

COMMON NECK INJURIES AND THERAPEUTIC STRATEGIES

by George P. Kousaleos, LMT, NCTMB

In 1975, at age 25, I injured my neck in a rugby game and compounded the injury by going bodysurfing the next day. The injury left me with a spasm on the left side of my neck that caused intense pain, limiting my ability to turn my neck, and created a headache that was unlike anything I had ever experienced.

The next week a friend recommended chiropractic treatment, but upon initial examination, the chiropractor said that the spasm was too strong for him to safely adjust my neck. He gave me a cervical collar and recommended a local massage therapist. By that afternoon I had scheduled my first session. Like many Americans, I had never considered going to a massage therapist until soft-tissue pain became a part of my life.

During the intake prior to the session the massage therapist explained that the muscles of my neck were connected to my skull, shoulders, back, and chest, and that she needed to treat my full body to get maximum results. I still remember that massage treatment because I couldn't believe how many different places she touched that were sore and tender. She further explained that the muscles of my neck and back needed regular treatment due to their density and generally inflexible nature. I agreed to weekly sessions, and by the fourth session the pain, stiffness, and headache were gone.

And I had found my future career.

The Neck

The neck is often used as a metaphor to demonstrate physical characteristics or variables of the human condition. The stubbornness of a "bull neck" or the beauty of a "swan neck" is easily perceived, as the neck is one of the most important and distinguishable regions of the human body. It has multiple responsibilities, including support for the head and face, and coordination of movement between the cranium and thorax. It houses the cervical portion of the spinal cord, seven delicate vertebrae, the esophagus, major arteries and veins, lymphatic vessels, lymph nodes, a myriad of muscles, and dense fibrous connective tissue that wraps, envelopes, and interconnects all of its components.

As massage therapists quickly learn, pain in the neck affects thousands of people each day. Indeed, neck and back pain are often the two most common complaints by those who suffer soft-tissue injuries and seek massage therapy as a primary treatment. These pains are commonly caused by automobile accidents, athletic injuries, repetitive use, postural distortions, or degenerative conditions. This article will look at the anatomy of the neck, basic neck injuries, and treatment strategies that are available to the therapist from a broad variety of massage disciplines.

SO WHAT IS THE SMS ADVANCED REMEDIAL COURSE ALL ABOUT?

Scottish Massage Schools Advanced Remedial Massage course spans ten weekends and requires a Diploma in Remedial and Sports Massage or equivalent qualification to access it.

- More about general assessment – looking at patterns of use and misuse
- More specific assessment – so that treatments can be directed at areas
- Noting contributory factors – one area may be in fact 'holding' another area out of alignment so treatments to date haven't worked. With this additional information often lesions resolve much to the amazement of client and therapist!
- More specific techniques – in particular Muscle Energy Techniques – see our definition below
- Anatomy and physiology learned thus far is expanded on so that more precise techniques can be used

The term 'Muscle Energy Techniques' is bandied about on workshops. On our Diploma course, *the practitioner evaluates the primary areas of dysfunction* in order to place the affected joints in precise positions that enable the client to perform gentle isometric contractions. Thus, the Muscle Energy Techniques we teach are those that are **designed to realign facet joints** in similar fashion to the high velocity thrust of the osteopath and chiropractor. The patient is positioned very specifically; the therapist lines up the lesion very carefully so that when the patient is asked to contract only a very little muscle strength is required. As the lesion is encouraged to correct with minimum force, it is incredibly safe and the best way to treat many, many people. There are always concerns with manipulating the neck (or anywhere in the spine for that matter) particularly in the elderly or those suffering from autoimmune or chronic disorders – MET techniques are just the job! Other techniques may also be effective but often use more force.

Thus, MET is very different to the Post Isometric Contraction (PIR) which whilst it is very effective, is not the specific treatment that the MET taught on this course is. Success depends a great deal on effective application of techniques on a carefully assessed joint. This means knowledge of mechanics is required and if that sounds a bit much, it is all logical and straightforward and we will do what we can to keep things as clear as possible.

Proprioceptive Neuromuscular Facilitation (PNF) techniques focus on disturbances in movement patterns as do Strain-Counterstrain work. PIR uses near maximum force to treat tightness in large groups of muscles or muscle fibres – so they are all similar but very different. I would add that we do teach some of these other techniques as well – you do end up with a pretty full tool kit!

Our next course starts on 31st January 2009 Please phone 01224 822956 for modules and more info. See you there!

THE ANATOMY

The seven cervical vertebrae form the deepest infrastructure of the neck. Housing and protecting the spinal cord in their vertebral foramen, these vertebrae also allow movement of the head through the interconnection of atlas, axis, and cranium.

The muscles of the neck are divided into two major segments – postvertebral and prevertebral. The postvertebral muscles include the *erector spinae* group of *longissimus* and *splenius*, which are responsible for keeping the neck erect and for rotation. The *spinalis*, *semispinalis*, and *rectus capitis posterior* groups interconnect the cervical vertebrae to each other and the vertebrae to the base of the skull.

The prevertebral muscles include the three *scalenes*, the *longus capitis*, *longus colli*, and the *rectus capitis anterior*. These muscles combine to bend the neck and head forward (bilaterally) or tilt the head and neck to the side (unilaterally). There are also muscles that cover the full length of the neck, but attach only to the cranium and shoulder girdle. The *trapezius*, *levator scapulae* and *sternocleidomastoid* are three of the most important muscles of the head-to-shoulder group to consider when treating common neck injuries.

All of the cervical vertebrae and muscles are enveloped, supported, and strengthened by multiple layers of dense, fibrous fascia. Indeed, there are three rings of cervical fascia at superficial, intermediate, and intrinsic locations within the cervical column. Each muscle is also housed within its own fascial wrapping, or *epimysium*, which is also richly innervated with sensory neurons. The myofascia of these muscles are often the site for tissue thickening and adhesions following injury.



1. General range of motion – flexion



2. General range of motion – rotation



3. Moderate cervical traction



4. Kneading of the posterior muscles



5. Specific kneading of the sternocleidomastoids



6. Specific circular friction of the scalenes

COMMON NECK INJURIES

Neck sprain or strain is the most common cervical injury that massage therapists treat. These injuries are often caused by impact or contact with another person, object, or surface. Neck sprain or strain is most frequently associated to sports accidents, but can easily occur in falls or automobile accidents. Neck sprain usually refers to ligament damage and neck strain refers to muscle damage. The common symptoms of neck sprain/strain are:

- Pain in the neck that increases with movement
- Muscle stiffness and decreased range of motion
- Delayed pain in neck (24 to 48 hours) following accident
- Headache associated to neck pain
- Tingling or numbness in arms or hands

Massage therapy treatments can be safely administered once a physician has evaluated the injury and ruled out more serious damage to the vertebra or to the intervertebral disks.

Whiplash occurs when there is forceful impact from behind, causing the neck and head to violently move forward and back in an abrupt motion. While many whiplash injuries are caused from rear-end automobile accidents, there are also lateral whiplash injuries that occur from violent side impact. The common symptoms are:

- Neck pain and stiffness
- Headaches
- Pain in the shoulders or upper back
- Difficulty concentrating
- Blurred vision or ringing in the ears
- Irritability and fatigue

Like neck sprain/strain, a physician should evaluate the whiplash injury. Based on the severity of the symptoms, MRI or Cat Scans may be useful in determining the severity of the injury. Once structural damage has been ruled out, any massage therapy treatment can be enhanced with the use of ice (for acute stage), or contrast (for chronic stage) therapies.

Overuse and Postural Distortions

Overuse injuries to the neck are often caused by daily activities that are repetitive in nature, or create undue strain for extended periods of time. These can include carrying heavy backpacks or purses, work-related repetitive motion with the arms and shoulders, or sitting at a desk in a strained position that holds the head and neck forward of the body. The common symptoms are:

- Neck pain and stiffness
- Pain that radiates from neck to shoulder
- Tenderness at the base of the skull
- Chronic, dull pain throughout the neck and upper back
- Tension headaches

Massage therapy treatments are even more beneficial if the client can change the repetitive pattern that may have caused the injury. Carrying a lighter backpack or purse in a more balanced position, or changing the workstation to allow for better body mechanics is necessary for an optimal outcome. While forward head position is common in the computer age, postural distortions of the neck may also be caused by distortions in the back, pelvis, or legs. Chronic tightness of the fascia and muscles of the upper neck is one of the primary causes of tension headaches.

Degenerative Conditions

Osteoarthritis and degenerative disc disease can be caused by prolonged strain of the spine. As the discs lose pliability, the potential for bone spur formation increases. Another condition is cervical stenosis, or the narrowing of the spinal canal. In any of these conditions the nerves of the cervical spine can become irritated or pinched. Common symptoms are:

- Neck, shoulder, arm, or head pain
- Limited movement
- Postural deformities
- Numbness or loss of feeling

Many degenerative conditions are moderate and massage therapy is effective for soft tissue restoration. However, some conditions will only improve following surgical intervention, especially for advanced cases of cervical stenosis.



7. Side lying upper trapezius technique



8. Side lying scalene finger pad technique



9. Paraspinal gliding



10. Kneading of cervical muscles



11. Deep kneading of trapezius

TREATMENT STRATEGIES

Every discipline of massage therapy can have a positive effect on diminishing neck pain. From Swedish to Shiatsu - from neuromuscular to myofascial - from sports massage to structural integration, a treatment plan that incorporates the following criteria should improve the soft tissue dysfunction found in common neck injuries. The criteria are:

- Treat the whole body – all soft tissue is connected through the multiple layers of fascia that surround and support the body.
- Spend considerable time warming the soft tissues of the neck before applying deeper pressure.
- Balance the treatment of the neck by working with posterior, lateral, and anterior regions of the neck.
- Address any corresponding issues in the paraspinal tissues of the thoracic and lumbar regions.
- Test range of motion of the neck before and after treatment.
- Teach safe stretches for the neck and back and encourage the client to practice alignment exercises that improves posture.
- Massage therapy is most effective when delivered in a progressive series of sessions that gradually works deeper with less sensitivity.
- Go slow, improving the parasympathetic reflexes of the autonomic nervous system.

