NEUROPSYCHOLOGICAL CONSEQUENCES OF THE LESION OF SUBTHALAMIC NUCLEUS IN PARKINSON’S DISEASE

L. Alvarez

Movement Disorders Clinic, CIREN, Havana, Cuba

Surgery for PD is associated with cognitive and emotional changes. Bilateral Deep Brain Stimulation of Subthalamic Nucleus (STN DBS) may result in diminished verbal fluency while overall cognitive function, memory, and attention have remained insignificantly affected. Depression and anxiety have all shown improvement after STN DBS but apathy can be worsened.

There is scarce literature with regards to the effects of STN lesioning on cognitive performance. No major cognitive defect were observed in PD patients treated with unilateral subthalamotomy except for reduced verbal fluency (Mc Carter et al 2001, Alvarez et al 2009) and in ten patients undergoing bilateral procedure we can not demonstrated any deterioration in cognitive assessments but neuropsychiatric behavior changed significantly after surgery. (Alvarez et al 2005).

In order to better understand the NPS consequences of the STN lesion we have been conducted a neuropsychological assessment in patients with PD submitted to unilateral (46) or bilateral subthalamotomy (33) and a more sophisticated battery to assess frontal functions in a subset of 14 bilateral and 22 unilateral operated patients.

The present results expanding and confirm our previous findings showing any neuropsychological sequelae after STN lesion and suggest a significant correlations between specific motor, cognitive and behavioral function supporting the idea of a link between them.

In conclusion our results suggest that STN surgery improves not only PD patients' motor features but also results in no cognitive or behavioural permanent deficits but some changes in selection under conflict and inhibitory functions could be observed after STN lesion.