

Integrated Therapeutic Technique

By Andrew Gallagher

Integrated Therapeutic Technique is an innovative approach involving the collaborative application of three commonly practised modalities: Myofascial Trigger Point Therapy, Myofascial Release Therapy and Manual Lymphatic Drainage. In this article Andrew Gallagher discusses the nature of integrated technique and briefly explores its application to three common head and neck pain syndromes.

The musculoskeletal and circulatory systems are inherently linked and their optimal function is essential to good health.

Myofascial Trigger Point Therapy (MTPT), Myofascial Release Therapy (MRT) and Manual Lymphatic Drainage (MLD) are all techniques commonly practised by massage therapists. Most practitioners would use these techniques independently of each other, each method being used to treat a specific set of symptoms i.e. initially using MTPT, then if that doesn't work, attempting MLD, or MRT. The use of one technique being employed on the basis of the failure of the previous technique to achieve a successful outcome is unfortunately a common modus operandi in clinical massage practise.

The purpose of integrated technique is to apply a collaborative approach; the combined use of modalities can achieve better results than isolated application of each modality. For example, where appropriate, drainage of a myofascial trigger point prior to the application of trigger point therapy will reduce the pain associated with MTPT by draining neuro sensitive agents away from the trigger points. Similarly the use of Myofascial Release prior to lymphatic drainage will reduce the pressure within a muscle, thus facilitating the fluid movement within the muscle, enhancing the effect of manual lymphatic drainage.

While there is no set order in which to apply each modality, a consideration of three key features of the client's presentation will assist in the decision making process:

- pain
- postural distortion
- oedema/congestion.

The basis for the successful integration of these techniques is quite straight forward and involves the following:

- an understanding of the physiological effects of each technique
- an accurate assessment of the clinical signs and symptoms of the condition to be treated
- a skilled application of each specific modality
- close monitoring of the response of the client to each technique, involving post treatment assessment.

Lymphatic Drainage – Integrated Therapeutic Technique

We lay much stress on the uses of blood and the power of the nerves, but have we any evidence that they are of more vital importance than the lymphatics?

- A. T. Still, *The philosophy and Mechanical Principles of Osteopathy.*

Historically, we have been slow to recognise the existence of the lymphatic system as a complete identity. While early civilizations realised the existence of another circulatory fluid, they thought this belonged to the venous system. Early in the seventeenth century surgical specialists, anatomists and scientists began to piece together the lymphatic system and it was established that the lymphatic system was a complete and individual fluid, or circulatory, system. By the end of the century scientists had successfully isolated the vessels of the lymphatic system by the injection of mercury into its vessels.

Today we are beginning to understand the role of the lymphatic system in maintaining the health of soft tissues.

Anatomy of the lymphatic system

The lymphatic system is a major body system. Anatomically it is similar to, although larger than, the venous system.

The system, complete with its lymphatic vessels, lymphatic fluid and lymphatic nodes forms a structured watery complex flowing throughout the body tissues.

The lymph node

Fluid in the lymph vessels is transported through the system towards particular structures called lymph nodes. The nodes act as filtration and purification stations for the lymph fluid. There is also a lymphoid organ, containing immunocompetent cells, used in the immune response to antigens.

The health of the lymph nodes is imperative to maintaining a healthy lymphatic system.

The lymphatic system, complete with its lymph vessels, fluid and nodes forms a giant purification, distribution, transportation and waste disposal complex in the body. When the lymphatic process is compromised by soft tissue injury, sickness or other traumas, then a slowing down in its transportation functions takes place, creating a congestive state in the tissues. This compromises its optimal functioning and opens the door to other problems.

Manual Lymphatic Drainage – an overview

In the three clinical conditions this article focuses on, headaches, whiplash and sinus pain, the drainage of head and neck lymph vessels is critical. In each condition there will be evidence of congestion be it around trigger points within the various muscles in the fascial compartment or within the lymphatic vessels that drain the sinuses.

