

RESULTS: Mean nerve fiber diameter in the central region of the regenerated nerve was not significantly different between AG and Nerbridge™ rats ($5.39 \pm 2.42 \mu\text{m}$ vs. $4.88 \pm 1.44 \mu\text{m}$). However, myelin width differed significantly between both groups ($0.82 \pm 0.45 \mu\text{m}$ vs. $0.45 \pm 0.12 \mu\text{m}$). Also, AG rats showed significantly greater improvement in g-ratio, an index of nerve maturation, ($0.70 \pm 0.12 \text{mm}$ vs. $0.82 \pm 0.04 \text{mm}$).

CONCLUSION: This study demonstrates the utility of Nerbridge™ for facial nerve reconstruction following nerve injury. However, when used alone, the capacity of Nerbridge™ to promote nerve regeneration was inferior to that of AG. Therefore, future research is needed to investigate the use of Nerbridge™ in conjunction with stem cell and growth factor delivery systems to achieve effectiveness comparable to that of AG.

Treatment of Asymmetries and Sequelae of Facial Paralysis by Using Botulinum Toxin

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INTRODUCTION: Facial paralysis (FP) affects the social life of patients as a result of dynamic and static asymmetries.¹ The aim of this study is to evaluate the effect of Botulinum Toxin-A (BTX-A) treatment for facial asymmetries and its long-term sequelae.

METHODS: Sixteen patients with unilateral FP who treated with BTX-A were included in this study. Before injection, patient's medical records were reviewed for age, sex, etiology and previous treatment. BTX-A was made for the overactive muscle group on the non-paralyzed side (nps) in all patients; the oculo-oral synkinesis, periorcular spasm and mental spasm with dimple on the paralyzed side (ps) in three, two and two patients, respectively. Each injected dose was noted. Synkinesis and facial expressions during resting and voluntary movement of the patients were evaluated with Sunnybrook Facial Grading

System (SFGS)² and recorded with digital imagings before and 1,3,6 months after the BTX-A injection. Additional doses were given to 5 patients whose asymmetries appeared slightly at 18 weeks in the last two sessions. Visual Analogue Scale (VAS) was used for evaluating of patient satisfaction who were given additional doses or not at third and sixth month.

RESULTS: Ten of the patients were men, six women. Ages of them ranged from 12 to 44 years (mean 27,1). The most common etiology was trauma. In total, 56 sessions of injections were made into 16 patients and ten of them was additional doses. The injected doses were between form 16 to 44IU (mean 28IU) on NPS, 4 to 16IU (mean 7IU) on PS. Additional doses were one-third of the current doses. After BTX-A injection, there was a significant improvement of asymmetries and sequelae in both SFGS and digital imaging during the first 3 months. While this improvement and STSG scores nearly returned to pre-injection values at six months in patients without additional doses, continued in patients with additional doses. Patient satisfaction was higher in patients with additional doses at the sixth months according to VAS.

CONCLUSION: The purpose of the unilateral FP is to reduce spasms and synkinesis on PS and muscular activity on NPS and to equalize each other to obtain facial symmetry at rest and during facial expressions.^{3,4} In this study, asymmetry and sequelae of facial paralysis were treated and this symmetry was maintained with an additional doses.

Reference Citations:

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