

Alzheimer's Disease

Diagnosis

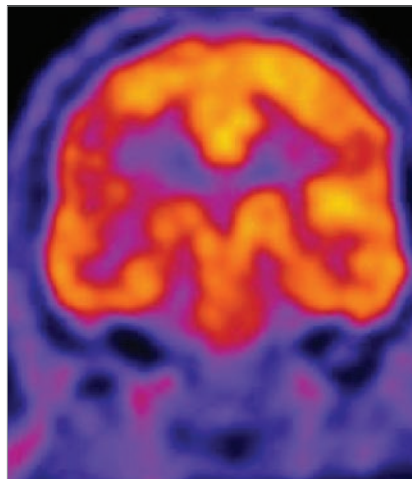
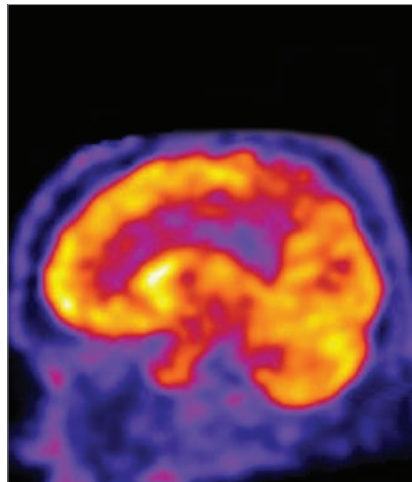
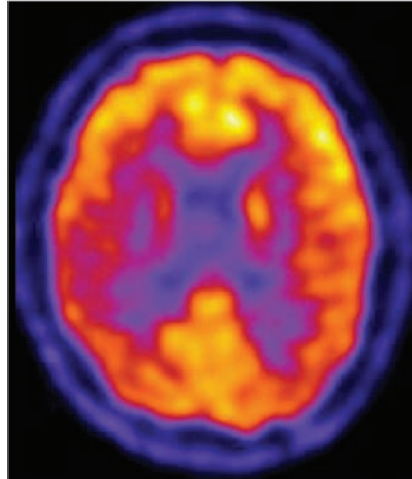
52-year-old male with a history of decreased memory over the past year. Patient reports feeling depressed and complains of intermittent transposing of letters, difficulty finding the right words, and occasional involuntary body jerking without loss of consciousness.

Test Results

- ▲ **Blood Work:** All normal, except elevated Cholesterol total: 228
- ▲ **Triglycerides:** 159: HDL 60 LDL 136
- ▲ **EEG:** Mildly abnormal EEG indicating diffuse cortical dysfunction. Mild diffuse slowing. No EEG evidence of paroxysmal activity or focal slowing.
- ▲ **MRI:** Finding in the right frontal lobe most consistent with developmental venous anomaly – stable since MRI done 8 months prior. No other abnormalities noted.
- ▲ **MRA** of the circle of Willis region normal.

Neuropsychological Report

Moderate to severe impairments in attention, visual processing, and left handed motor speed dexterity. Mild difficulties with verbal immediate recall, but ability to retain and recall was intact. Patient expresses distress about symptoms. Pattern not consistent with depression.



RECOMMENDATIONS

Both the neuropsychologist and the neurologist suggested a PET scan to aid in diagnosis.

PET Findings – Early Alzheimer's

Pattern of hypometabolism within the parietal lobes bilaterally, with right temporal lobe greater than the left temporal lobe, suggesting early changes of Alzheimer's Disease.

PET IMPACT ON PATIENT MANAGEMENT

Once neuropsychological testing determined the patient's symptoms were not consistent with depression, dementia became more likely. The PET scan suggested early Alzheimer's Disease, as opposed to depression-related or other types of dementia. The patient was put on Aricept to slow progression of disease, and will be followed with PET scan to evaluate future progression.

Fig. 1: PET scan of the brain showing early Alzheimer's pattern.

Alzheimer's Disease

Positron Emission Tomography in Evaluation of Dementia

*Silverman et al. UCLA
JAMA
November, 2001*

284 patients in this study:

The results for sensitivity and specificity are as follows.

Progressive dementia detected by PET:

- ▲ Sensitivity: 93% (191/206)
- ▲ Specificity: 76% (59/78)

PET identified patients with AD:

- ▲ Sensitivity: 94% (91/97)
- ▲ Specificity: 73% (30/41)

"The use of FDG PET for evaluation of patients presenting with cognitive symptoms of dementia permits sensitive identification of future decline associated with Alzheimer's Disease and other neurodegenerative disease. A negative PET scan indicated that pathologic progression of cognitive impairment during the mean 3-year follow-up was unlikely to occur."

One of the nation's leading providers of PET and PET/CT services, Integral PET is committed to delivering a superior level of patient care and service to physicians, and to advancing the science of PET through partnerships with leading medical and educational institutions.



The Standard of Care.