In the acute phase of these clinical conditions there is likely to be inflammatory exudate, which will require drainage, where as in the chronic phase fluid movement may have become generally sluggish.

Obviously the state of the soft tissues themselves will influence lymph movement and hence techniques that alter the physiology of soft tissue will have implications for the use of Manual Lymphatic Drainage.

Myofascial Therapy – an overview

Myofascial Trigger Point Therapy is one of the keystones of successful therapeutic massage. In all the conditions discussed in this article, there will invariably be a component of myofascial pain.

The clinical presentation of this component will involve pain and to a lesser degree restricted mobility. The pain will be experienced in the head, face, neck and shoulders, and will display that deep aching quality that is the hallmark of myofascial pain.

In each condition there will be a predictability of the muscles involved.

Headaches:

- sternocleidomastoid
- trapezius
- suboccipitals
- temporalis
- splenius cervicis.

Whiplash:

- sternocleidomastoid
- levator scapulae
- splenius cervicis/capitis.

Sinus pain:

- sternocleidomastoid
- temporalis.

These are the most likely muscles to be involved, however because of the development of secondary and satellite trigger points in chronic myofascial pain syndromes, other muscles may also become involved.

Clearly there is an inter-play between Myofascial Trigger Point Therapy and Myofascial Release Therapy. The key muscles already identified from a Myofascial Trigger Point Therapy perspective will also require attention from the Myofascial Release point of view.

While Myofascial Trigger Point Therapy focuses on the symptoms of individual muscles, Myofascial Release Therapy considers the continuous anatomical nature of the myofascial system and the structural implications of chronic change within that system.

Myofascial restrictions often co-exist with trigger points and in addition influence fluid dynamics, having implications for manual lymphatic drainage.

In all the clinical conditions there may be chronic fascial restrictions that will contribute to the range of symptoms patients present with. It must be said that these changes are probably most relevant for headache and post whiplash symptoms.

While individual muscle and regional releases will be undertaken there are three major contributions Myofascial Release Therapy will make to the management of these conditions.

- 1) Restoration of postural alignment (head position)
- 2) Correction of muscle imbalance
- 3) Opening up of thoracic cage, thus enhancing the mechanics of breathing.

Clinical syndromes

Headaches

Myofascial trigger points are a common source of head and face pain. As can be seen by any examination of myofascial pain patterns, many cervical muscles refer pain to the head. The dull achy sensation of myofascial pain is exactly how many patients describe their headaches.

It should be remembered that not all headaches are myofascial in origin and they can indicate serious non-musculoskeletal pathology. However, many patients will present with a diagnosis that has not adequately considered the myofascial contributions to their headache.

Inflammation/congestion will be a consideration due to local ischaemia at the trigger point site. The integration of lymphatic drainage of tissue surrounding myofascial trigger points will assist in clearing local congestion thus relieving ischaemia and improving local metabolic function.

David Simons and co-authors in the second edition of the *Trigger Point Manual* have adapted the headache classification of the international headache society, and have rated the likelihood of disorders in this category being associated with myofascial pain. Two of the most common types of headaches that present clinically are migraines and tension type headaches. While these types of headaches may have been seen in the past as separate unrelated diagnosis, more recent clinical research by Olesen (1991) suggests a significant overlap of the two conditions.

Olesen proposes that inputs 'from the primary afferents of intracranial and extracranial vasculature, extra cranial musculature and supraspinal neurone cells interact via a common neural pathway to determine the clinical presentation of the headache. The relative strength of each input will determine the headache picture that emerges clinically.'

This model explains patients who have both tension and migraine type headaches as well as those patients with tension headaches with an intermittent history of migraine. It also encompasses the role of stress and its influence on symptom presentation.

