

The Symbiotic Partnership of Dentistry And Craniosacral Therapy (Part One)

by Benjamin Shield, Ph.D.

Introduction

This article will explore the symbiotic partnership between the dental profession and craniosacral therapy. With the simple integration of craniosacral techniques, the dental professional will significantly enhance the effectiveness of existing modalities, increase the economic return in their practice, and benefit from greater patient satisfaction.

Craniosacral therapy (CST) can be thought of as the missing puzzle piece in the efficacy of many dental procedures. CST, as it expands our awareness beyond the mandible and maxillae, provides a holistic awareness of the dental mechanism and the well-being of the dental patient. And, whether performed by the dentist, dental assistant, or craniosacral therapist, the dental professional and the patient alike immediately recognize the benefit.

The goal is to better serve our patients. In addition to enhanced dental care, CST offers the dental professional the ability to solve many instances of craniocervical pain and dysfunction. The dental professional is in a unique position to correct underlying anatomical and functional dysfunction that may have been unseen or mistreated by other professionals.

The first article of this series appeared in the Number 6 (June 1998) issue of ZMK and offered a brief introduction to the craniosacral system and craniosacral therapy. It discussed the importance that the correction of dental mechanics should be made to a cranium that is as balanced as possible. This is important to insure the effectiveness and longevity of the correction, the prevention of negative symptoms, as well as the overall health of the individual.

The Craniosacral System

Craniosacral therapy involves the gentle manipulation and normalization of the cranial bones. CST also involves the treatment of the underlying membranes that provide the dural structure of the cranium as well as their continuation to the sacrum as they surround and support the brain and spinal cord. Craniosacral therapy also addresses the soft tissue affecting the craniosacral system.

Any imbalance of the craniosacral system can result in imbalances of the gross anatomical structures as well as producing a myriad of unwanted symptoms. The goal in the utilization of CST is to bring the skeletal structure, particularly that of the cervicocranium and its underlying membranes back into balance. A general principle of this work is that as the structure is normalized, function will follow.

The cranial bones and their underlying membranes move in relation to the production and resorption of the cerebrospinal fluid. The cerebrospinal fluid is produced in the ventricles of the brain and resorbed via processes of the arachnoid dura into the venous sagittal sinus. These cycles of cerebrospinal fluid production and resorption create a palpable motion of the cranial bones that can be easily observed by a trained craniosacral therapist.

The filling phase of the cycle in which the cerebrospinal fluid is produced is referred to as "flexion." The draining phase of the cycle in which the cerebrospinal fluid is resorbed is referred to as "extension." The terms "flexion" and "extension" refer to the angle created by the occipital base and the body of the sphenoid which "flexes" and "extends" in relation to the filling and draining of the cerebrospinal fluid.

Each cranial bone follows a predictable motion in this "cranial rhythm." And, we can use this motion to both evaluate and to gently treat the craniosacral system. The movement of particular cranial bones will be discussed in regard to specific dental conditions.

Craniosacral therapy can be highly effective in treating facial asymmetry, cranial imbalances, and soft tissue hypertonicity. These conditions play a direct role in chronic malocclusion, temporomandibular dysfunction, cranial pain, sensory impairment, and a variety of mechanical disorders.

Orthodontia

Dental professionals often observe that after a patient completes orthodontic treatment, a disturbing phenomenon occurs. Much to the disappointment of the dental professional and the patient, after the appliances are removed, often the teeth begin to return to their original, pre-treated positioning.

This can often be due to the appliances being applied to a cranium that has torsion and restriction. The appliances will move the teeth to the appropriate positions, but at the same time will torque and distort the cranium even further. When the appliances are removed, the cranium will seek to return to some degree of balance and in doing so, will move the teeth back towards their original faulted placement.

The simple utilization of craniosacral therapy can eliminate, or at the very least minimize, this unpleasant phenomenon. Whether it be fillings, inlays, onlays, implants, bridges, dentures, splints, or orthodontics, we want to equilibrate our work to a cranium that is as balanced as possible. For example, if we were being fitted for a suit or dress, we wouldn't want to be fitted while we were slouching!

The dentist, dental assistant, or craniosacral therapist balancing the craniosacral system can affect significant improvements in occlusion and positioning the teeth.

Craniosacral therapy may not only improve the orthodontic treatment, it can also serve to minimize and possibly eliminate the necessity of appliances.