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THE NECK ROUTINE

From the supine position:

Start with gentle range-of-motion techniques, including traction, flexion, hyperextension, lateral flexion, and rotation. Ask for feedback about any sensitivity during movements.

Begin long, two-handed gliding strokes that include the lateral and posterior tissues of the neck. Traction and tissue warming are primary goals. Use less lubrication to increase tissue warmth.

Transition to moderate kneading strokes that will include *upper trapezius* and *levator scapula*, as well as the full posterior line of the neck. Find areas that feel dense or thick and spend extra time with circular friction.

Apply cross-fiber friction and kneading strokes at the sub-occipital region with one hand, while rotating the head to the opposite side with the other hand.

Apply deeper cross-fiber friction at the scapular attachment of the *levator scapula*, followed by deeper gliding strokes moving laterally on the spine of the scapula.

With head turned slightly to one side, begin more specific kneading of the *sternocleidomastoid*, from belly to either attachment. Hold the SCM from its belly and move the SCM.

Continued on page 30



12. Myofascial technique for shoulder and neck



13. Deeper traction of cervical spine

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James has been practicing bodywork for 17 years and has trained in a variety of approaches. He is founder and director of Ultimate Massage Solutions and has trained with Tom Myers, originator of the Anatomy Trains theory, and is a registered teacher of his approach. James has travelled widely to learn from some of the top educators in the field and he now teaches a range of courses for schools in Ireland, the UK and Europe. He has worked at the World Triathlon Championships in Hawaii and been invited to work with Premiership football teams, teaching their sports medicine teams and working on "problem" players. He now specialises in myofascial release and structural integration to rid the body of restrictions and restore the body's natural postural balance. www.anatomytrains.co.uk

Use finger pads to apply moderate pressure across the *scalene* group. Remember that there is a scalene opening between the anterior and medial scalene, closer to the distal end. The *brachial plexus and subclavian artery* pass through this opening, so be cautious with pressure and speed.

Finish with larger range-of-motion movements.

From the side-lying position:

Use palms or finger pads to glide and knead the tissues between the clavicle and spine of the scapula. Pressure can be increased to work through the *trapezius* as needed.

Use a soft fist to pull posteriorly across the tissues of the *SCM, scalenes, and levator scapula*. Ask the client to slightly nod up and down while the strokes move across each segment of the neck. Work the *suboccipital* tissues more specifically.

Stretch the shoulder down while applying opposing pressure on the skull. Have the client fully exhale during each stretch.

From the prone position:

Apply broad pressure with the palms or forearms on the upper thoracic paraspinals. Deeper work on the *rhomboids* should be included.

Knead the tissues of the full posterior neck, including the attachments at the skull, and the tissue between the neck and shoulder. Reach under the *trapezius* and apply circular friction to the *supraspinatus*.

Return to the supine position:

Apply deeper traction, using the fingertips to lift on either side of the spinous processes. Repeat several times, each time with more pressure.

Lifting the head and neck, use fingertips to apply cross-fiber strokes at each intervertebral joint. The *nuchal ligament*, which interconnects the spinous processes of the cervical vertebrae, may be accessible from this position.

Finally, use the soft fist to apply slow pressure across the tissues of the *trapezius* region, moving from anterior to posterior with each stroke. Slowly turn the head in the opposite direction with each stroke. Continue this technique on the lateral neck and apply pressure to the posterior muscles as well.

Have the client check range of motion post-session as a comparison to pre-session restrictions.

In conclusion

Effective treatment of the neck can be one of the most rewarding experiences for client and therapist. The appreciation and trust that emanates from successful outcomes can create a long-term client-therapist relationship, or perhaps it will inspire the client to change careers and help others.

It did for me.

George P. Kousaleos, L.M.T., N.C.T.M.B., is the founder and executive director of the CORE Institute School of Massage Therapy and Structural Bodywork, in Tallahassee, Florida. George has practiced and taught myofascial therapy and structural integration since 1979. He was active in the development of the National Certification for Therapeutic Massage and Bodywork examination program and the Massage Therapy Foundation, as well as organizing sports massage teams for the British Olympic Association in 1996 and for the 2004 Athens Olympiad. www.coreinstitute.com.

George will be coming to the UK in 2009 to teach two Myofascial workshops:

- *21&22 March 2009 – London – CORE Myofascial Therapy Intensive: Back Specific and Chest, Neck & Head, and*
- *28&29 March 2009 – SMTO Conference Edinburgh – Sports & Performance Bodywork.*

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- *Edinburgh contact SMTO 01224 822960 or info@scotmass.co.uk and*
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Note: The information contained in this article is not meant to replace hands-on training. Readers must ensure they have received adequate training before attempting to apply the technique described here. – The Editors