Interest of Eye Movement Analysis in Parkinsonian Syndromes

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Eye movement examination is useful in the differential diagnosis of parkinsonian syndromes, mainly to differentiate Parkinson’s disease from progressive supranuclear palsy (PSP) or corticobasal degeneration (CBD).

To evaluate the contribution of oculomotor function to the diagnosis of patients with clinical suspicion of PSP or CBD, eye movements were recorded in 57 patients, including 28 patients with suspicion of PSP, 10 with suspicion of CBD, and 19 with an undetermined parkinsonian syndrome. Horizontal and vertical saccades, smooth pursuit and antisaccade task were recorded by video-oculography (eyeBrain system). Results from eye movement analysis were compared to the final clinical diagnosis.

In 28 patients (49%), a symptomatic profile linked to PSP or CBD was obtained from oculomotor abnormalities. In 3 patients, we found supranuclear palsy at an early stage, without specific arguments for PSP. For 26 patients, oculomotricity was normal or non contributory.

Oculomotor abnormalities found in our PSP or CBD patients were similar to those describe in literature. Eye movement recording appears particularly helpful to guide the diagnosis of an atypical parkinsonian syndrome, or to rectify diagnosis between a border form of PSP or CBD.

Eye movement recording is a non-invasive tool that can provide early information for the diagnosis of neurodegenerative disorders.