

13th International Conference on

NEUROLOGY AND NEUROSURGERY

June 19-21, 2017 Paris, France

The importance of somatotopy to achieve clinical benefit in motor cortex stimulation for pain relief**Afif AFIF, Luis Garcia-Larrea and Patrick Mertens**¹Pierre Wertheimer Hospital, France²Hospices Civils de Lyon, France³Lyon 1 University, France

Introduction: The aim of this study was to search the relationship between the anatomical location and the eventual analgesic effect of each contact.

Materials & Methods: 22 patients (14 men and 8 women) suffering from central and/or pe-ripheral neuropathic pain were implanted with stimulation of the precentral cortex. The im-plantation of the electrodes was performed using intraoperative: Anatomical identification by neuronavigation with 3D MRI; somesthetic evoked potentials monitoring to check the poten-tial reverse over the central sulcus; electrical stimulations through the dura to identify the mo-tor responses and its somatotopy. In order to locate postoperatively the electrodes, a 3D-CT was performed in each case and fused with the preoperative MRI. The clinical analgesic ef-fects of cortical stimulation were collected on a regular basis (VAS reduction >50%, drugs consumption). Data were analyzed to search a correlation between the anatomical position of contacts and analgesic effects.

Results: Post implantation analgesic effects were obtained in 18 (81.81%) patients out of 22. The analgesic effect was companied with reduction of the drugs consumption in 15 patients (68.18%). The post-operative 3D CT analysis shows a correspondence between the effective contacts localization and the motor cerebral cortex somatotopy in the patients with post-operative good analgesic effects. No correspondence was found between the contacts locali-zation and the motor cerebral cortex somatotopy in the four patients with no analgesic effects. In three out of these four patients, analgesic effects were obtained after a new surgery allow-ing a replacement of the electrode position over the motor cortex somatotopy corresponding to the painful area.

Conclusion: This study shows the correlation between position of the contact over the pre-central cortex and the analgesia obtained when the somatotopy of the stimulated cortex corre-pond to the painful area.

afif_acc@hotmail.com

Notes: