

# A Suspected Case of Limbic-Predominant Age-Related TDP-43 Encephalopathy (LATE) in an Older Adult

Alphonso Smith, Ph.D., James E. Eaton III, M.D., & Richard R. Darby III, M.D.

Vanderbilt University Medical Center, Department of Neurology, Nashville, TN

## Objective

- Limbic-predominant age-related TDP-43 encephalopathy (LATE) is a common but underrecognized neuropathology that causes a progressive amnestic syndrome in older adults which mimics an Alzheimer's disease (AD) clinical profile.

## Method

- A 75-year-old female with a history of progressive cognitive impairment presented to a multidisciplinary neurology clinic and the neurocognitive screening during her neurological exam showed an amnestic memory profile.
- A laboratory work-up for medical causes for her cognitive impairment was negative. In contrast, her neuroimaging showed prominent hippocampal atrophy on MRI but a negative amyloid PET scan which raised concerns for LATE.
- Consequently, the patient was referred for a comprehensive neuropsychological evaluation.
- Testing battery included: *WAIS-4*, *WMS-4*, *HVLT-R*, *BVMT-R*, *BNT-2*, *Aphasia Screening Battery*, *WRAT4*, *Clock Drawing Test*, *FAS*, *Animal Naming*, *Trail Making Test*, *Stroop Color-Word Test*, *GDS*, and *GAI*.