Head and neck pain associated with head trauma/flexion extension injuries

A constant constellation of head pain and other symptoms have been reported following minor closed head injuries with actual cranial impact, or flexion extension injuries without cranial impact. (Simons 1998)

Symptoms are usually felt around the head, neck and shoulder regions and may develop 24-48 hours post injury but onset of symptoms may be delayed for days or weeks.

In addition, restriction of range of movement and symptoms suggesting disturbance of vestibular function often develop with these and other pain symptoms continuing well beyond the normal time period for soft tissue healing.

The acute muscular overload of flexion extension injuries is well accepted as a mechanism of activating myofascial trigger points. Studies by Baker (1988) documented the common frequency of trigger points in one hundred motor accident victims.

The splenius muscles were commonly affected leading to symptoms of headaches. In addition the two muscles commonly injured by these types of injuries include:

- sternocleidomastoid, which check reins extension
- levator scapulae, which check reins flexion.

As a result it is not surprising the development of myofascial trigger points in these muscles is common in whiplash injuries. In particular it is the sternocleidomastoid that is often severely traumatised as it resists sudden and forced cervical extension leading to intramuscular oedema and in some cases muscular tearing with associated bleeding.

The involvement of the sternocleidomastoid and the resultant myofascial symptoms will not only encompass head and face pain but tinnitus, vertigo and auditory symptoms. These symptoms are common in the post 'whiplash' patient, often being poorly managed, as the myofascial source of these symptoms is not recognised.

Such injuries as described will also present with inflammation associated with both muscular tension and muscular damage.

The impact of this will depend on the severity of the injury. Inflammation will create an excess of fluid in the tissue, and the volume of fluid present will then, to a degree, also influence the severity of tinnitus, vertigo and auditory symptoms.

Sinus pain

Sinusitis is characterised by a sense of fullness in the sinus area, post-nasal discharge that may be purulent and failure of the occluded sinus to clear. (Simons 1998)

From a medical point of view controlling allergic responses is the key to long-term management. In addition a mechanical blockage such as a deviated septum may need to be corrected in order to achieve a resolution of the sinus infection.

Lymphatic congestion prevents competent drainage away from the area and a build up of fluid in the surrounding tissues is created.

In chronic sinusitis congestion may affect numerous facial and neck muscles. The lymphatic congestion impacts on the tissues resulting in pain, including headache and discomfort around the eyes.

Earache and other auditory symptoms are also indicative of congestion in the sinuses, particularly the frontal and maxillary sinuses.

Increased mucous production in the sinuses exacerbates the inflammatory situation in the facial tissues. With little fluid movement, the sternocleidomastoid muscle and the nodes within the muscle may be oedematous, eliciting further tension and pain responses in the SCM muscle.

While sinus infections and myofascial pain on initial inspection may seem unrelated there is a group of patients who present with sinus symptoms, primarily pain, and who on further evaluation also demonstrate symptoms of a myofascial pain syndrome. These patients have been unresponsive to numerous medical treatments for their 'sinus condition' having taken multiple courses of antibiotics to no effect. Once again they present with a constellation of symptoms, that while including fullness/congestion of sinuses, also include headaches, earache and auditory symptoms. The muscle most likely to produce this constellation of symptoms is the sternocleidomastoid muscle.

The sternocleidomastoid refers pain and tenderness both over frontal and maxillary sinuses and it is well accepted that disturbed autonomic function accompanied by chronic facial pain can result in increased mucus production in the sinuses.

Integration of therapies

The successful integration of several modalities requires a clear understanding of the potential interplay between each technique as well as an understanding of how a combination of techniques might yield a more effective result than each modality being applied in series. To achieve this it would be necessary to examine the effect of each two techniques on the delivery of the third.

Current understanding of myofascial trigger point pathophysiology, as put forward in Simon's integrated trigger point hypothesis, identifies a local metabolic disturbance at the site of the trigger point associated with local ischaemia leading to an energy crisis and subsequent disturbance of calcium uptake into the sarcoplasmic reticulum.

