

ELECTRO STIMULATION OF THE TRIGEMINAL GANGLION (TGES) IN PATIENTS WITH TRIGEMINOPATHIC PAIN AFTER (IATROGENIC) LESION OF THE TRIGEMINAL NERVE: RESULTS FROM OVER 25 YEARS OF EXPERIENCE

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Objective: Patients with trigeminopathic pain due to a (iatrogenic) lesion of the trigeminal nerve typically suffer from a constant burning pain sensation along one or more trigeminal branches (partial deafferentation pain).

Therapeutic options, both (neuro-) surgical (decompressive, destructive) and conservative, are very limited and outcome usually is poor. For more than 25 years, electro stimulation of the trigeminal ganglion (TGES) has been the primary neurosurgical treatment option in our institution in these patients.

Methods: The technique of TGES using the instruments and setup also used for the thermo lesion in trigeminal neuralgia was published for the first time by Steude in 1978: After percutaneous puncture (16 gage needle) of the oval foramen, a monopolar electrode (diameter 0.9 mm, custom-made, Medtronic) is placed in the postganglionic trigeminal nerve. This procedure is followed by a 3-day-test-phase using an external pulse-generator. If testing is successful, a permanent electrode/pulse generator-system (IPG) is implanted (Itrel III, Medtronic). To investigate the influence of TGES on cerebral pain-modulation, a PET-activation study including 10 patients after successful implantation was performed.

Results: Between May 1978 and October 2004, a test-stimulation was performed in 235 patients with trigeminopathic pain (73% iatrogenic, 12% post-traumatic, 10% post-herpetic, 5 % of unknown origin). There was a good to excellent analgesic effect in 122 patients (52%). An IPG was permanently implanted in 119 patients (50.6%). There was no surgery or treatment related morbidity or mortality. TGES-induced analgesia was persistent in long term-follow-up in all patients. The PET-study revealed a direct impact of TGES on cerebral pain-modulation pathways.

Conclusion: TGES is an effective, minimal invasive and reversible treatment option in selected patients with trigeminopathic pain and should therefore always be considered in these patients.