

Headache: An Osteopathic Approach to Treatment

WVSOM OMT Outline- Lecture and Hands on Session

ACOFP Approved Session for 2 hours of Hands-on Osteopathic Manipulation
Component 3 for OCC

Course Overview

Lecture 30 Minutes- Headache: An Osteopathic Approach to Treatment

Hands On Lab 70 Minutes- Head, Neck and Rib osteopathic techniques. Soft tissue Technique Cervical, Suboccipital Release, Occipital Decompression, Venous Sinus Drainage techniques, Levator Scapulae, Trapezius Stretch and Serratus Anterior Muscle Energy, Facilitated Positional Release Cervical region, Pectoralis Minor Muscle Energy, Facilitated Positional release First Rib

Learning Objectives

Lecture Objectives

1. Review the presentation of patients presenting to primary care with a headache.
2. Recognize the red flags for patients presenting with a headache.
3. Review the pathophysiology and anatomy related to cervicogenic headaches.

OMT Goals

1. Remove fascial and muscular restrictions that lead to somatic dysfunctions that impact the anatomy that influences the etiology of a cervicogenic headache.
 - a. Diagnose hypertonicity and somatic dysfunction in the regions of the head OA, cervical, upper ribs and thoracic inlet.
 - b. Sympathetic innervation – T1-4 is sympathetic innervation to the head and neck.
 - c. Parasympathetic - Vagus nerve exits the jugular foramen. Restriction in this region can lead to nausea experienced during a headache.
2. Normalize trigeminocervical nucleus by applying osteopathic techniques to the upper cervical and suboccipital region.
 - a. Trigemincervical nucleus – Located and C1, C2, C3 and is primarily sensory for the head and neck.
3. Improve vascular drainage and lymphatic drainage from the head and neck.
 - a. Diagnose TART and treat somatic dysfunction at the suboccipital region and the thoracic inlet.

Anatomic Considerations:

Cranium-

Finding hypertonicity, TART changes, and suboccipital and cranium asymmetry.

- Occiput inferior one side as compared to the other
- Tissue tension at the distribution of the venous sinuses
- Suboccipital muscles and fascia- Upper Trapezius, Semispinalis capitus, Rectus capitus, Obliquus capitus superior and inferior.
- Prevertebral and peritracheal fascia deep investing layer cervical fascia
- Dural tube attachments foramen magnum, C2-3, and the sacrum S2 inferiorly

Cervical Region

Location of C1- C7 with identifiable landmarks.

C2 – first sinuous process palpated

C3 – at the level of the angle of the mandible

C4 – recedes to find the spinous process

C7 – most prominent and mobile in comparison to T1

Levator Scapulae muscle is attached to C1-4 and the medial superior angle of the scapula

Trapezius muscle is attached to the superior nuchal line, the occipital protuberance, clavicle, acromium and spine of the scapula spinous process of C7-T12

Thoracic inlet/Upper Ribs

Pectoralis Minors- Attaches anteriorly to ribs 3,4,5, and to the coracoid process of the scapula. The pectoralis Minor stabilizes the scapula pulling it anterior and inferior.

Rib 1 – no rib angle and lays under the trapezius muscle posteriorly and the clavicle anteriorly. Attaches to T1 posteriorly.

Hands On Session Objectives

1. Discuss osteopathic diagnosis of the head, cervical, rib and thoracic regions as associated with the etiology and treatment of patients who present with a cervicogenic headache.

2. Describe a treatment sequence for osteopathic treatment of a patient presenting with a cervicogenic headache.
3. Demonstrate how to osteopathically diagnose hypertonic muscles, first rib and cervical region dysfunction.
4. Demonstrate the following techniques and assist with application at the tables.
 - Cervical Soft Tissue
 - Cervical Facilitated Positional release
 - Pectoralis Muscle Energy
 - First rib FPR
 - Levator Scapulae and Trapezius Stretch and Muscle energy
 - Suboccipital release
 - Occipital decompression
 - Venous sinus drainage

Treatment Techniques and Sequence

1. Longitudinal Stretch of the Cervical Region:

- Patient –Supine
- Physician – Standing at the side of the patient
- With both hands (one on each side of the posterior cervical paraspinal area apply a gentle to moderate force, ventrally to engage the soft tissues and cephalad to produce a longitudinal tractional effect (stretch).
- Repeat the technique 3-5 times to the hypertonic cervical musculature

2. Perpendicular Soft Tissue Technique of the Cervical Region

- Patient –Supine
- Physician – Standing at the side of the patient
- With the cephalad hand stabilize the patient's head. With the other hand reach posteriorly with the fingers of the caudad hand lifting and gently draws the paravertebral muscles ventrally. Repeat and note if the paraspinal muscles soften.

