Comparative Advantages and Shortcomings of Corticosteroids in Comparison with Xylocaine-based Perineural Blocks in Treatment of Bell’s Palsy

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ORIGINAL PAPER
SUMMARY

Introduction: There are no established doctrines for treating Bell's facial nerve paralysis (Bell's palsy), as there are still controversies in relation to the etiology of the disease. According to available sources, 75% of all patients experience minor damage to the myelin sheath, thus usually recovering spontaneously and with no particular treatment (1, 2). However, the rest of the patients may, without adequate treatment, experience a host of serious complications, starting from prolonged weakness of facial muscles, syncretism, hyperkinesias, contractions, even complete paralysis of facial muscles. All this may eventually lead to pronounced psychological problems. The initial therapy administered by maxillofacial surgeons is different from the one prescribed by neurologist, since maxillofacial surgeons recommend nerve blocks using 2% Xylocaine introduced in the stylomastoid area, accompanied by vitamin, anti-viral and non-corticosteroid anti-edema treatment.

1. INTRODUCTION

There are no established doctrines for treating Bell's facial nerve paralysis (Bell's palsy), as there are still controversies in relation to the etiology of the disease. According to available sources, some 75% of all patients experience minor damage to the myelin sheath, thus usually recovering spontaneously and with no particular treatment (1, 2). However, the rest of the patients may, without adequate treatment, experience a host of serious complications, starting from prolonged weakness of facial muscles, syncretism, hyperkinesias, contractions, even complete paralysis of facial muscles. All this may eventually lead to pronounced psychological problems. The initial therapy administered by maxillofacial surgeons is different from the one prescribed by neurologist, since maxillofacial surgeons recommend nerve blocks using 2% Xylocaine introduced in the stylomastoid area, accompanied by vitamin, anti-viral and non-corticosteroid anti-edema treatment.

2. RESEARCH MATERIAL AND METHODS

The research included 60 subjects of both sexes, aged 25 to 65. All the subjects had been diagnosed with Bell’s palsy and all were treated at the Maxillofacial Surgery Clinic of the University Hospital, either as outpatients or in hospitalization.

The subjects were divided into two groups:
• Group A included 30 subjects with Bell's palsy, treated by nerve blocks administered in the stylomastoid area, accompanied by vitamin, antiviral and anti-edema non-corticosteroid treatment.
• Group B included 30 subjects with Bell's palsy, treated by corticosteroids per os according to a prescribed pattern, accompanied by vitamin and antiviral treatment, as well as treatment to protect the gastrointestinal tract.

The following criteria were observed with all the subjects: research included adults only, in light of the contraindications for treating children with corticosteroids (6, 7, 8); the study included only the subjects who contacted the Clinic within 72 hours from the presentation of symptoms, since according to almost all the studies available, corticosteroids render satisfactory results only if their administration begins within this time (9, 10); research included patients who had not had Bell's palsy on the other side, because of a possible unrealistic numerical clinical assessment; patients for whom corticosteroids and antiviral treatment would not have been recommended for any reasons were not included in the research. The research used the method of case history and clinical examination. Clinical examinations provided a numerical assessment for a total of ten categories of facial functions: raising eyebrows m. frontalis, frowning (m. corrugator supercilii), blinking (m. orbicularis oculi), squinting (m. orbicularis oculi), nose wrinkle (m. procerus and m. levator labii sup. aleque nasi), upper lip (m. levator labii sup., m. orbicularis oris), lower lip (m. depressor labii inf., m. orbicularis oris), whistling (m. orbicularis oris), symmetry of conscious facial movement (the overall impression on the function of all the facial muscles), facial symmetry when idle (facial muscle tone), 3, 5, 7 or 10 points were assigned for each category, depending on how pronounced movement was in the given category. Numerical clinical evaluation was conducted at the onset of the disease, two weeks later, one month later, three and six months after the onset of the disease.

3. RESULTS

Analyses of the data obtained, using standard statistics analysis and the t-test rendered the following results:

Total values of the numerical clinical assessment at first examinations indicate that the degree of Bell's palsy was approximately the same in both groups (Graph 1).

Results of the different treatments in the total value of the numerical clinical assessment present a significant difference in subsequent check-ups one and three months after the appearance of the first symptoms, with p < 0.05 at the level of certainty of 95% (Table 1).

Correlations of numerical clinical
assessments between check-ups for all the factors within **group A** presented significant differences in the values of numerical clinical assessments from one month after the first symptoms, until the assessment six months after the first symptoms (**p<0.05**) (Table 2).

Correlations of numerical clinical assessments between check-ups for all the factors within **group B** presented significant differences in the values of numerical clinical assessment from the first examination, until the assessment six months after the first symptoms (**p<0.05**) (Table 3).

### 4. DISCUSSION

Contradictions in theories on the etiology of Bell’s palsy lead to contradictions in how it is treated. Treatment by nerve block administered in the stylomastoid area is justified from the point of view of few or no contraindications in relation to Xylocaine, as well as from the point of view of treatment success rate.

Since numerous authors have reported on successful application of corticosteroids in treating Bell’s palsy, this study observed treatment results for a group of subjects treated with nerve blocks in the stylomastoid area, with vitamin and antiviral treatment, and another group of subjects treated with corticosteroids, with no nerve blocks, and with vitamin and antiviral treatment.

Subjects in both groups were aged 25 to 65 and the sexes were evenly represented. **Group A** included 18 patients with facial palsy on the left side and 12 with facial palsy on the right side, and **group B** included 11 patients with palsy on the left side and 19 patients on the right side. **T-test** results for all the factors of numerical clinical assessments indicate a significant difference, first present at the check-up three months after the first symptoms, whereas no significant difference was recorded at the check-up six months after the first symptoms. A correlation of measurements for all the parameters of numerical clinical assessment within **group A** presented a significant change, first noted during the check-up 15 days after the appearance of the first symptoms, and then after that. This means that visible progress in the treatment starts 15 to 30 days after the appearance of the first symptoms. A study conducted by Krmpotic presented results which demonstrate that there is visible improvement after seven days, and the treatment is successfully completed only after some 20 days (11). A correlation of measurements for all the parameters of numerical clinical assessments within **group B** presented a significant change from the very beginning. A correlation of numerical assessments at the first check-up and those made 15 days after the first symptoms, i.e. after the completion of the corticosteroid treatment, presents a significant difference which continues all the way until the check-up six months after the first presentation of symptoms. This corresponds with most other studies available, though some of them assign the success of the treatment to physiotherapy, which also causes some controversy as to its type and method (12, 13, 14, 15).

### 5. CONCLUSION

Subjects in **group A**, who had nerve blocks of 2% Xylocaine administered in the stylomastoid area, with no corticosteroids, demonstrated a considerably slower rate of recovery of the facial nerve and of facial functions. A considerably faster recovery of the facial nerve, evaluated through the recovery of facial functions, was noted among subjects in **group B**, who received corticosteroids in their treatment.
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Comparing the two different methods of treatment of Bell’s palsy in group A and group B, results differ during the first three months. Differences between the two groups in the rate of recovery of the facial nerve and of facial functions was lost six months after the first presentation of symptoms.

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