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O-FUN-29 - Brain Shift during Deep Brain Stimulation Surgery: sequence of electrode placement and chronic stimulation parameters - a single-centre experience

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Resumen

Objectives: Intraoperative brain shift preventive measures are used during deep brain stimulation (DBS) surgery. Our aim is to assess its effectiveness through the study of the first electrode laterality related brain shift in electrode placement during DBS surgery and chronic pole stimulation in a cohort of patients with Parkinson Disease (PD) and Dystonia (DYST).

Material and methods: Retrospective cohort study of PD and DYST patients admitted for DBS surgery (January 2013-January 2015) in a single centre.

Results: 36 patients were included (28 males, 8 females; 26 DP, 10 DIST), 6 were excluded due to missing data. Left electrode was the first to be placed in 52.8% (n = 19) of the cases. Time difference between the first and second electrode placement was 132.5 ± 4.6 minutes (no difference between DP and DYST). Central electrode was placed in 66.7% (n = 16) – left side – and 52.2% (n = 12) – right side – of the cases. The second pole (counting from the extremity) was the most frequent in chronic stimulation (left - 44.4%, n = 8; right - 52.6%, n = 10). No variation of chosen electrode or chronic stimulated pole were seen contralateral to the first placed electrode (p value > 0.05) - unadjusted and adjusted analysis (interinsular distance, AC-PC, corpus callosum vertical distance).

Conclusions: No effect of first electrode laterality was seen in the contralateral electrode placement or chronic pole stimulated in this series. This supports the benefit of the intraoperative measures to reduce the brain shift between both electrode placements to maintain the accuracy of the second electrode implant.

Key words: Deep Brain Stimulation. Brain Shift. Parkinson Disease. Dystonia.