

Case of the Month—October 2004

PET for Early Diagnosis of Alzheimer's Disease

History

The patient is a 60-year-old male who has complained of memory loss, and his family noted that he was apathetic and at times socially inappropriate for the last twelve months. He has difficulty finding words and has gotten lost while driving.

Neurological examination revealed a Mini Mental Status Examination score of 27/30. An MRI of the brain showed diffuse cerebral atrophy more prominent in the bilateral frontal region. Clinical evaluation could not differentiate between early Alzheimer's Disease and Frontotemporal Dementia. An FDG PET study was requested to clarify the diagnosis.

PET Finding

The FDG PET brain study demonstrated bilateral symmetric decreased FDG uptake in parietal and temporal lobes (Figure 1). This is a typical pattern for Alzheimer's Disease (AD).

How Did PET Help?

The FDG PET brain scan helped to confirm the diagnosis of early Alzheimer's Disease. PET provided the patient and clinician with important information for assessing possible treatment options and planning for the future.

Discussion

Recent studies have highlighted the value of PET in Alzheimer's Disease as a diagnostic tool. It is also a prognostic tool used to identify early changes associated

with Alzheimer's, in contrast to other neurodegenerative dementias. Early detection of AD will allow physicians to employ existing and new therapeutic options in a timely fashion for the patient's maximum benefit¹.

In recognition of the important role that PET can play in the diagnosis and treatment of Alzheimer's Disease, on September 15, 2004, the Centers for Medicare and Medicaid (CMS) approved coverage of FDG PET scans for Alzheimer's Disease under conditions in which the diagnosis remains uncertain.

(1) Silverman, Daniel H.S., M.D., Ph.D., "Brain 18F-FDG PET in the Diagnosis of Neurodegenerative Dementias: Comparison with Perfusion SPECT and with Clinical Evaluations Lacking Nuclear Imaging," *Journal of Nuclear Medicine*, Vol. 45, No. 4, April 2004, pp. 594-607.

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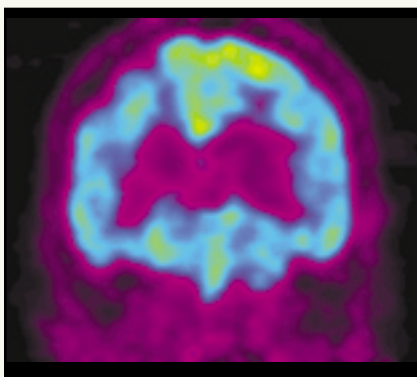


Figure 1—Coronal

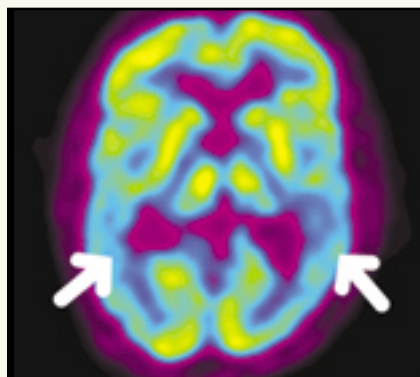


Figure 1—Transaxial

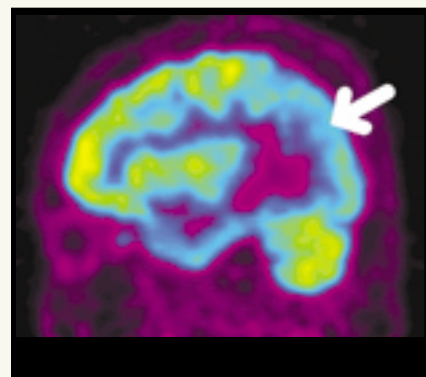


Figure 1—Sagittal

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