

Evidence Discussion (HD-22)

Cerebral Vasculitis

- Noninvasive neuroimaging modalities play a role in the diagnostic evaluation of central nervous vasculitis by providing supportive imaging findings and guiding biopsy.^{1,2} The preferred modality for the evaluation of central nervous system vasculitis is MRI, which provides superior soft-tissue resolution.¹ MRI brain is abnormal in > 95% of patients with CNS vasculitis.⁴ MRI brain shows infarcts in up to 50% of cases and white matter hyperintensities in 42% of cases.^{1,2}
- MRA head was found to be abnormal in 81% of patients with angiographic findings of vasculitis and normal in 100% of patients with a normal angiogram.¹
- CT Angiography is an alternative non-invasive modality that also provides visualization of blood vessels.^{1,2,4}
- FDG-PET/CT brain is not supported due to the high physiologic FDG uptake in the brain and limited resolution of the camera system.⁶ Atherosclerosis may also interfere with the FDG-PET interpretation.⁶

References

1. Expert Panel on Neurological Imaging, Ledbetter LN, Burns J, et al. ACR Appropriateness Criteria® Cerebrovascular Diseases-Aneurysm, Vascular Malformation, and Subarachnoid Hemorrhage. *J Am Coll Radiol*. 2021;18(11S):S283-S304. doi:10.1016/j.jacr.2021.08.012
2. Expert Panel on Neurologic Imaging:, Salmela MB, Mortazavi S, et al. ACR Appropriateness Criteria® Cerebrovascular Disease. *J Am Coll Radiol*. 2017;14(5S):S34-S61. doi:10.1016/j.jacr.2017.01.051
3. Soun JE, Song JW, Romero JM, Schaefer PW. Central Nervous System Vasculopathies. *Radiologic Clinics of North America*. 2019;57(6):1117-1131. doi:10.1016/j.rcl.2019.07.005
4. Wahed LA, Cho TA. Imaging of Central Nervous System Autoimmune, Paraneoplastic, and Neuro-rheumatologic Disorders. *Continuum (Minneapolis)*. 2023;29(1):255-291. doi:10.1212/CON.0000000000001244
5. Okazaki T, Shinagawa S, Mikage H. Vasculitis syndrome-diagnosis and therapy. *Journal of General and Family Medicine*. 2017;18(2):72-78. doi:10.1002/jgf2.4
6. Slart RHJA; Writing group; Reviewer group; FDG-PET/CT(A) imaging in large vessel vasculitis and polymyalgia rheumatica: joint procedural recommendation of the EANM, SNMMI, and the PET Interest Group (PIG), and endorsed by the ASNC. *Eur J Nucl Med Mol Imaging*. 2018;45(7):1250-1269. doi:10.1007/s00259-018-3973-8