Manual Therapy for Post-Concussion Syndrome

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Objectives

› Discuss evidence for manual therapy in patients with symptoms of headache, dizziness, oculomotor impairments and neck pain
› Learn and practice manual techniques
› Discuss integration of manual therapy evaluation and treatment of patients following concussion

Evaluation

Cervical ROM
Cervical Joint Position Sense
Oculomotor
  • Gaze Stability
  • Eye Follow
  • Saccades
  • Eye–Head Coordination
Postural Stability
  • Balance

Evaluation

Cervical Spine ROM
Inclinometer
  • Interrater Reliability 0.88–0.96
  • MDC 5–10°

Fletcher and Bandy, JOSPT 38(10), 2008.

Evaluation

90 cm from wall
• Mark starting point
• Eyes Closed
• Active Motion and return to starting point
• ABNormal: >4–5 cm (1.5–2 inches)
Evaluation

- Eyes focus on target
- Active cervical motion

**ABNormal**
- Sx reproduction
- Inability to focus
- Reduced or awkward motion

Gaze Stability

Evaluation

- Eyes follow moving target
- No cervical motion
- Neutral and torsion

**ABNormal**
- Sx reproduction
- Interrupted movement

Eye Follow

Evaluation

- Rapid Eye movement to a changed point of fixation

**ABNormal:**
- Difficulty following or fixating on the target
- Symptom reproduction

Saccadic Motion

Evaluation

- Patient moves eyes first to a target and then head

**ABNormal:**
- Difficulty with focus
- Sx reproduction

Eye/Head Coordination

Evaluation

- Measurable Objective Findings
- Test–ReTest Model

Gaze Stability

Saccadic Eye Motion
Conclusions

- Cervical manipulation produces similar pain relief, functional improvements and patient satisfaction as mobilization.
- Manipulation may provide short-term but not long-term pain relief.
- Thoracic manipulation used alone or in combination may improve pain and function.

Evidence

Manuel Therapy

Techniques

- Occipital–Atlantal Muscle Energy Technique
  - OA flexion, then sidebend
  - Pressure exerted by the therapist in a flexion–rotational direction
  - Patient instructed to look in the direction opposite of rotational force.

- C2 Lateral Flexion Muscle Energy Technique
  - Cervical spine in neutral
  - Patient is instructed to resist with matching force
  - Apply sidebending force to cranium and atlas

- Cervical Lateral Glide
  - MTP on articular process
  - Down glide with contact hand
  - Sidebending with stabilizing hand
Evidence

Cervical lateral glide increases nociceptive flexion reflex threshold but not pressure or thermal pain thresholds in chronic whiplash associated disorders: A pilot randomised controlled trial
Michele Sterling, Ashley Peddie, Clifton Chan, Madonna Puigui, Viana Veevan, Bill Viennois

Technique

Intraoral TMJ Distraction
- Thumb along molars
- Fingers grip jaw
- Distraction applied in a scooping motion

Sidelying TMJ Mobilization
- Thumbs placed on mandibular condyle
- Apply medial glide

Evidence

Conclusion
- SNAGs are a safe and effective technique
- Clinically and statistically significant immediate and sustained effect in reducing dizziness, neck pain and disability

Techniques

Mulligan SNAG (extension)
- Discover offending motion
- Patient is seated, PT applies glide
- Patient moves in offending direction
- Motion should be symptom free
Techniques

- Mulligan SNAG Rotation
  - Rotary Glide applied to C1

**Note**
- If no effect on symptoms, glide may be attempted at lower levels

Evidence

- Original article
  - Effects of acupuncture, cervical manipulation and NSAID therapy on dizziness and impaired head repositioning of suspected cervical origin: a pilot study
  - H. Hekki et al., Acupunct. Ther., 41, 1-5, 2006

- Outcomes
  - Manipulation and acupuncture resulted in the best change in relocation ability
  - Manipulation was the only intervention that significantly decreased frequency, intensity and duration of dizziness

Technique

- Epley Maneuver
  - Studies report 80–92% success rates in treating BPPV

Technique

- Cervicothoracic Distraction Manipulation

Integration

- What Technique?
  - Techniques are chosen based upon history
  - Pick 1 asterisk sign and measure objectively
  - Apply 1 manual therapy intervention
  - Re-assess

Technique

- Mid-Thoracic Manipulation