

The role of microelectrode recording during Deep Brain Stimulation of Subthalamic Nucleus in patients with Parkinson's disease

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Abstract

Background: Deep brain stimulation of the subthalamic nucleus improves symptoms of Parkinson's disease. However, the clinical outcome depends on the accurate location of the final electrode. Multiple microelectrode recording is believed to improve the precision, although it prolongs the duration of surgery. We hypothesize that patients implanted in the central trajectory have the same outcome as patients implanted decentrally.

Material and methods: This study was carried out in UKSH Kiel and included 556 patients treated from 1999 until 2018 with bilateral STN-DBS (safety population). Pre- and postoperative efficacy data were available from 400 patients. The outcome parameter was the stimulation-induced improvement of the UPDRS for PD. We compared patients with both electrodes centrally to that bi-decentrally. The rate of surgical complications was determined with postoperative imaging.

Results: A decentral tract was chosen in 41% of the electrodes (central, n = 471 electrodes; decentral, n = 329). Motor improvement was not different between patients with electrodes implanted bicentral ($44.39\% \pm 22.71$) or decentral ($43.22\% \pm 17$) trajectory bilaterally ($p = 0.5571$). Similar results were obtained for the hemi body score and subscores for akinesia, tremor, rigidity, postural instability and gait disorder. The overall bleeding rate was 2.78% and not dependent on the number of penetrations.

Conclusions: Outcomes between the groups did not differ and, therefore, the use of mMER is likely to improve the outcome. Comparison with other cohorts does not disclose a higher rate of bleeding complications in this cohort with mMER.

Key words: STN, DBS, mMER, outcome, complications.

Post-traumatic stress disorder in epilepsy: clinical case

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Abstract

Background: Epilepsy has many faces and affects the person at the psychic-soma level. The function of doctors is not only to cure the disease, but also to take into account all the surrounding factors (social, family, school) to facilitate the harmonious development of the sense of identity.

Material and methods: Patient T was sent to the National Center for Epileptology at the age of 15 with an established diagnosis of epilepsy dating back 4 years. The evolution of seizures took place in two stages with marked decrease in their frequency under the effect of treatment. The patient benefited from psychoanalytic psychotherapy sessions with a frequency of once a week for 6 months.

Results: Emotional and psychological trauma was addressed only during psychotherapy and the result was a clear improvement in the condition. Subsequently, spontaneous seizures were rarer, but emotionally triggered seizures occurred; they gradually became less common during psychotherapy.

Conclusions: The psychotherapeutic approach to epilepsy in this case demonstrates a close connection with the patient's life events, but also with his history and subjective position. In conclusion, epilepsy, like other pathologies, is at the border between neurology and psychopathology.

Key words: epileptic seizures, psychic trauma, psychotherapy.