


Physiotherapy Management of the Cervicogenic Headache

Steve Moerman

Physiotherapist
BMR (PT), BSc., MCISc, FCAMPT





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BMR PT, BSc., MCISc, FCAMPT





Presenter Disclosure

- **Speaker Name:** Steve Moerman
- **Relationships with Commercial Interests:** None





OUTLINE

- Definition & Prevalence
- Pathophysiology
- Diagnosis
- PT Treatment





Definition + Prevalence

International Classification of Headache Disorders – 3rd Edition¹

Headache caused by a disorder of the cervical spine and its component bony, disc and/or soft tissue elements, usually but not invariably accompanied by neck pain.

Among all headaches, prevalence in the general population is²:

- 21.4% in 2017
- 21% in 2013
- 4.1–4.8% in 2008





Pathophysiology

- The anatomical considerations for the cervicogenic headache are based on the innervation of the C1-3 nerves:
- Through their dorsal ramus, ventral ramus and sinuvertebral nerves they innervate the following structures⁸:
 - Suboccipital muscles
 - AA Joint
 - Dura mater
 - Vertebral artery
 - Paraspinals
 - Z-joints
 - Skin of the suboccipital region
 - Cervical Discs





Pathophysiology

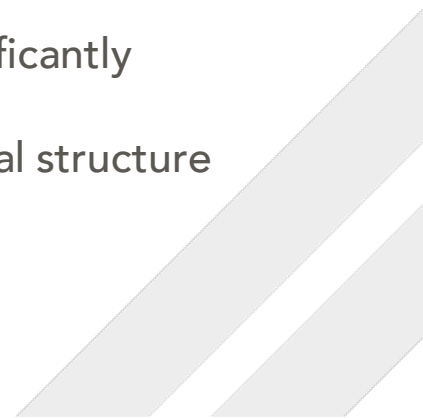
Cervicogenic headache involves pain referral from cervical structures that is produced by convergent excitation that is evoked by stimulation of these nerves and that results in excitation of second order neurons in the trigeminocervical complex^{3,4,5,6,7,8}



Diagnosis

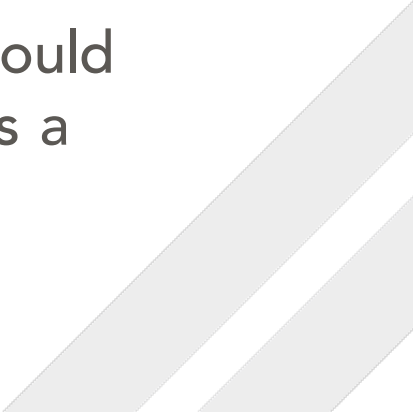
ICHD-3¹:

- Any headache fulfilling criterion C
- Clinical and/or imaging evidence of a disorder or lesion within the cervical spine or soft tissues of the neck, known to be able to cause headache
- Evidence of causation demonstrated by at least two of the following:
 - Headache has developed in temporal relation to the onset of the cervical disorder or appearance of the lesion
 - Headache has significantly improved or resolved in parallel with improvement in or resolution of the cervical disorder or lesion
 - Cervical range of motion is reduced and headache is made significantly worse by provocative maneuvers
 - Headache is abolished following diagnostic blockade of a cervical structure or its nerve supply
- Not better accounted for by another ICHD-3 diagnosis





Diagnosis

- The overlap in signs and symptomatology of cervicogenic headache with other forms of headaches (mainly migraine and tension-type headache) greatly complicates an appropriate diagnosis, leading to incorrect diagnoses in approximately 50% of cases of CGH³
 - It has been suggested that differential diagnosis should consist of a robust subjective examination as well as a detailed physical examination of the cervical spine³
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Diagnosis

Source: Blumenfeld et al (2018)⁹





Diagnosis

- ICHD-3 Clinical Descriptors:^{1,2}
 - Side locked
 - Dull, achy (non-throbbing/lancing)
 - Moderate to severe intensity
 - Radiating from posterior to anterior
 - Nausea, vomiting and photo/phonophobia may be present (to a lesser degree than in migraine)
 - Precipitated by neck movements or sustained postures





