Relevance of the Thoracic Spine in Neck Pain

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What I’m up to...

• Clinical practice for 12 years

• RRS Education: [www.rrseducation.com](http://www.rrseducation.com)
  1) Weekly Research Reviews (est. 2006)
  2) Seminars (est. 2012)
  3) Online Courses (est. 2013)

• Lecturer (Orthopedics) at CMCC for 12 years

• Canadian Chiropractic Guideline Initiative (CCGI) & Ontario Opinion Leader

• Medicolegal Expert/Consultant
My course content is derived from the consistent, open-minded integration of current, relevant research with common sense, real clinical experience and patient-centered values.
Webinar Content & Objectives

My objective is to enhance & improve our knowledge & cultural authority, while promoting evidence-informed patient care that is effective, rational, reasonable and sustainable
Evidence-Informed Practice (EIP)

Clinical expertise

Best research evidence

Patient values & preferences

Clinical context

CLINICAL DECISION
Today’s Learning Objectives

1) Discuss the relevance of the thoracic spine in the etiology of neck pain
2) Review the treatment rationale and evidence for thoracic SMT in neck pain
3) Summarize practical patient management advice, home/office care & simple rehabilitation options
Relevance of the Thoracic Spine in Neck Pain

IS THERE A CONNECTION?
Neck Pain – Overview

• *Cervical spine can be involved in:*  
  – Headaches, concussions, facial pain, TMJ-D, mechanical neck pain, IVD issues, upper extremity complaints, systemic conditions, etc.

• *Numerous mechanisms of injury (MOI):*  
  – Functional, postural, structural, degeneration/OA, pathologic, trauma, whiplash

• *Multiple potential pain generators:*  
  – Often difficult to be specific!
Neck Pain – Overview

• **Neck pain is common** → 1-yr prevalence = 30-50% (Haldeman et al. 2010; Hogg-Johnson et al. 2009)
• **Neck pain (like LBP) is often recurrent**
• ~1/3 become chronic (Huisman et al. 2013)
• **Pain Generator(s) →** difficult to identify in most cases (also like LBP)!
  – Tissue-specificity in diagnosis is noble and logical
  • BUT, it does not always = best treatment
GBD Top 10 (+1) Causes of Disability
(Vos et al. 2012)

1. Low back pain*(!)
2. Major depressive disorder
3. Iron-deficiency anaemia
4. Neck pain (!)
5. Chronic obstructive pulmonary disease
6. “Other” MSK disorders
7. Anxiety disorders
8. Migraine
9. Diabetes
10. Falls (!)
11. Osteoarthritis (!)
Why Patients Consult Chiropractors in North America

- Back pain: 42%
- Neck pain: 19-24%
- Upper/Lower extremity problems: 14%
- Non-MSK problems: 6%
- Headache: 4%
- Strain: 4%
- Disc: 3%
- Scoliosis: 2%

(Coulter & Shekelle 2005; NBCE surveys ‘98, ‘03, ‘09)
Neck Pain – Overview

• **Most** patients in practice are diagnosed with ‘mechanical neck pain’

• *Clinical decision-making for neck pain (or ANY condition!) includes:*
  – Patient preference (prior treatment/episode experience, etc.), doctor’s clinical judgment (& skill set), best evidence, some degree of luck 😊
  – This is the basis of **evidence-informed practice**!
Chiropractic Options for NP

Patients wonder:
1) Should I get one or more of these treatments?
2) What ‘type’ of ____ is best?
3) Which provider of ____ do I go to?
Medical Options for NP

Advice, education, reassurance, exercise

Rx: NSAIDs to opioids, muscle relaxants

Imaging or further diagnostic workup

Specialist referral

Injections

Surgery
Neck Pain Treatment

• Currently, there is *no gold standard of treatment for neck pain*

• However, we do have recommendations from systematic reviews, CPGs etc...

• A comprehensive review of this topic is beyond our scope/time for today
  – Covered in detail in my RRS Education Neck Pain Seminar & Research Reviews...
Relevance of the Thoracic Spine in Neck Pain

TREATMENT RATIONALE & EVIDENCE
Rationale for Thoracic Treatment

• *Relevant questions/concepts:*
  – How is posture related to neck pain?
  – Can thoracic posture affect the neck (or influence forward head posture)?
  – Can SMT (or mobilization) directed to the thoracic spine actually change posture?
  – Can patients improve their own (thoracic or cervical) spinal mobility? Posture?

