

F-18 FDG PET/CT image of alzheimer like primary progressive aphasia

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Abstract

Sixty-two years old male patients with progressive impairment in language and cognitive functions and bradikinesia and rigidity in last year presented with anteromedial temporal and perisylvian atrophy. PET images showed left dominant bilateral diffuse serebral hipometabolism with preservation of only occipital lobes indicating Alzheimer disease like primary progressive aphasia.

Case report

Sixty-two years old male patient presented with impairment of language and cognitive functions additionally bradikinesia and rigidity for one year. MR imaging revealed left anteromedial temporal and perisylvian atrophy. F-18 Fluorodeoxyglucose (FDG) positron emission tomography (PET) 3D metabolic image of the brain and quantification of the results indicated bilateral diffuse cerebral hypometabolism especially in the left lobe with relative preservation of the occipital lobes (Figure 1). Left frontotemporoparietal regions were significantly hypometabolic consisted with the patients clinical findings.

Primary progressive aphasia (PPA) is characterized by impairment of language function and considered as a subgroup of frontotemporal dementia's [1-3]. Other cognitive functions may be preserved before the final stage of the disease. Radionuclide imaging methods like Tc-99m hexamethylenepropylene amin oxime (HMPAO) brain perfusion single photon emission tomography (SPECT) and F-18 FDG PET/CT

are suitable biomarkers for correct identification of the involved brain regions through the disease course. Additionally magnetic resonance imaging (MRI) might show atrophy of the impaired brain area. The disease is usually presented by a progressive left serebral hipometabolism including temporal parts of language network like Wernicke's area and later in the disease course including inferior parietal cortex [1].

F-18 FDG PET have gained important place in diagnosis of PPA in recent years [4,5]. In first presentation the PET images show reduced glucose metabolism in left anterior part of temporal region then left frontotemporal region and temporoparietal network [2]. Although PPA is considered in family of frontotemporal dementias there are significant overlaps in the later disease course with involvement of parietal region. There is also a case report of a patient with PET/MR images indicating the decrease in metabolic activity in left perisylvian and temporal girus [6]. However this is the first case as far as we know in the literature including bilateral brain regions. This may be a consequence of severe and fast progressive disease course and/or significant overlap of the patient to Alzheimer disease group.

Disclosure

No grants or financial support exists. There is no conflicts of interest.

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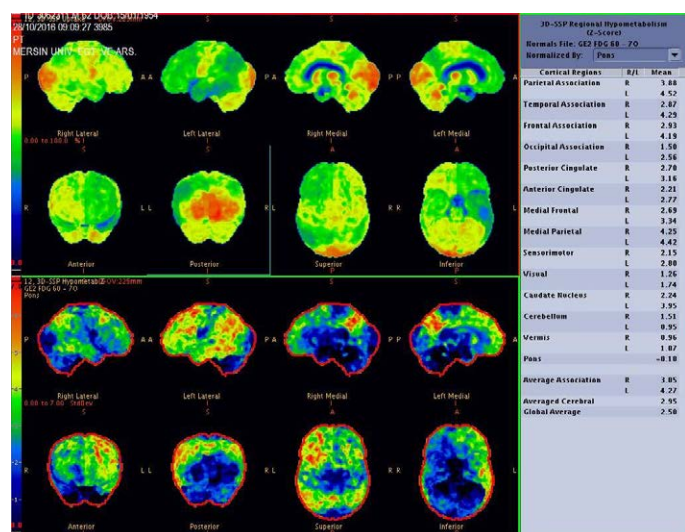


Figure 1. 3D demonstration of brain FDG PET image including quantification parameters in left side.

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Key words: primary progressive aphasia, Alzheimer disease, positron emission tomography, fluorodeoxyglucose

Received: May 16, 2017; **Accepted:** May 29, 2017; **Published:** May 31, 2017

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