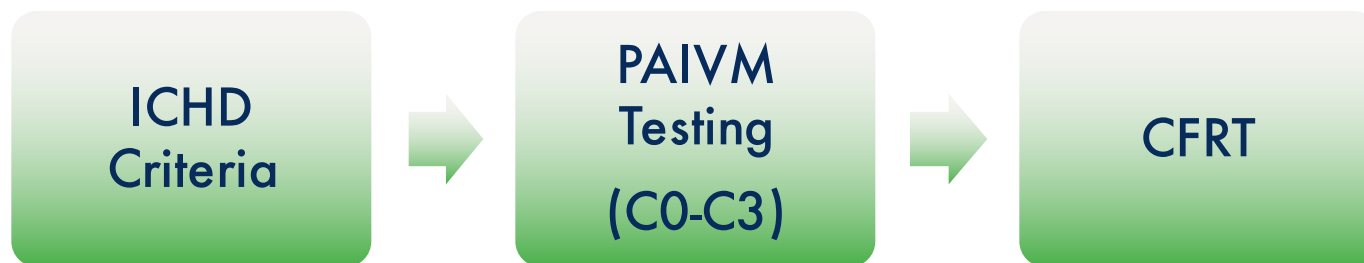
Diagnosis

- Common Objective Examination¹⁰:
 - Posture
 - Muscle Length
 - Muscle Strength and Activation
 - Segmental Manual Assessment
 - Cervical Flexion-Rotation Test
 - Breathing assessment
 - Soft tissue assessment



Rubio-Ochoa et al. (2016). Physical examination tests for screening and diagnosis of cervicogenic headache: A systematic review³

- 9 studies included
- All studies included clinical criteria provided by the International Headache Society (2004) as a requirement for the diagnosis of cervicogenic headache
- Results:
 - The tests that exhibited the highest reliability included the PAIVMs tests C1-C2 and the Cervical Flexion Rotation Test
- Recommended a stepwise decision making process for clinical practice:





Manual Assessment of Segmental Dysfunction in Cervicogenic Headache

Hall et al. (2010). Reliability of manual examination and frequency of symptomatic cervical motion segment dysfunction in cervicogenic headache¹²

- 60 subjects with CGH and 20 asymptomatic subjects were recruited
- The examiner applied progressive unilateral postero-anterior pressure over the articular pillars of the upper four cervical vertebrae, in an attempt to provoke a pain response. A negative response was no pain on firm pressure.
- Manual examination of the cervical spine was found to be reliable in 60 subjects with CGH





Cervical Flexion Rotation Test





Cervical Flexion Rotation Test

Ogince et al. (2007). The diagnostic validity of the cervical flexion–rotation test in C1/2-related cervicogenic headache¹³

- Single blind study with 23 cervicogenic headache patients, 23 asymptomatic patients and 12 migraine patients
- The results indicate that the range of rotation was significantly reduced in the cervicogenic headache group when compared to the migraine and asymptomatic subjects
- Normal range of motion was 39-42 degrees
- The cut off value for a positive test <32 degrees
- Sensitivity of 91%, Specificity of 90%





PT Treatment

- Common physical therapy interventions for CGH¹⁰:
 - Manual therapy (manipulation and mobilization)
 - Modalities: TENS, Laser, cryotherapy
 - Muscle Stretching
 - Therapeutic exercises
 - Needling: acupuncture and dry needling





PT Treatment

Rania et al. (2018). Physical therapy intervention for cervicogenic headache: an overview of systematic reviews. *European Journal of Physiotherapy*²

- Identified 6 systematic reviews between 1999-2016
 - 3 reviews included studies specifically to manual therapy
 - 3 reviews included studies for all conservative treatments
- Results of this review:
 - PT interventions might be an effective treatment approach for treating CGH.
 - According to current literature among all PT interventions, mobilization and manipulation are found to be the best treatment approaches for CGH management with manipulation is more effective than mobilization





PT Treatment

Racicki, et al. (2013). Conservative physical therapy management for the treatment of cervicogenic headache: A systematic review¹⁴

- N= 6 which included a total of 457 participants
- Interventions included:
 - Cervical and/or upper thoracic manipulation in isolation
 - Cervical SNAG mobilization
 - Cervical manipulation and mobilization
 - Cervical manipulation and mobilization with exercise.



PT Treatment

Racicki, et al. (2013). Conservative physical therapy management for the treatment of cervicogenic headache: A systematic review¹⁴

- Results: conservative physical therapy treatment techniques are effective interventions for decreasing CGH
- Utilizing a combination of mobilization, manipulation, and cervico-scapular strengthening exercises to treat a patient with CGH may be the most effective intervention





Contact Info



- Steve Moerman
BMR PT, BSc., MCISc, FCAMPT
 - steve@purewinnipeg.com
 - 204-338-7873



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