Abstract

This dissertation is a collection of a total of seven publications that deal with eye movement disorders in patients with basal ganglia disorders.

We obtained normative data for videooculography in healthy individuals. We have described the eye movement evolution during a human life such as the increase of latency, movements become hypometric and antisaccadic error rate increases. We have shown that sex and education do not affect the eye movements. Our study highlighted the asymmetry in the eye movement performance.

As the first, we studied the vergence in patients with Parkinson's disease (PN) using videooculography (VOG). We devised and defined a paradigm for this examination and saw that in patients with PN there is a prolonged latency and hypometry of divergence.

In patients with ephedrone induced parkinsonism (EP), we were the first who examined eye movements and found that it was possible to identify between this toxic Parkinson's syndrome and PN on the basis of a videooculography. In EP patients, we described velocity decsrease and hypometry in horizontal saccades, prolonged latency in horizontal saccades, and higher error rate in the antisacadic task.

Behavioral disorder in REM sleep (RBD) as a prodromal stage of PN leads to impaired eye movement. In the evaluation with PN patients, we found similar trends in RBD as in PN. The main result of the work is a higher error rate for antisacadic movements which correlated with neuropsychological tests. It is clear that the prefrontal cortex is significantly involved in the pathophysiology of RBD.

In this dissertation, we have described abnormalities in eye movements in a wide range of patients with basal ganglia disorders. We contributed to the knowledge of the pathophysiology of these diseases and to the enrichment of the method of VOG which we confirmed as an established method for research and clinical purposes.