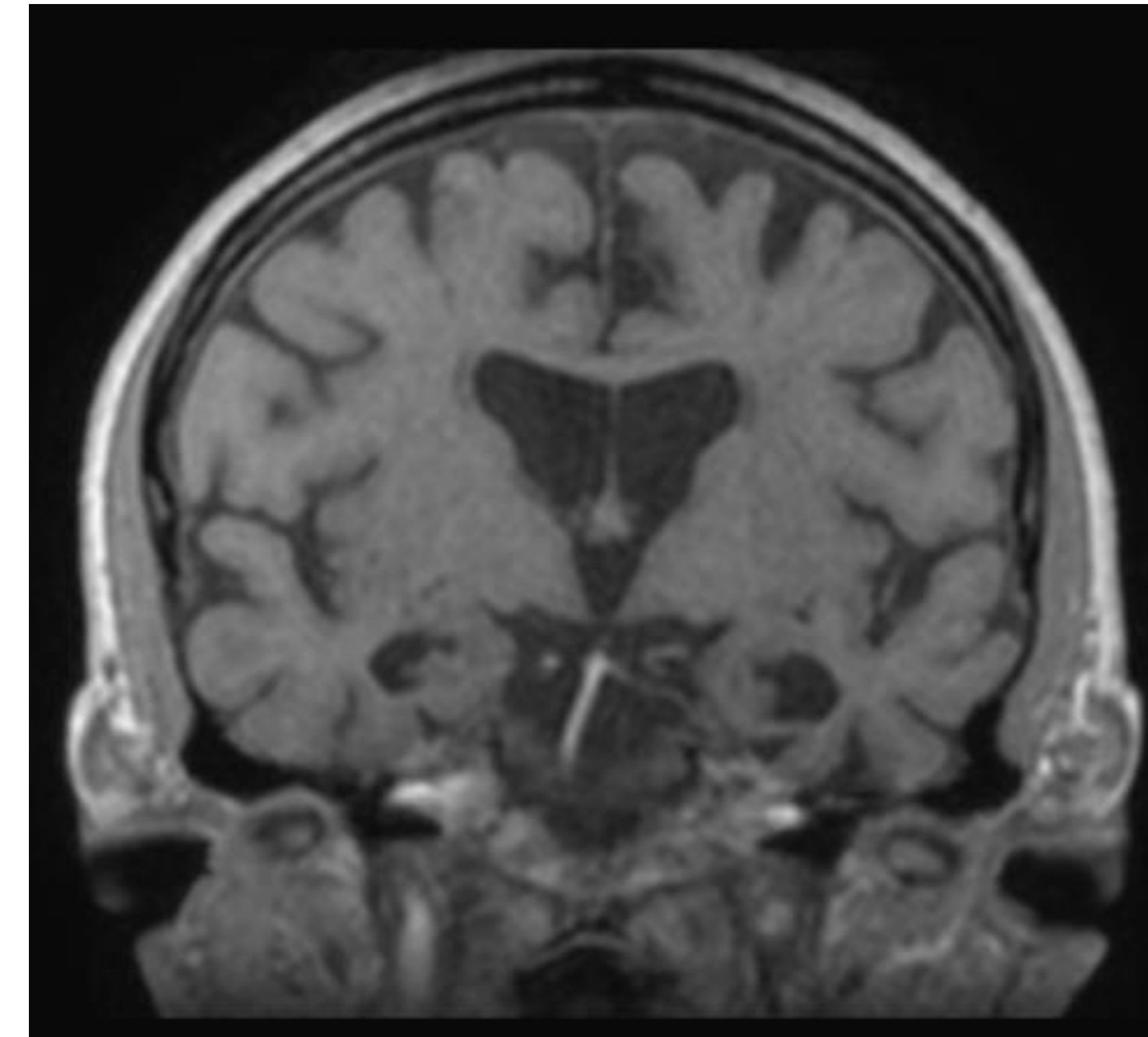
## Results

- Neuropsychological testing confirmed an amnestic mild dementia profile in the context of her other cognitive skills (e.g., attention, executive functioning, processing speed, word finding, and visuospatial abilities) being largely preserved.
- On self-report questionnaires, the patient denied having any significant symptoms of depression or anxiety which helped rule out psychiatric factors as possible contributors to her cognitive impairment.

