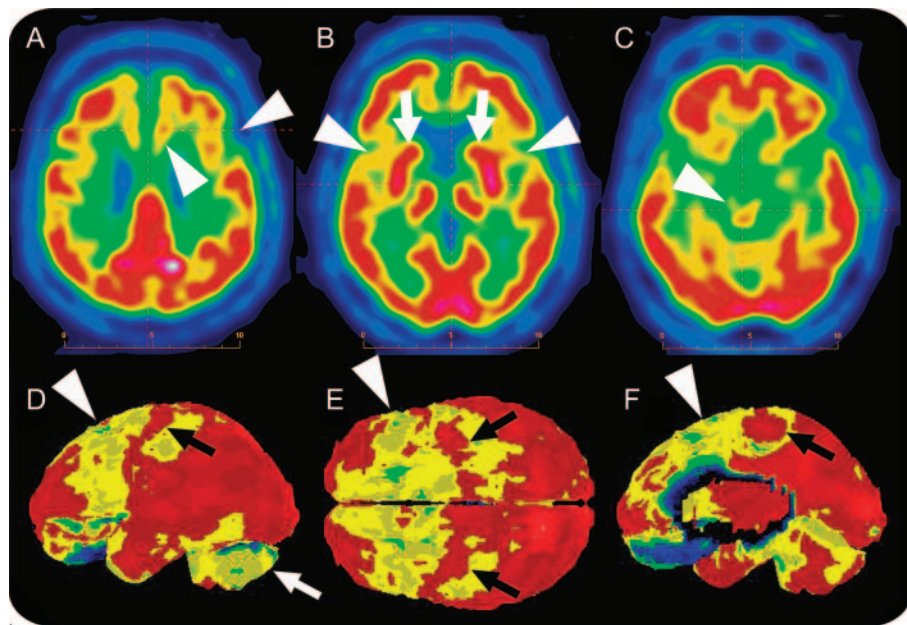


Teaching NeuroImages: FDG-PET in progressive supranuclear palsy

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Figure PET



Axial FDG-PET images show marked bilateral hypometabolism in frontal cortex (A, arrowheads), especially paramedian, insular cortex (B, arrowheads), the head of the caudate nucleus (B, arrows), and the brainstem (C, arrowheads). Three-dimensional FDG-PET reconstruction images (D, lateral view; F, superior view; E, medial view) confirm hypometabolism in the lateral and paramedian frontal cortex (arrowheads) respecting the primary motor area (black arrows), and show decreased metabolism in the cerebellum as well (white arrow).

A 74-year-old man presented with falls, dysphagia, and personality change.

Examination showed axial parkinsonism (without response to levodopa), low pitched dysarthria, supranuclear vertical gaze palsy, decreased blinking, square-wave jerks, primitive reflexes, apathy, and decreased verbal fluency. Brain MRI showed dorsal midbrain and frontal paramedian atrophy. Probable progressive supranuclear palsy (PSP) was diagnosed.

¹⁸Fluorodeoxyglucose (FDG)-PET showed bilateral hypometabolism in the lateral and midline frontal cortex, insular cortex, head of caudate nucleus, brainstem, and cerebellum (figure), consistent with described FDG-PET findings in PSP.^{1,2} Although not required

for diagnosis of probable PSP, FDG-PET may help differentiate parkinsonian syndromes. In Parkinson disease, FDG-PET most frequently shows hypermetabolism of the dorsolateral putamen. Cerebellar hypometabolism has been reported in patients with PSP but is not specific. Predominant cerebellar together with bilateral putamen hypometabolism favors multiple system atrophy.²

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Disclosure: The authors report no disclosures.

Neurology[®]

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Neurology 2010;74:e60

DOI 10.1212/WNL.0b013e3181d7d871

This information is current as of April 5, 2010

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