



Incorporation of Balance and Vestibular Exercises in a 45-year-old Female with Bell's Palsy: A Case Report.

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PURPOSE:

Bell's palsy is an acute neuropathic disorder affecting the facial nerve, causing unilateral weakness or full paralysis of facial muscles.¹ Most individuals will have complete spontaneous recovery within three to four months following initial onset, but approximately 30% of individuals will continue to have permanent dysfunction of muscle control.¹⁻³ Individuals can also present with vestibulocochlear nerve involvement, causing unilateral vestibular hypofunction.^{4,5} Current studies are starting to show the benefits of facial strengthening exercises to decrease the risk of permanent facial nerve dysfunction, but no current research describes the benefits of incorporating vestibular rehabilitation exercises.^{3,6}

The purpose of this case report is to determine the effectiveness of balance and vestibular exercises in conjunction with facial strengthening exercises on a patient with Bell's palsy.

CASE DESCRIPTION:

Body Structure

- Right sided facial muscle weakness
- 3/10 pain along right occiput
- Decreased cervical ROM

Activity

Limitations

- Impaired balance
- Inability to fully close right eye
- Decreased ability for active facial motions

Participation

Restrictions

- Inability to drive
- Decreased desire to participate in social activities

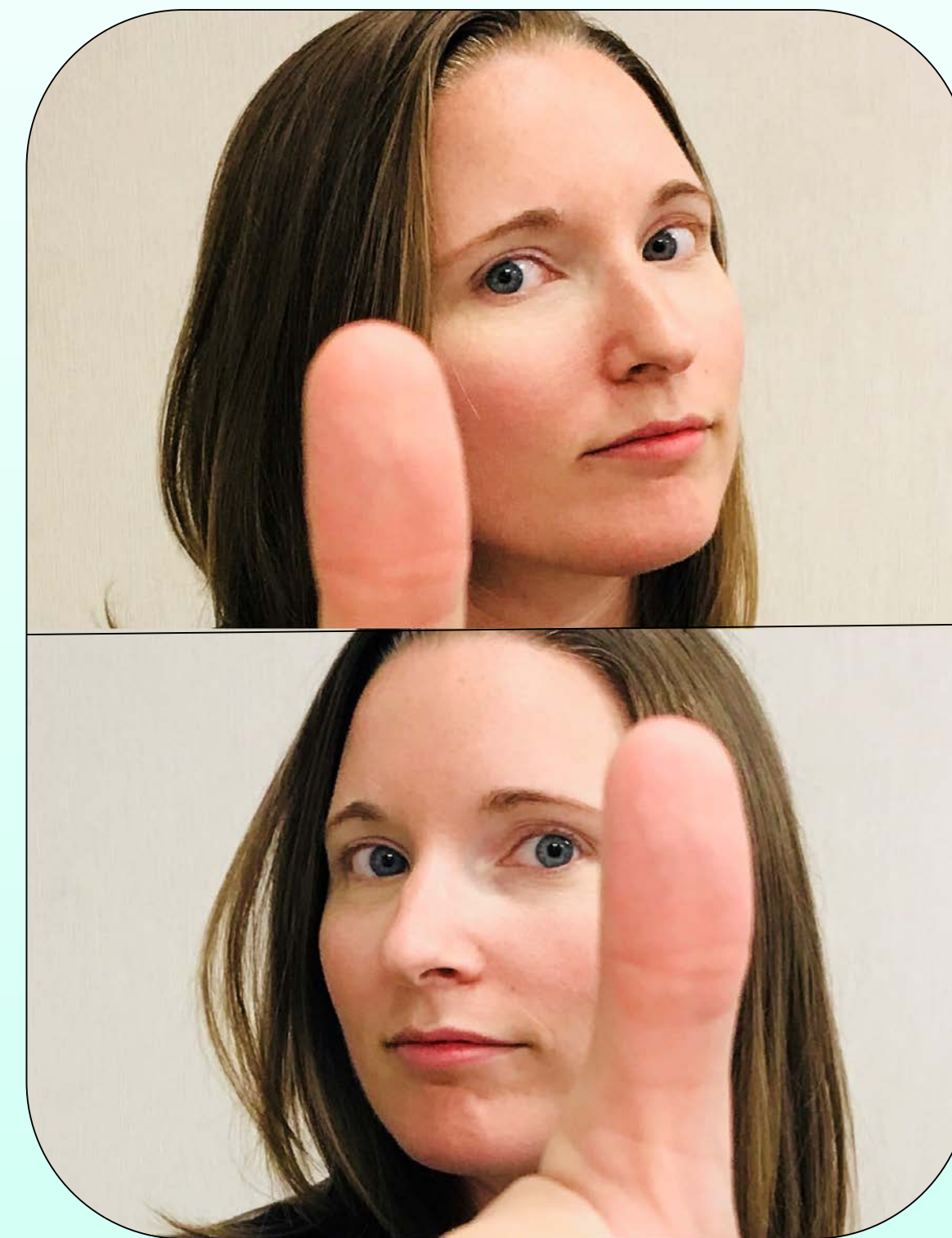
Personal Factors

- Support of spouse
- Fear for long-term deficits

Environmental Factors

- Limited means for transportation

METHODS:



VOR x1



VOR x2

Interventions

Initial Evaluation	<ul style="list-style-type: none"> • HEP consisting of active and active-assisted eyebrow raises, nose wrinkling, lip depression, lip elevation, eye closing, frowning and producing a wide smile.
Treatment 1	<ul style="list-style-type: none"> • AAROM/AROM facial muscles • VOR x1 and VOR x2 • Tandem stance on even surface • Balance on foam mat
Treatment 2	<ul style="list-style-type: none"> • AAROM/AROM facial muscles • VOR x1 and VOR x2 at increased reps • Tandem stance on even surface, eyes closed • Balance on foam mat w/ min-mod perturbations • Tandem stance with VOR x1
Treatment 3	<ul style="list-style-type: none"> • AAROM/AROM facial muscles • VOR x1 and VOR x2 at alternating speeds • Single leg stance on foam mat • Tandem stance on foam mat w/ VOR x1 and VOR x2
Treatment 4	<ul style="list-style-type: none"> • AAROM/AROM facial muscles • Resisted eye closure and buccinator mobility • VOR x1 and VOR x2 at alternating speeds • Single leg stance on foam mat • Tandem stance on foam mat w/ VOR x1 and VOR x2

RESULTS:

Activity	PT evaluation	1 st session	2 nd session	3 rd session	4 th session
Eye Closure	0	8	8	8	8
Smiling	0	3	3	2	2
Balance	4	6	4	4	5
Nose Mobility	0	0	0	0	0
Single leg stance (Right LE)	5 sec	7 sec	12 sec	15 sec	18 sec
Single leg stance (Left LE)	14 sec	16sec	24 sec	23 sec	25 sec

- **Facial Disability Index (FDI):** Initial: 44/100 social; 64/100 physical
4th visit:50/100 social; 48/100 physical
- **MMT:** Orbicularis oculi and buccinator improved from weak functional to functional. All other facial muscles stayed at same rating

CONCLUSION:

By incorporating vestibular exercises into the patient's therapy sessions, she was able to demonstrate improved single leg stance and self-reported decrease in onset of symptoms with a progression of vestibular exercises. Facial muscle strengthening exercises demonstrated significant improvements in eye closure and smiling but she exhibited little changes in facial symmetry, strength and self-perceived function. The patient reported she was starting to drive and participate in more social events by the 4th treatment session.

SCAN FOR REFERENCES:

