

Techniques: Headache Honcho

by Lisa Upledger, DC

Address migraine headaches with a light-touch modality—CranioSacral Therapy



Our understanding of migraine headaches has come a long way since the days they were considered a psychological disorder reflecting poor coping skills, a low stress threshold, clinical depression, or borderline personality disorder. Now a recognized neurological condition, migraine disease affects approximately 30 million Americans, with up to 38 million having migraine genetic propensity.¹

In many situations, CranioSacral Therapy is one of the most valuable tools chiropractors can offer in the treatment of migraines. This light-touch modality helps normalize the craniosacral system and release meningeal and dural tube restrictions, allowing the structures of the central nervous system to resume optimal levels of functioning.

Basic Anatomy of the Craniosacral System

The craniosacral system, which houses the central nervous system (CNS), extends from the cranium, face, and mouth inferiorly to the sacrum and coccyx. It consists of a compartment formed by the dura mater membrane, cerebrospinal fluid within the membranes, systems regulating fluid flow, bones that attach to the membranes, and joints and sutures interconnecting these bones.

Essentially, the craniosacral system operates like a semiclosed hydraulic system. There is a rhythmic rise and fall of cerebrospinal fluid volume and pressure within the boundaries formed by the dura mater. According to research performed at Michigan State University,²⁻⁹ the cranial bones with their dural linings are in continual, minute motion to accommodate the constant fluid pressure changes within the membrane compartment. Through gentle palpation, CranioSacral Therapy practitioners use this rhythm as both an evaluative and therapeutic tool.

The cerebrospinal fluid within the craniosacral system acts as a shock absorber for the brain. In addition to delivering nutrients to the nerves, brain, and spinal cord tissue, the fluid washes away waste products emanating from metabolic processes. Chelators that remove toxic substances have also been found in cerebrospinal fluid, so you can see how crucial it is to have a strong, healthy craniosacral system.

Research has shown that the meningeal membranes and the perivascular fascia are the only pain-sensitive tissues in the brain. Therefore, any abnormal meningeal tension can cause pain, as can any pressure on blood vessels. Abnormal meningeal tension or aberrant pressures on the brain stem from surrounding fascia can also potentially cause postsynaptic sensory neurons to relay their messages to higher brain centers. This relates to another theory about migraines in which the brain stem pain receptors actually cause the migraine pain.

Cortical Spreading Depression

Historically, the migraine headache has largely been defined as a vascular disorder in which an event triggers vasoconstriction followed by vasodilation, inflammation, and headache. Now it is thought that the vasoconstriction/dilation is the result of a phenomena called cortical spreading depression.

Cortical spreading depression is a slow, propagating wave of strong, sustained neuronal firing (depolarization) that generates a transient, intense spike activity as it progresses into the tissue. This is followed by neuronal suppression that can last for minutes. When the spike (depolarization) occurs, there is increased innervation to blood vessels associated with an increase in regional blood flow, then reduced neuronal activity associated with a vasoconstriction producing a transient ischemia with a reduction in cerebrospinal fluid flow. In addition, a neurochemical imbalance occurs.

The auras and prodromes (premonition-like symptoms) often associated with migraines are likely caused by the vasoconstriction, after which the rebound and vasodilation occur. The actual pain of the migraine occurs when there is a rebound of abnormal vasodilation of the intracranial arteries and an activation of the sensory pain fibers around the blood vessels and meninges.

Migraine Headache Phases

Migraines generally come on in several phases, the first of which is the prodrome. This is the forewarning that indicates an alteration in the CNS. A highly individual experience, the prodrome may be accompanied by changes in mood or energy levels; a sudden feeling of depression, euphoria, or fatigue; or cravings for chocolate or other specific foods. There may be an alteration in sensory processing, muscle tone, nasal congestion, fluid retention, cognitive impairment or facial pressure.

If migraine sufferers can recognize their prodromes, they may have a much better understanding of the stimuli, and more opportunities to remove themselves from them. That alone could abort a migraine before it becomes full blown.

In about 15% of migraine cases, there is an aura phase that generally lasts no more than an hour. While symptoms vary, those most commonly noted are visual effects, such as flashing lights, scotoma, and partial or blurred vision. Other symptoms include olfactory and auditory hallucinations, tingling, or numbness in the face and extremities, confusion, partial paralysis, and more.