It was discussed that during the cycle of cerebrospinal fluid production and resorption, the cranial bones moved in a predictable manner. During the filling phase ("flexion"), the structures of the hard palate respond by widening and flattening. As this occurs, the anterior teeth are withdrawn slightly posteriorly. If a patient suffers from a significant "flexion" lesion, this could result in the presentation of an underbite.

Conversely, during the draining phase ("extension"), the hard palate narrows and is drawn upwards. As this occurs, the anterior teeth are slightly extruded forward. If a patient suffers from a significant "extension" lesion, creating a high, narrow arch to the hard palate and extruding the anterior teeth forward, this could result in the presentation of an overbite.

Dental professionals often note that, during the course of orthodontic treatment, patients may report numerous ancillary symptoms such as cranial pain, sensory disorders, temporomandibular pain, and a decrease of energy levels. This may be due to the effect of the appliances "ratcheting" the cranium into a distorted and lesional pattern creating a variety of unpleasant symptoms. During orthodontic treatment, keeping the cranial bones balanced and relieving the torsion and opposing tensions that can be created by the increased pressure of the moving teeth, will help eliminate these accompanying symptoms.

It is fascinating to treat the individual teeth using craniosacral therapy. Just as it is possible to normalize the cranial bones and related soft tissue, it is also possible to reposition individual teeth through the process of "unwinding." Unwinding is a gentle process involving the release of the periodontal tissue that, due to trauma or excessive occlusal pressures, lock the teeth into their sockets. The release of these tissues assists the individual teeth to seek a more balanced position. The results are extremely rewarding.

It is also extremely beneficial to utilize craniosacral therapy after orthodontic treatment is completed and the appliances have been removed to maintain the balance of the cranial bones and membranes.

We can readily see the benefit to both the dental professional and the patient in utilizing craniosacral therapy before, during, and after orthodontic treatment. Integrating these simple techniques will enhance the efficacy and longevity of the dental work. Additionally, CST will greatly improve patient comfort, satisfaction, and confidence.

Temporomandibular Joint Dysfunction and Treatment

Another field of dental health in which dentistry and craniosacral therapy are richly intertwined is in the treatment of temporomandibular joint dysfunction.

The temporomandibular joints, because of their position in the skull, serve as a major neurological pathway for motor and sensory activity. The proximity to the ears, eyes, nose, throat, tongue, sinuses,

and cervical spine make them among the most important joints in the body. 38 percent of all neurological input to the brain comes from the face, mouth, and TMJ region. Their structure makes them perhaps the most special and most complex joints in the anatomy.

The two-cubic-inch area that contains the TMJ contains the sinuses, glands, the middle and inner ears, various tissues of the throat, brain tissue, different muscles, ligaments, nerves, blood vessels, lymphatic tissues, bones, teeth and the TMJ itself.

Because no individual has a perfect TMJ, everyone has some degree of TMJ dysfunction (ēTMDî). The TMJ compensates for all the rotations, compensations, and imbalances that radiate from our feet up and from our head down. We might think of our jaw as being like the pole used by the tightrope walker to maintain a delicate balance. The TMJ can be thought of, as well, as a repository for all our frustrations, excitement, unspoken words, and uncried tears.

The complex, interwoven network of nerves in the head and neck explains the fact that many TMJ patients also complain of pain in their neck, face, ear, eyes, sinuses, teeth, and head. Other disturbances may include dizziness, headaches, nausea, ringing in the ears, visual disturbances, loss of equilibrium, earaches, numbness or tingling in the face and hands, and oropharyngeal symptoms. Clicking and grating in the jaw joints, inability to open or close the mouth freely, and difficulty in chewing and swallowing are also reported.

Craniosacral therapy significantly augments the treatment of temporomandibular joint dysfunction by the dental professional. CST is effective in assisting corrections in the functional anatomy of the TMJ, abnormal muscular traction (external derangement) effecting the TMJ, alteration of occlusion and TMJ function due to facial trauma, anterior disc dislocation, joint noise, and chronic malocclusion. Craniosacral therapy addresses specific TMJ movement disorders such as deflection (pulling to one side), deviation (a "hitch," as if the mandible is maneuvering itself around some obstacle), and the locking of the TMJ (either when open or closed).

Craniosacral therapy addresses important muscle groups that are crucially important to dentistry and the craniosacral system. The muscles that are among the most significant are the lateral pterygoid, masseter, and temporalis muscles. The specific treatment of TMJ soft tissue improves the tonus and function of these muscles as well as improving the function of the innervating cranial and cervical nerves.

