MOTOR CORTEX STIMULATION FOR NEUROPATHIC FACIAL PAIN: TOWARD RESTORATION OF FACIAL SENSORY LOSS?

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Aims: To report two patients treated with Motor Cortex Stimulation (MCS) for neuropathic facial pain developing restoration of facial sensory loss. To discuss about restoration mechanisms.

Introduction: The MCS is a technique well known in treating facial neuropathic pain after surgery for trigeminal neuralgia. Very rare is the restoration of sensory loss in the painful facial area reported in only four patients.

Clinical Material and Methods: Two female patients, median age 36 years, suffering from drug resistant neuropathic pain developing after percutaneous coagulative procedures performed for trigeminal neuralgia underwent motor cortex stimulation. The patients reported tactile sensory loss in the painful area corresponding to V2 trigeminal root. The procedure was carried out by implant of paddle with 32 poles on motor cortex with somatotopy of painful facial area using neuronavigation and intraoperative neurophysiology (phase reversal N20). After one month of MCS one patient recovered almost 60% while the second reported an improvement of 50% of the tactile sensory loss; all patients had decrease of the pain of 40%. The loss recovery continues after 8 and 12 months, yet the second patient with cyclic stimulation current output ON superior to 1 hour developed allodynia in the painful area. This allodynia improves with cyclic stimulation (2 hours OUT, 20 minutes ON). The pain control is maintained.

Results and conclusions: The loss recovery continues after 8 and 12 months, yet the second patient with cyclic stimulation current output ON superior to 1 hour developed allodynia in the painful area. This allodynia improves with cyclic stimulation (2 hours OUT, 20 minutes ON). The pain control is maintained in all patients. The mechanisms leading to sensory recovery remain difficult to explain. MCS may have helped plasticity and reorganization of the sensory cortex. The central mechanisms favoring pain could have been reversed by MCS, leading to the sensory restoration.