The Negative Effect of Unsupervised Exercises on Patients with Facial Paresis

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ABSTRACT

The objective of this retrospective chart review is to determine the effect of unsupervised facial exercises on patients with facial paresis.

The study included 14 patients who were referred to physical therapy for facial neuromuscular retraining. Patients were excluded if they had received electrical stimulation or facial reanimation surgery. There were 6 patients who participated in unsupervised facial exercises and 8 patients who did not receive prior exercise instruction. Both groups included diagnoses of Bell’s Palsy, Ramsay Hunt, and post acoustic neuroma resection.

The study compared the scores of each group at the onset of facial therapy using the House Brackman grading system and the Facial Grading System (FGS).

There was not a significant difference between groups in terms of the House Brackman score, total FGS score, resting symmetry or movement subscales. However, the unsupervised exercise group did reveal a significantly higher synkinesis subscale score than the non-exercise group.

This review suggests that issuing unsupervised facial exercises does not help with facial recovery, and in fact, may contribute to increased synkinesis.

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DISCUSSION

Facial palsy can be a debilitating disorder that can affect eating, drinking, communication, self-esteem, and quality of life. Patients with facial palsy are often given one of the following recommendations: exercises per handout, take no action, electrical stimulation, or neuromuscular retraining with a physical, occupational, or speech therapist.1,2,3,4,5 There is evidence that electrical stimulation can have a negative impact on patient outcomes, and is not recommended for recovery.3,4,5 Anecdotally, many experienced therapists do not recommend patient participation in unsupervised facial exercises due to the tendency towards incorrect muscle recruitment, mass movement, and risk of promoting synkinesis.3,4,5 However, this has not specifically been studied.

This retrospective review included a comparison between initial House Brackman and Facial Grading System Scores of patients who were referred to physical therapy for facial neuromuscular retraining. These measures were compared between the unsupervised exercise group (n=6) and the non-exercise group (n=8). The average time since onset of both groups (exercise=18.2 months, no exercise=9.3 months) was longer than the 3 months that is suggested to observe patients for potential spontaneous recovery.4 The only significant finding was a higher synkinesis subscale score for the unsupervised exercise group compared to the non-exercise group.

Conclusion:

There is evidence that issuing unsupervised facial exercises to patients with facial paralysis may delay recovery due to incorrect motor recruitment and increased synkinesis. Therefore, it is recommended that patients who do not experience spontaneous recovery within 3 months are referred to a qualified physical, occupational, or speech therapist to participate in facial neuromuscular re-education. Further investigation is necessary to determine if initial synkinesis score impacts overall patient outcomes following intervention.

REFERENCES


SAMPLE OF UNSUPERVISED EXERCISES (not recommended)

1. Wrinkle forehead, raising eyebrows
3. Wrinkle nose and sniff
4. Close eyes tightly
5. Open eyes wide
6. Squint eyes (as if from bright sun)
7. Balloon out cheeks with air
8. Hollow cheeks
9. Pucker lips to whistle
10. Open mouth, dropping jaw evenly
11. Curl bottom lip under
12. Exaggerated smile (try for symmetry)
13. Show as many teeth as possible
14. Run tongue out straight, but not extended
15. Curl ½ upper lip upward (sneer)-both sides

GRADING SCALES

House Brackman

<table>
<thead>
<tr>
<th>Grade</th>
<th>Defined By</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Normal facial function in all areas.</td>
</tr>
<tr>
<td>FAH Edrophonium</td>
<td>Right-sided synkinesis or synkinesis observed only when patient imagines raising eyebrow and squinting.</td>
</tr>
<tr>
<td>Moderate Edrophonium</td>
<td>Right-sided synkinesis or synkinesis observed only when patient images raising eyebrow and squinting.</td>
</tr>
<tr>
<td>Severe Edrophonium</td>
<td>Right-sided synkinesis or synkinesis observed only when patient images raising eyebrow and squinting.</td>
</tr>
<tr>
<td>Face</td>
<td>Right side of face is not symmetrical at rest.</td>
</tr>
<tr>
<td>Upper Face</td>
<td>Right side of nose is not symmetrical at rest.</td>
</tr>
</tbody>
</table>

Facial Grading System

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Grading System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masking</td>
<td></td>
</tr>
<tr>
<td>Puckering</td>
<td></td>
</tr>
<tr>
<td>Anterior</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td></td>
</tr>
<tr>
<td>Evidence</td>
<td></td>
</tr>
</tbody>
</table>

SUMMARY OF RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Unsupervised Exercise Group</th>
<th>Non-Exercise Group</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Brackman</td>
<td>3.5</td>
<td>3.25</td>
<td>.487</td>
</tr>
<tr>
<td>Facial Grading System (FGS)</td>
<td>44.33</td>
<td>36</td>
<td>.16</td>
</tr>
<tr>
<td>Resting Subscale FGS</td>
<td>7.50</td>
<td>8.75</td>
<td>.603</td>
</tr>
<tr>
<td>Movement Subscale FGS</td>
<td>58.67</td>
<td>68.5</td>
<td>.189</td>
</tr>
<tr>
<td>Synkinesis Subscale FGS</td>
<td>6.83</td>
<td>3.75</td>
<td>.008*</td>
</tr>
</tbody>
</table>

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