It is widely believed that the aura is caused by the cortical spreading depression, which is generally seen as coming from the back of the head through the occipital (visual) lobe forward. With vasoconstriction resulting in a decrease in blood flow and oxygen, the brain will certainly do strange things.

Next comes the mild phase of the migraine—when the pain begins. If the migraine is aborted at this stage, the pain may feel like nothing more than a tension headache. If the migraine progresses it generally leads to mild pain, sometimes accompanied by nausea and the beginning of throbbing pain.

If not aborted in the mild phase, the migraine will progress into moderate to severe pain with nausea and sensory sensitivity. Throbbing head pain is the main characteristic. At this point, the blood vessels are dilated. Any movement or activity increases blood flow, which causes more dilation, pain, and throbbing. This is when many prefer to lie perfectly still in a dark, quiet room.

The migraine may dissipate anywhere from 4 hours to 3 days later, after which a postheadache phase could last another few days. During this time the person may experience fatigue, irritability, inability to concentrate, muscle pain, and/or food intolerances.

CranioSacral Therapy Complements Chiropractic

CranioSacral Therapy helps prevent and abort migraines primarily by releasing tensions throughout the meninges. By removing restrictions from meningeal and cranial bone structures, pressure is taken off the nervous system and the entire craniosacral system can open up. This also allows fluid to drain so back pressure does not build up.

Plus, consider this: If a patient sustains an impact that causes meningeal contracture and compromises the tissue, this can keep pressure on the brain and CNS, which I believe could be a cause for a cortical spreading depression. When extra stress or pressure is added to the cortical system, it can trigger a chain reaction that leads to migraine headaches. Again, the meninges are pain sensitive. CranioSacral Therapy releases meningeal tensions, which takes pressure off the CNS.

The dura covers the inside of the cranial bones and surrounds the foramen magnum. It exits the cranium and attaches to C2 and C3, continuing down to where it attaches at S2 and the coccyx. Thus, it forms the dural tube that surrounds the spinal cord.

CranioSacral Therapy theory also supports the concept that the dura mater membrane within the vertebral canal (dural tube) has the freedom to glide up and down within the canal for a range of 0.5 to 2 cm. This

movement is allowed by the slackness and direction of the dural sleeves as they depart the dural tube and attach to the intertransverse foramina of the spinal column.

Conventionally, chiropractic focuses on adjusting bones. Yet, even while manipulating bones, you may not be releasing tension in the dural tube. That tension may be originating from meningeal strain patterns in the cranium that transfer down the dural tube. When these meningeal strain patterns are released using CranioSacral Therapy, they free the dural tube and dural sleeves, and the resulting nerve pressure is removed. This enables chiropractic adjustments to hold better.

Facilitated Spinal Cord Segments

When nerve roots refer increased levels of impulse activity into the spinal cord from their peripheral domains, a facilitated condition of the related spinal cord segments occurs. A condition of hyperactivity in the facilitated spinal cord segments sends out impulses to the related dural tube and dural sleeves. This causes a tightening and loss of mobility of the dural tube related to the facilitated segments with increased nerve pressure from a contracted dural tube sleeve resulting in continual neuronal firing.

Also, the nerves in the area go to the intervertebral muscle, causing them to contract and cause fixation and subluxation. In clinical applications, CranioSacral Therapy has effectively helped release such dural tube restrictions to normalize the activity of facilitated spinal cord segments.

To locate these areas of restricted mobility, the evaluator tests the mobility of the dural tube and releases restrictions as they're found using gentle traction techniques. If a peripheral restriction is released but the dural tube restriction and facilitated spinal cord segments are not, the peripheral problem usually reoccurs.

So a peripheral problem can translate through the facilitated segments up into the cranium and cause the meninges to contract in the same way an intracranial meningeal problem can translate down the dural tube and cause facilitation. Either one can result in a migraine or a tension headache.

Moving Past Pain to Prevention

A CranioSacral Therapy practitioner helps correct both primary and secondary dysfunctions of the peripheral body, dural tube, cranium, and sacrum. The goal is to correct, influence, and balance all craniosacral system dysfunctions and the areas to which they might lead. Correcting cranial bone lesions and meningeal/dural tube restrictions can help release the pain patterns of migraines.

At this stage the patient often moves from a phase of having obstacles removed to one of self-healing with the therapist simply facilitating the process. That is why CranioSacral Therapy is such an excellent preventive-medicine modality in cases of migraines—it mobilizes the body's natural defenses rather than focusing on the etiologic agents of disease. CP

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