Localised oedema develops, as does tissue hypoxia, with increased concentrations of inflammatory mediators leading to sensitisation of sensory nerves lowering pain thresholds. Manual Lymphatic Drainage could logically be employed to improve local circulation, reduce tissue hypoxia, and flush out chemical irritants from the trigger point site.

An argument can be confidently made that drainage of trigger points, and in some cases of the whole muscle, should be undertaken in conjunction with standard trigger point therapy. A critical component of successful Myofascial Trigger Point Therapy is post deactivation stretching. In many cases of chronic injury where affected muscles have become shortened an effective stretch may be difficult to achieve.

Similarly where this shortening has lead to fascial contracture, (as seen in compartment syndrome) muscles may not only be difficult to stretch but be unable to sustain effective concentric or eccentric contractions. Myofascial Release could be employed to improve muscle mobility, to enable:

- Effective lengthening of muscles to achieve full deactivation of myofascial trigger points
- Conditioning exercises for muscles once trigger points have been deactivated.

Postural dysfunction is a significant perpetuating factor in myofascial pain syndromes. Myofascial Release techniques can be applied to shortened muscles seen in muscle imbalance/postural dysfunction syndromes, to achieve postural correction and therefore prevent the reoccurrence of myofascial pain syndrome.

From a theoretical view all muscles are potentially compartment syndromes. Any circumstance where the muscles mobility within its fascial envelope is compromised can lead to a muscle pain syndrome, the classic compartment syndrome being but at one end of the continuum. As a consequence of the raised intramuscular pressure drainage, both venous and lymphatic, may well be compromised. In clinical practise, this is seen as a 'boggy spongy' feel to the muscle. This intramuscular oedema impairs the muscles metabolic function and also provides resistance to mechanical techniques such as Myofascial Release Therapy.

The application of Manual Lymphatic Drainage to drain muscles prior to the use of Myofascial Release Therapy may well enhance the muscles ability to respond to the mechanical effects of Myofascial Release Therapy.

Myofascial trigger points too have an implication for Myofascial Release Therapy. Firstly the same mechanisms that lead to the development of trigger points also cause fascial restrictions. Secondly, trigger points cause shortening of muscles, which brings the muscle into a more intimate relationship with its fascial envelope, increasing the likelihood of fascial restrictions developing. Hence logic would suggest deactivation of trigger points might well increase the ease and effectiveness of Myofascial Release Therapy.

Treatment Template

Whiplash

- 1) Basic Manual Lymphatic Drainage sequences
- 2) Drain individual trigger points e.g. SCM, splenius capitus, levator scapulae
- 3) Early whiplash focuses on active ROM. Late (chronic whiplash) Myofascial Release of above muscles
- 4) 'If in doubt for drain'.

Headaches

- 1) Basic Manual Lymphatic Drainage sequence
- 2) Drain individual trigger points - trapezius (upper fibres trigger point 1 and 2), suboccipitalis, SCM and splenius capitus
- 3) Specific trigger point release and stretching
- 4) Myofascial Release e.g. Postural therapy (Implications for long-term lymphatic drainage).

Sinusitis

- 1) Identify and treat trigger points in the neck e.g. SCM, trapezius, and levator scapulae.
- 2) Specific Myofascial Release of relevant muscles (to achieve 'macro drainage')
- 3) Specific Manual Lymphatic Drainage to the neck
- 4) Specific Manual Lymphatic Drainage to the face
- 5) Specific Myofascial Release to the thoracic region i.e. pec major/pec minor release (using breathing facilitating technique).

In conclusion both acute and chronic musculoskeletal pain syndromes will involve pain, restricted mobility and tissue congestion. While these symptoms may be viewed separately, as the above discussion demonstrates, these symptoms are interacted. It therefore seems only logical that a clinical approach of integrated technique, a combination of techniques that not only treats these symptoms but deals with the interplay between symptoms, be readily achieved within the treatment session.

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