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Non-Vascular Edema Affecting the Head and Neck: A Three Case Report

This is my second article written for this publication. In the summer 2010 edition of *Massage Matters*, I explain in some depth the phenomena of non-vascular edema and tissue degeneration. Briefly, this condition is characterized by an expanded extracellular matrix with a paucity of blood elements and a high concentration of proteoglycans in the tissue. In the present paper I'll be discussing three cases involving the head and neck. The first two will be dealing with the neck and viscerocranium. The last case also includes a section on the neurocranium. The reason for writing this paper is to demonstrate that the nerves in both the head and neck really are not different from those in other parts of the body. The underlying pathology is the same. Only the symptoms are different.

In February 2010, a forty-one year old male presented with right temporomandibular joint pain and stiffness. The problem began after falling from his bike in 1983. He was experiencing constant jaw trouble ever since. The jaw gets worse with chewing and in extreme cold. Previous care was occasional chiropractic visits. Examination showed restricted excursion of the mandible, forward head posture, hypertonicity in the muscles of mastication and joint crepitus. The patient was seen for several visits during May and June 2010. Treatment consisted of end range loading the ligaments, disc, joint capsul and muscles of the right TMJ. By doing so I was attempting to stretch tiny branches of the fifth cranial nerve. End range loading was also performed on the upper thoracic and lower cervical spinal discs. This procedure reshapes those discs and results in less of a forward head carriage. In reducing the forward head carriage I'm attempting to normalize the trigeminal spinal tract nucleus. From the end of June until now, the patient reports 80% improvement in symptoms and disability. He now has a full range of motion and exhibits far less hypertonicity in the masseter muscles. His diagnosis is non-vascular edema caused by the bike accident affecting the CN V on the right.

In August 2010 a fifty-four year old female presented with left temporomandibular joint and left ear symptoms. This started in 1989 when she was hit on the inferior aspect of the mandible driving it upwards. Several of her molar teeth were damaged during the trauma. She describes her symptoms as constant and full in nature, not position dependent, and having an intensity of 5 on the pain scale.

Examination and inspection revealed hypertonicity of the masseter muscles, a fullness in the left buccal area and right deviation of the jaw with mandibular depression. Previous care included dental work to repair the damaged molars. Treatment was similar to the previous case. After 5 visits over a period of three weeks she now reports an 80% abatement of symptoms and some periods with no TMJ pain at all. Examination now reveals symmetrical jaw excursion and greater symmetry in the buccal area. Her diagnosis is non-vascular edema affecting small branches of CN V on the left.



Loading the superior head of external pterygoid

A forty-five year old female presented in February, 2010 with a more complicated symptom picture. In 1980 she was involved in a head on MVA and wasn't wearing a seatbelt. She was thrown from the car and bounced on the road several times. This resulted in a dislocated her hip, head lacerations and concussion with loss of consciousness. A rheumatological blood profile was discovered at that time. In early 2007, she was involved in a second MVA and had symptoms consistent with cervical sprain. She first started noticing facial numbness beginning in May 2008. It seemed to start as a tingling in the left side of her lip and within a few days also some tingling in her left gums. She went to see a dentist but no abnormality was found. Within two weeks she also noticed some numbness and slight tingling in her left cheek. The left side of her forehead was affected about three to four months later, and by Christmas the left side of the chin and left half of her tongue were symptomatic. Starting in January 2009, she also noticed the same tingling in the right chin and by March 2009 also in the right upper lip and right cheek. Sometimes there is a flashing, electrical pulsing feeling there. Again, this is associated with no pain. At this time she felt it was harder to enunciate words. A head CT and MRI scan in the summer and fall

of 2008 were negative. Her blood work-up shows a rheumatological profile. Physical examination demonstrated normal pupils, fundi, visual fields and eye movements. She has reduced light touch in the forehead and left cheek particularly in the left and right V3 distributions. Pinprick sensation is almost absent in the left V2 and V3 distribution, reduced in V1 and reduced in right V2 and V3. She had decreased sensation over her right cornea. Cold temperature and sensation is normal. Ageusia involving the left buccal and lingual zones exists. Difficulty in formulating a smile suggesting some change in the small facial muscles and therefore involvement of the CN VII. Masseter temporalis movement and contraction appear to be normal. Tongue and palate are midline. Hearing appears normal except sounds in the right ear are a touch higher in pitch. Strength and sensation in all four limbs is normal. Her left cheek appears to be puffy and somewhat flaccid.

Previous care included acupuncture, craniosacral therapy and massage. This woman appears to have a bilateral left greater than right trigeminal neuropathy and a left sided CNVII neuropathy.

The patient was seen for 13 visits between February and July, 2010. Treatment included end range loading tissues derived from her first two pharyngeal arches. She now reports a marked improvement in pain and disability and reports this is the best she's felt since 2008. Her diagnosis is non-vascular edema caused by her previous MVA affecting CNV&VII. I believe her rheumatological profile is related to her first MVA of 1980. Non-vascular edema does exist in the brain after trauma¹⁻¹⁹. I believe this edema can also be mechanically removed but the treatment has yet to go through proper trials and is not in our scope of practice.



Loading tissues of brancial arch derivation including CN's V, VII, IX and X

I believe many conditions affecting the viscerocranium can be helped with therapeutic massage. It behooves the practitioner to understand the embryonic

development of the six pharyngeal (branchial) arches, their pouches and clefts. The interrelationship of these nerves (CNV_{1,2,3}, CNVII, CNIX, CNX, CNXI, CNXII, the cervical plexus) and their association with arch cartilage, blood vessels, muscles, fascia, mucosa, and mesenchyme give diagnostic clues for avenues of treatment. For example, Meckel's cartilage relates the incus and malleus to the sphenomandibular ligament. By end range loading this ligament perhaps small branches of CNV_{2,3} would have a reflex effect in the middle ear. The same thinking is true for the caudal arches. Conditions such as dysphasia and dysphagia may have a beneficial effect by loading involved tissues.

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