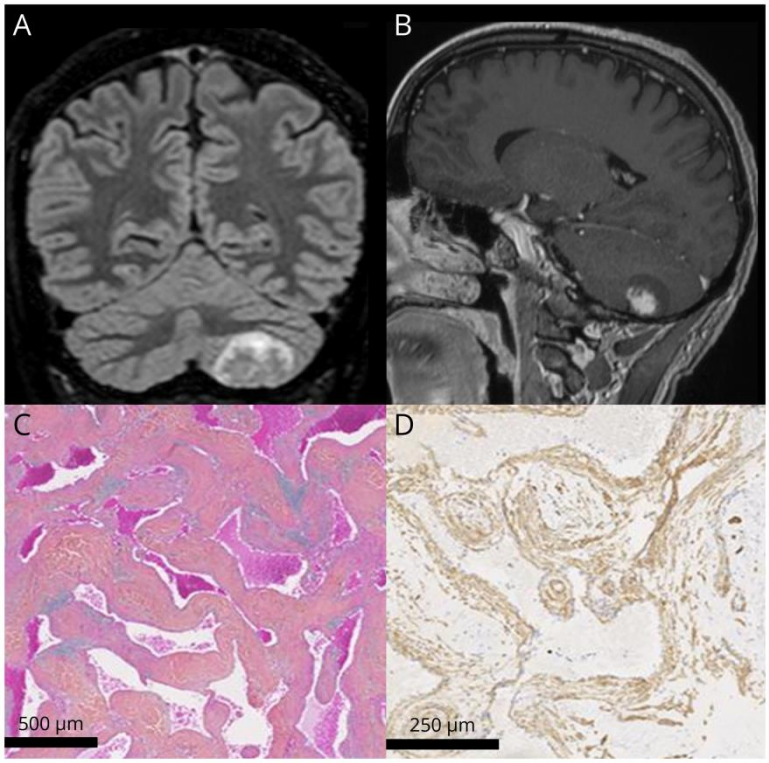
Legends

Video: Dynamic study

Dynamic contrast-enhanced T1-weighted coronal view of a left cerebellar mass, displaying centrifugal enhancement

Figure: MRI and neuropathology

MRI: coronal T2-FLAIR (A) and contrast-enhanced T1-weighted sagittal (B) views;
Neuropathology: anfractuous vascular cavities separated by muscular walls (Hematoxylin-Phloxin-Saffron) (C); Immunohistochemical analysis: smooth muscle cells labeled with anti-actin antibodies (D).



WNL-2023-001831_vid1 --- http://links.lww.com/WNL/D33

Bibliography :

1. Tauziède-Espariat A, Pierre T, Wassef M, et al. The dural angioleiomyoma harbors frequent GJA4 mutation and a distinct DNA methylation profile. *Acta Neuropathol Commun.* 2022;10:81.
2. Sun L, Zhu Y, Wang H, et al. Angioleiomyoma, a rare intracranial tumor: 3 case report and a literature review. *World J Surg Oncol*. 2014;12:216.

Teaching Video NeuroImage: Dural Angioleiomyoma: Insights From Dynamic Imaging

Thomas Leclerc, Catherine Oppenheim, Arnault Tauziede-Espariat, et al.

Neurology published online August 14, 2023
DOI 10.1212/WNL.0000000000207761