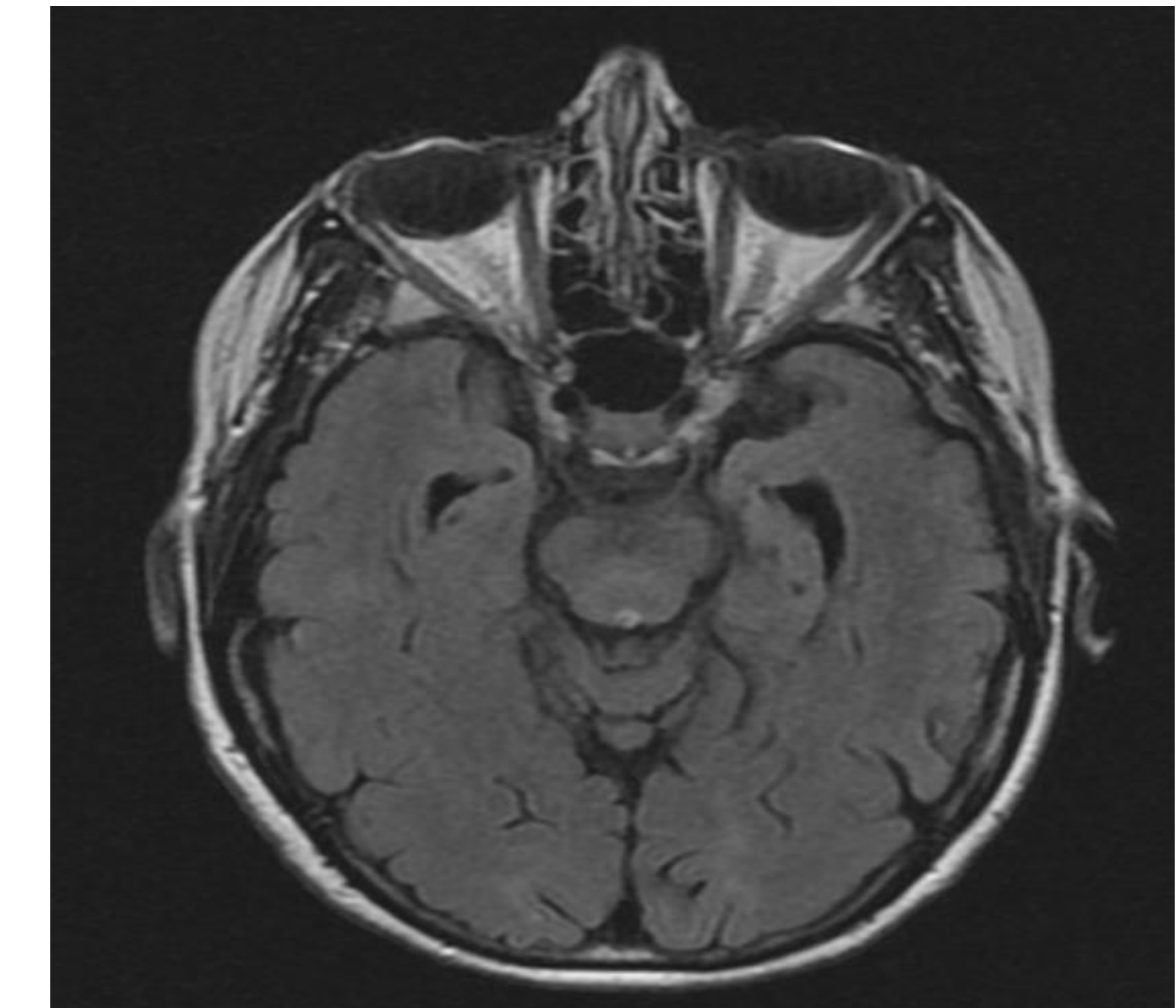
### Contact Information

alphonso.smith@vumc.org

## Select Images from MRI of Brain

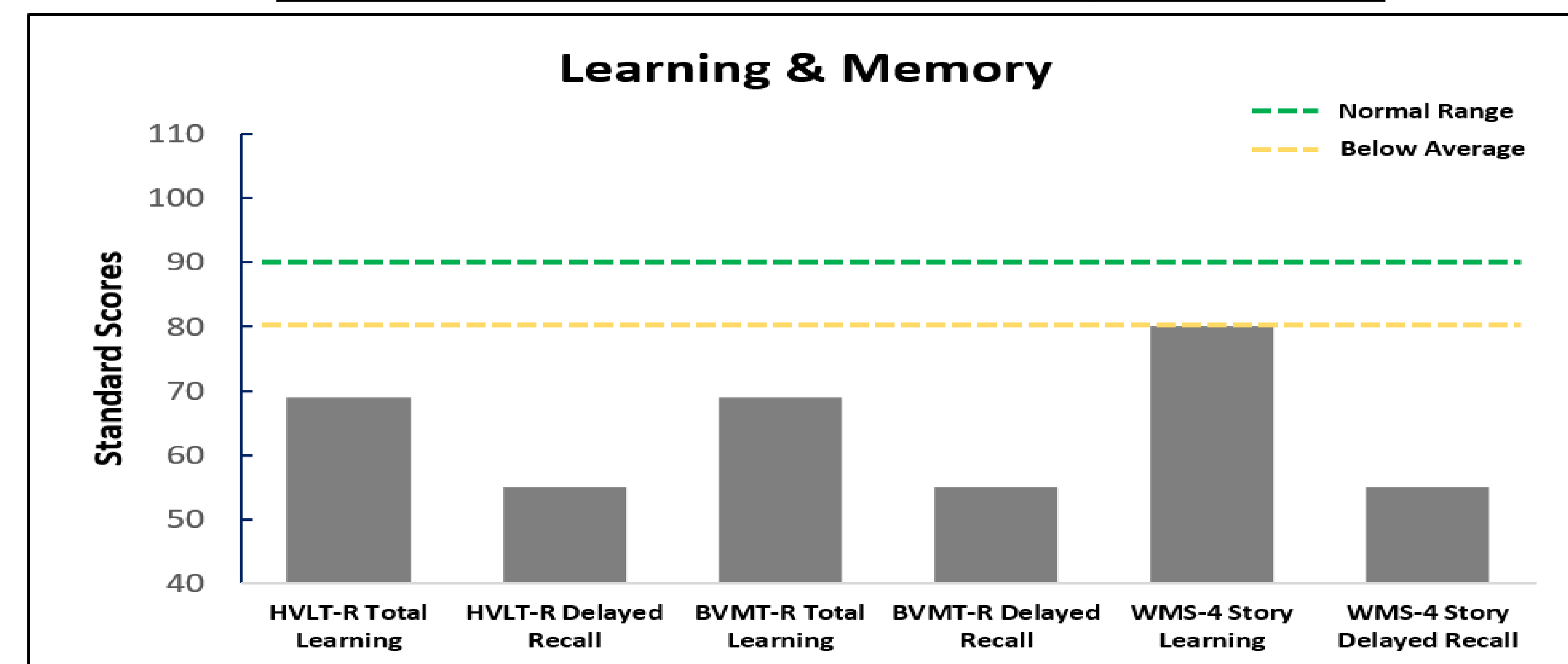


Left greater than right hippocampal atrophy on coronal view of T1-weighted image



Left greater than right hippocampal atrophy on axial view of T2/FLAIR image

## Select Tests from Neuropsychological Battery



Patient displayed poor learning and delayed recall on neuropsychological testing

## Conclusions

- LATE is described as causing a primarily amnestic neurocognitive profile with associated hippocampal atrophy and this was well demonstrated in our patient.
- While the diagnosis of LATE cannot be definitively made until autopsy, the absence of amyloid on the patient's PET scan highly suggests a non-AD pathology like LATE.
- A limitation of the evaluation is that tau biomarker tests were not performed, making primary age-related tauopathy (PART) another possible pathology or co-pathology.
- Overall, this case study illustrates the importance of multidisciplinary assessment to help facilitate differential diagnosis for neurodegenerative conditions associated with amnestic cognitive impairment, especially when a non-AD pathology is suspected.