

## **CASE STUDY #2: VESTIBULAR REHABILITATION**

**CASE HISTORY:** 66 y.o. female caregiver with 3-17 hour work day. MVA stopped, rear-ended by a Sheriff, head goes fwd hits steering wheel, unconscious; dizziness after awoke. Previous PT 10-15 visits (started in 1 month post injury): shoulder Rx only, no neck Rx. Also c/o ® shoulder pain. Work up by ENT failed to give relief of symptoms according to patient. Referred to me by Neurosurgeon. Presents to me on 2 years post injury.

### **INITIAL EXAMINATION:**

**Cervical ROM:** cervical flexion limited at 30 deg and reproduces dizziness.

**Halpike-Dix Maneuver:** inconclusive as gives inconsistent nystagmus with the (L) eye: non consistent w/ BPPV.

**Other vestibular tests:** unable to perform secondary to such poor cervical ROM.

**Motion Sensitivity Quotient (MSQ):** 36.72 (0-100 scoring, 0= normal, 30+ = severe motion sensitivity)

<b>CERVICAL AROM:</b>	<b><u>4/16/2003</u></b>	<b><u>5/12/2003</u></b>	<b><u>8/05/2003</u></b>	<b><u>AMA norms</u></b>
Flexion	36 nausea	55 deg	55	60
Extension	100	75	75	75
(R) Rotation	83 pain	80	80	90
(L) Rotation	61	71	80	90
(R) Sidebending	52	50	50	45
(L) Sidebending	36	50	50	45

**TREATMENT RESULTS:** Patient seen TOTAL 13 visits from 4/16/2003 to 8/5/2003.

As of last visit, patient reported no dizziness for 4 weeks whatsoever, no (R) shoulder pain for 1 week except for mild discomfort during strengthening exercises. Pleased with her progress. Objectively I have been unable to reproduce any dizziness for over 4 weeks, full shoulder ROM pain-free all planes, 5/5 (R) shoulder strength except 4/5 abduction. MSQ is now I have underlying suspicion of potential small supraspinatus tear, however, she is managing quite well and today has reached the level of using light dumbbells that she will progress over time. We have discussed at length “pacing” herself using her shoulders and using good judgment – she understands this.

**REHAB OUTCOME: EXCELLENT.**

**PATIENT PERCEIVED IMPROVEMENT: 95% full recovery**

### **DISCUSSION**

Like many patients with complaints of dizziness, many have a “multifactorial” list of problems contributing. Although on the rare occasion that canalith maneuvers may completely all “dizzy” complaints, it is more commonly seen that cases are not so simple, as in this presented case.

In this case the following deficits were observed AND treated.

- 1.) Cervicogenic dysfunction, primarily upper cervical, with flexion and rotation loss, reproducing dizziness
- 2.) Vestibular (L) Hypofunction: as later demonstrated by VOR correction
- 3.) Motion Sensitivity: severe scoring
- 4.) (R) shoulder girdle dysfunction/weakness, in turn causing excessive strain on (R) cervical spine and maintaining the cervical dysfunction
- 5.) Habitual pattern of patient closing eyes to relieve the dizziness, further interrupting normal head/eye coordination.
- 6.) Balance Deficits: poor base of support, gait: shortened stride and poor reciprocal arm movement.

The end result of which, for this patient, was a 95% recovery, having no dizziness whatsoever, and rating herself “95%” due to her remaining weakness in the (R) shoulder that was non-painful.

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