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Introduction and Objectives

Delayed facial palsy (DFP) is a common complication, appearing ≥ 3 days after neurosurgical intervention. Etiology and pathogenesis of this complication are not fully understood. Glucocorticoids (GC) are used for the treatment of delayed facial palsy. However, in patients with contraindications for GC use other treatment modalities are needed. This study evaluated the efficacy of botulinum toxin type A (BTA) in patients with DFP developing after vestibular schwannoma resection (VSR).

Methods

The study included 33 patients with DFP, which developed ≥ 72 hours after VSR. Group I consisted of 18 patients with contraindications for the use of GC, receiving BTA injections on the intact side to decrease elevated muscle tone and provide relative facial symmetry (40-50 IU, 10-15 points of injection). Group II consisted of 15 patients who received prednisolone 1 mg/kg per day (5-7 days). House-Brackmann scale was used for the assessment of facial nerve palsy severity. Study period was 3 months.

Results

DFP typically developed on day 11-15 after surgery - in 44.4% and 46.7% of patients in groups I and II; less commonly on day 6-10 - in 33.3% and 33.3% and on day 3-5 - in 22.3% and 20.0% patients in groups I and II (fig.1).

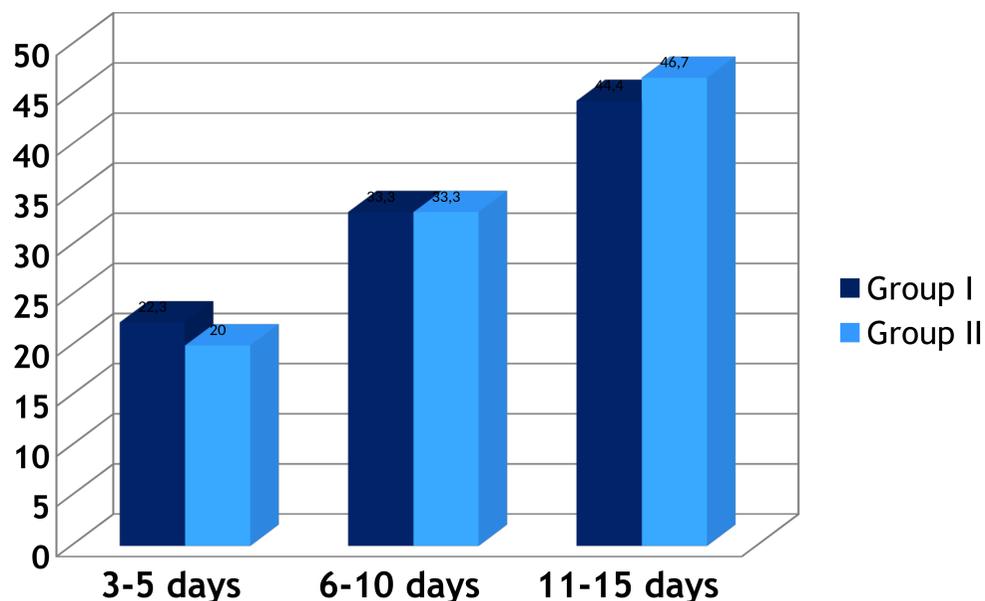


Figure 1. Time to development of mimic muscle palsy after surgical treatment (days)

Before treatment a mild facial nerve dysfunction was observed in 50.0% of patients in group I and 53.3% of patients in group II, moderate dysfunction - in 33.3% and 33.3% and moderate to severe dysfunction in 16.7% and 13.4% of patients in groups I and II.

After 3 months of treatment complete recovery of facial nerve function was observed in 83.3% and 93.3% of patients in groups I and II. Mild facial nerve dysfunction remained in 11.1% and 6.7% of patients in groups I and II, and moderate facial nerve dysfunction - in 5.6% of patients in group I (tab.1).

Conclusions

BTA injections may be recommended for the treatment of patients with DFP to attenuate facial asymmetry and to improve functional recovery.

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Table 1. Changes of facial symmetry score on House-Brackmann scale

House-Brackmann scale score	Group I			Group II		
	Baseline	1 month post-treatment	3 months post-treatment	Baseline	1 month post-treatment	3 months post-treatment
Grade 1	-	12 (66,7%)	15 (83,3%)	-	9 (60,0%)	14 (93,3%)
Grade 2	9 (50,0%)	5 (27,8%)	2 (11,1%)	8 (53,3%)	5 (33,3%)	1 (6,7%)
Grade 3	6 (33,3%)	1 (5,5%)	1 (5,6%)	5 (33,3%)	1 (6,7%)	-
Grade 4	3 (16,7%)	-	-	2 (13,4%)	-	-
Mean \pm SD	3,34 \pm 1,18	1,19 \pm 0,73*	1,06 \pm 0,57**	3,29 \pm 1,39	1,35 \pm 1,04*	1,13 \pm 0,42**

*- $p < 0.05$ - statistically significant difference between baseline and 1 month post-treatment;

** - $p < 0.05$ - statistically significant difference between baseline and 3 month post-treatment.