• Much of this seems logical (right?), but we don’t actually have the foundational evidence on these concepts!
Thoracic SMT for Neck Pain

- **Normally, uncomplicated NP = Cervical SMT**
  - Should we stop there? What if the patient does not consent to neck manipulation? Then what?

- **Risks involved with C-sp SMT are low, but:**
  - Public perception issues remain
  - Some patients may not consent...it’s their neck!

- **What about the thoracic spine?**
Thoracic SMT for Neck Pain

• Remember, there is currently NO gold standard treatment for neck pain
• From ~2005 onwards, a growing body of small clinical trials suggest that thoracic SMT can improve mechanical neck pain & disability (Systematic Reviews: Cross et al. 2011; Huisman et al. 2013)
  – Many of us have known this for years?
Why Thoracic SMT for Neck Pain?

• Better safety profile (at least perceived)?
• Fewer adverse reactions/overall risk?
• Postural strain → ↑ thoracic kyphosis → NP?
• Anatomical connections – extensors, parascapular muscles, upper ribs, fascial ‘chains’, upper-cross syndrome pattern...
• Recommended in UK Evidence Report (Bronfort et al. 2010) and 2 systematic reviews (Cross et al. 2011; Huisman et al. 2013)
Thoracic SMT for Neck Pain

**Prior SR of 6 trials:** (Cross et al. 2011)
- All published since 2005 on acute or subacute mechanical neck pain patients (n = ~20-70/trial)
- PEDro scores ~7/10
- **Tx:** Supine or seated SMT ± cervical mob exercises
- **Control:** placebo, TENS, heat, rest, mobs (n=1)
- **Results:** Cervical ROM, pain and self-reported functional outcomes *all favoured thoracic SMT groups in all trials*
- Benefits observed immediately post-tx & short-term follow-up
**Thoracic SMT for Neck Pain**

- **Updated SR of 10 trials:** (Huisman et al. 2013)
  - PEDro scores = 4-8/10; 677 subjects total
  - **Tx:** Supine or seated T-SMT ± cervical mob, exercises, electrotherapy, infra-red
  - **Control:** placebo/nothing, electrotherapy, heat, rest, exercise, educational material, mobs (n=2)
  - **Results:** T-SMT significantly ↓ pain & disability in 8/10 studies; insufficient evidence that T-SMT better than control treatments; **T-SMT does have therapeutic benefit for NP**
Research Considerations

• *Studies excluded from SRs due to:*
  – Including patients with non-mechanical NP
  – Poor methodology
  – Combined C-sp AND T-sp SMT (guess the results?)

• *General considerations:*
  – Variations in experimental/comparison treatments
  – Passive/placebo trials had ↑ treatment effects
  – Short/varied follow-up, blinding issues
  – **ALL** common problems in MSK research
Relevance of the Thoracic Spine in Neck Pain

PRACTICAL TREATMENT ADVICE
Which method of Thoracic SMT (or Mobilization) is Superior?

• We have options (prone, supine, seated)
• No high-level comparative evidence exists to guide our decision-making
  – So, pick one with your patient (they often have a preference!)
  – They are probably all equally effective and safe!
Techniques Utilized in Most RCTs
Home Care & Rehab Options

• Not an exhaustive list!
  – Foam rollers
  – Self-directed exercises – quadruped/supine/side-lying rotational mobility, cat-camel
  – Daily office routines – seated rotation, Brügger
Foam Roller
Side-Lying Rotational Mobility
Cat-Camel
At the Office (Spine-Sparing)
More Advanced Options
Practice Considerations

• *Don’t forget about the thoracic spine in your neck pain patients – there is value in this approach!*
  – Potential for better patient outcomes, improved rapport and trust...

• *Don’t forget to give your patients some homework and engage them in their own health!*
Thank you for listening...

QUESTIONS?
Contact Dr. Shawn Thistle

For questions about this lecture, RRS Education (Research Reviews, Seminars, Online Courses), or to inquire about speaking engagements or continuing education seminars:

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References


References


References

• Rubenstein SM et al. Predictors of adverse events following chiropractic care for patients with neck pain. JMPT 2008; 31(2): 94-103.