

## Liste-35

### **CHRONIC MOTOR CORTEX STIMULATION IN THE TREATMENT OF CENTRAL AND NEUROPATHIC PAIN. CORRELATIONS BETWEEN CLINICAL, ELECTROPHYSIOLOGICAL AND ANATOMICAL DATAS.**

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Thirty seven patients with refractory central and neuropathic pain were treated by chronic stimulation of the motor cortex between May 1993 and March 1998. The mean follow-up was 27.3 months. The first 25 patients were operated according to the technique described by Tsubokawa. The last 18 cases (5 reoperations and 13 new cases) were operated by a technique including localization by superficial CT reconstruction of the central region and neuronavigator guidance. The position of the central sulcus was confirmed by the use of intraoperative somesthetic evoked potentials. The somatotopic arrangement of the motor cortex was established by studying the motor responses after stimulation of the motor cortex through the dura. Twelve of the 15 patients with central pain (80 %) and 12 of the 14 patients with neuropathic facial pain were improved (85.7%). To quantify the effectiveness of this technique, the 5 last patients were evaluated using a detailed pain questionnaire (one-dimensional scale, visual analogue scale, McGill pain questionnaire, Wisconsin pain questionnaire, medication quantification scale). All patients were improved 4 months after the operation. All scores improved by more than 44% (44-52,  $p < 0,02$ ). During the third month, the stimulator was switched off during 2 weeks as decided by randomization. Pain dramatically increased in all cases by more than 85% (85-151,  $p < 0,04$ ).

None of the patients developed epileptic seizures. The position of the stimulation poles effective on pain was in line with the somatotopic representation of the motor cortex. The neuronavigator localization and guidance technique appeared to be more effective than the classical technique. It also allowed establishment of reliable correlations between electrophysiological-clinical and anatomical data which may be used to improve the clinical results and possibly to extend the indications of this technique.