3. Pectoralis Minor Stretch and Muscle Energy

- Patient –Supine
- Physician – Standing at the head of the table.
- The physician places gentle posterior superior and lateral pressure on the anterior aspect of each shoulder.
- The patient is asked to gently push their shoulder toward the ceiling (into the hand of the physician).

- The physician resists the patient's effort for 3-5 seconds.
- Ask the patient to relax and take up the slack to the new barrier. Repeat the process 3-5 times.
- Recheck the pectoralis region for improvement.

4. Facilitated Positional Release First Rib

- Patient –Supine
- Physician –Standing at the side of the elevated rib
- One hand of the physician monitors the 1st rib posteriorly under the trapezius muscle
- The other hand grasps the patient's elbows and moves the upper extremity into abduction (about 90 degrees. Compress through the elbow until felt at the monitoring hand.
- Hold 3-5 seconds then internally rotate the upper extremity while adducting the upper extremity.

5. Levator Scapula and Trapezius Stretch and Muscle Energy

- Patient- supine
- Physician- Standing at the head of the table
- Lift the patient head with one hand inducing rotation and flexion to the opposite side of the levator scapulae you are treating.
- The hand secures the shoulder on the side of the dysfunction.
- Place a gently stretch to the restrictive barrier.
- To turn this into muscle energy: ask the patient to gently push their head into your hand under the head. Resist their effort for 3-5 seconds
- Take up the slack to the new restrictive barrier.
- Repeat 3-5 times.
- Return the patient to neutral and recheck.
- (For the upper Trapezius muscle use the same procedure but the positioning is side bending to the opposite side of the dysfunction)

6. Suboccipital Release

- The patient lies supine on the treatment table
- The physician sits at the head of the table
- The physician's finger pads are placed palm up beneath the patient's suboccipital region, in contact with the trapezius and its immediate underlying musculature
- The physician slowly and gently applies pressure upward into the tissues for a few seconds and then releases the pressure
- This pressure may be reapplied and released slowly and rhythmically until tissue texture changes occur or for 2 minutes. The pressure may also be continued in a more constant inhibitory style for 30 seconds to 1 minute

7. Occipital Decompression

- The patient lies supine, and the physician is seated at the head of the table with both forearms resting on the table, establishing a fulcrum.
- The patient's head rests on the physician's palms, and the physician's index and middle fingers (or the middle and ring fingers) approximate the patient's condylar processes (as far caudad on the occiput as the soft tissue and C1 will allow).
- The fingers of both hands initiate a gentle cephalad and lateral force at the base of the occiput.
- The force is maintained until a release is felt.
- The rate and amplitude of the CRI as it manifests in the basioccipital region are retested to assess the effectiveness of the technique.

8. Venous sinus Drainage

- Patient supine
- Physician – seated at the head
- Flex the fingers at the PIP with the dorsal surface of the hand on the table and the occipital protuberance sitting on the middle fingers. This is the region of the occipital sinus. When softening is felt, the physician approximates the 5th digits of their hands (this positions the physician in the region of the transverse sinus). When softening occurs, move the thumbs across the sagittal suture gently applying lateral traction. Move slowly up the sagittal suture until you reach the bregma. At the metopic suture approximate the flexed PIP again and place the finger pads on either side of the metopic suture and apply gentle lateral traction.

Summary

This is a practical osteopathic approach for treatment of a patient presenting with a cervicogenic headache. This treatment sequence and the chosen techniques takes into consideration anatomy and pathophysiology of headaches. The techniques address frequently seen somatic dysfunctions that might be encountered when examining a patient. These osteopathic techniques were chosen for simplicity, efficiency and effectiveness for those physicians who want to apply osteopathic manipulation to their practice.