Treating and normalizing the soft tissue of the cranium has ramifications throughout the dental mechanism. Soft tissue influence on mandibular positioning is significant. There are sixteen muscle groups controlling mandibular positioning. This is more than any other bone in the human body with the exception of the scapulae which each have attachments of seventeen muscle groups.

In addressing the soft tissue of the TMJ, craniosacral therapy helps reduce compression and abnormal traction on the joint. Compression in the TMJ often has the effect of displacing the articular disc anteriorly. The disc, then, no longer adequately protects the structures in the TMJ. Compression does not allow the cartilaginous disc to hydrate and to receive nutrients. The disc has no direct blood supply and depends on a ēsponge-likeî motion to squeeze out waste products and to absorb into itself synovial fluid and nutrients. Consequently, the disc begins to degenerate, causing wear and tear to the TMJ.

Compression also squeezes out the synovial fluid and wears away the synovial tissue that produces the fluid. In the absence of sufficient lubrication, the moving parts of the TMJ system experience friction and wear and tear whenever the jaw moves.

Joint noise

The excessive pulling of the disc anteriorly by the lateral pterygoid muscle can also create temporomandibular joint noise such as "popping" and "clicking." When the disc is anteriorly displaced, the condyloid process of the mandible is caused to "pop" or "click" onto the disc as the jaw opens. Similarly, as the jaw closes, it may pop or click back off of the disc

Another source of popping and clicking is as *ticking disc*. This is often caused by undue soft tissue compression and / or the pressures accrued from misalignment of the cranium. The pressure on the

disc "squashes" the disc flat and presses all the lubrication out of it. The disc is not able to move smoothly and the mandible may slide off of the disc.

As cranial alignment and soft tissue traction are normalized, the disc is assisted back to its proper position. Lubrication can again flow around the disc. The disc is then able to move with the jaw, and the popping or clicking sound may disappear.

Mandibular Whiplash

Whiplash, with resultant injury to the temporomandibular joint, is often caused by rear end motor vehicle collisions. This type of accident causes the head to be suddenly thrown back. Because the anterior, sub-mandibular muscles of the neck do not have time to relax, they anchor the mandible while the head is thrown backward. This causes the mouth to open far beyond its functional capacity, causing the TMJ musculature, tendons, ligaments, and synovial membranes to be significantly bruised, strained, and / or torn. Most often, the disc is forced out of position, relocating in front of the joint, from the traction exerted by the lateral pterygoid muscle. This type of injury is called an "anterior displaced disc," or an "internal derangement."

The subsequent "whipping" motion of the head and neck forward into hyperflexion further exacerbates this injury, causing the jaw to snap shut. Along with injury and anterior displacement of the disc, the mandible is forced posteriorly.

Craniosacral therapy helps to reduce the traction of the lateral pterygoid muscles and the various soft tissue structures of the TMJ. Normalizing the traction of the lateral pterygoid muscle will help to recapture the disc. CST also assists in repositioning the mandible, which results in decreasing the hyperstimulation and the nociceptive (pain) impulses of the trigeminal nerve. Additionally, repositioning the mandible will help restore a more balanced occlusion with the maxillary teeth.

Temporal Bone Rotation

Temporomandibular joint compression causes both rotation of the temporal bone and displacement of the mandible. Because of the placement of the condyloid process in the fossa of the temporal bone, when the TMJ is compressed, the temporal bone is "internally" rotated and the mandible is retruded. If cranial imbalances exist such that the temporal bone is "externally" rotated, the mandible is protruded.

Whenever the temporal bone is out of its proper position ("lesioned"), the mandible does not have appropriate seating in the joint. This is a direct cause of TMJ dysfunction. Moreover, as will be discussed in part two of this article, temporal bone lesions can be a major cause of tinnitus, vertigo, and equilibrium dysfunctions. Craniosacral therapy acts to normalize the positioning of the temporal bones.

Discussion

Dentists hold a unique role in the treatment of various mechanical and functional disorders. In addition, they are often in the position to resolve many craniofacial dysfunctions that have not been resolved by other specialists.

By incorporating craniosacral techniques into their practice, the effectiveness of their treatment, their ability to treat their patients holistically, as well as the satisfaction of their patients will escalate. Whether the dentist, the dental assistant, or a craniosacral therapist performs the work, the dentist's practice and reputation will benefit.

In the next edition of ZMK, further benefits of incorporating craniosacral therapy into the dental practice will be discussed. Topics will include the dental / craniosacral influence on conditions including sensory dysfunctions, headaches, neuralgias, endocrine dysfunction, and autonomic nervous system imbalances.