

An Anatomical Overview of the Spine and Treatment Techniques

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Mark Philip Deal, a Chiropractor, Osteopath, Acupuncturist and Educator presented a comprehensive and edifying workshop for the Association of Remedial Masseurs on November 11, 2007 at Gladesville in Sydney. His workshop consisted of thorough explanations, a balanced mix of practical work and a number of questions from the floor. Mark complemented the workshop with a fine set of notes for participants complete with photos to illustrate the practical components.

I have extracted the information presented in this article in part from a condensed form of Marks notes along with observations and comments that were made at the workshop.

I give full respect to any intellectual rights in respect to the information given at the workshop by **Mark Philip Deal** and **Peridor Health Schools** and include portions here along with commentary purely for the benefit of those members who could not attend.

The workshop commenced with the all-important *Structural Analysis*. Mark emphasised the importance of performing and recording a structural analysis in a Postero-Anterior then a Lateral View before assessing the spine.

Mark covered the essentials of structural Analysis in Postero-Anterior view in particular:

- ◇ Look at the level of the ears, occiput and shoulders.
- ◇ Note the prominence and level of the scapulae.
- ◇ Are the arms closer to the body on one side?
- ◇ Is there a scoliotic curve?
- ◇ Identify and touch the PSIS.
- ◇ Mark reminded us to inform the client that you are about to do this - and to tell them the things that you are doing as you do them.
- ◇ Assess if one of the PSIS is higher than the other.
- ◇ Assess the motion of the SIJ, ask the client to raise one knee then the other towards the chest. Observe any inferior motion to the PSIS on the side of leg rising.
- ◇ Observe any positive Trendelenberg phenomenon - an inability to stand on one leg where the pelvis drops markedly on the same side as the raised leg as this may indicate hip pathology or Gluteus Medius failure on the supporting leg side.
- ◇ Is the gluteal cleft diverted to one side?
- ◇ Is the gluteal fold higher than the other?
- ◇ Is the popliteal crease higher than the other?



Mark Philip Deal being introduced by Past President Maria Boccanfuso.

- ◇ Is one foot turned out more than the other?

Mark explained that measuring leg length is too arbitrary and that our palpation skills are varied and very subjective. He highlighted the fact that objective is what you can see and everyone else can see. Above all, keep your mind open to what conditions may be present. It could be a primary or secondary condition or a secondary that has become primary.

Mark then covered the essentials of structural Analysis in Lateral view in particular:

Is the head further forward or back from the direct line?

- ◇ Are the shoulders held forward or backward?
- ◇ Is there a "Lordotic" curve in the Cervical spine?
- ◇ Is there a "Kyphotic" curve in the Thoracic spine?
- ◇ Are the forearms held more forward with respect to the body?
- ◇ Is there a "Lordotic" curve in the Lumbar spine?
- ◇ Is the pelvis "tucked under" or protruding backwards?
- ◇ The ASIS and PSIS should be level or slightly forward if it is up it is a posterior or anterior rotation of the ilium.
- ◇ Are the knees flexed or hyperextended (and / or with respect to each other).
- ◇ Are the feet arched? Is one foot being carried forward with respect to the other? Is the longitudinal arch exaggerated or depressed?

Mark defined the following terminology:

A **Structural Scoliosis** shows that the structure is abnormal.

A **Functional Scoliosis** indicates that the muscles are unbalanced and the muscles are pulling things out of place.

Sherman's Disease or condition is where the bodies of the vertebrae collapse at the front so that there is an increased lateral curve (usually occurs in a growth spurt).

Osteoporosis' will have a tendency to increase **Sherman's Disease**.

Mark continued the workshop with *Assessing and treating the Cervical Spine*. Mark emphasised the importance of performing and recording Objective testing and findings which includes limitations of motion, guarding or more serious conditions.



Mark Philip Deal explaining his hands-on techniques to an attentive audience.

He identified two functional regions in the Cervical Spine. The first functional region is C1-2 and the second is C3-7, the difference being in structure and in movement.

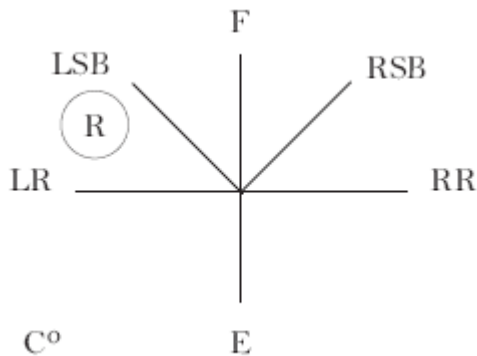
Mark explained that:

- ◇ Performing a "safety test" is for the clients wellbeing and is a good thing!
- ◇ If or as soon as there is an experience of any pain - stop!

Mark gave an example of testing cervical range of motion using the provided chart (see below) as a reference for noting and recording any observations.

Mark then covered the *essentials of Compression, Distraction, Adson's test, Scapular Approximation, Bilateral grip strength, Consensual light reflex and Vertebral Artery test.*

Compression is the application of pressure downward with your hands on the clients head.



- ◇ Indicates possible cervical disc protrusions particularly with neurological signs such as paraesthesia, numbness or causalgia radiation along the distribution of the nerve.
- ◇ Often reproduces local pain in the cervical spine due to inflammation of the local structures.
- ◇ Note observations whether positive or nil.

Distraction is the application of light upward pressure via occipital holding.

- ◇ Often relieves pain considerably in a true disc lesion.

- ◇ Reproduces pain due to ligament irritation.
- ◇ Note observations whether positive or nil.

Adson's test is performed by holding the pulse medial to radial condole while the arms abducted to 90 and the elbows are extended. Ask the client to turn their head to the side of the pulse and then slowly to the other side. Note any reduction in pulse pressure.

- ◇ Note any reduction in pulse pressure.
- ◇ Indicates possible Thoracic Outlet Syndrome condition.
- ◇ Note observations whether positive or nil.

Five main causes:

1. Anterior Scalenes compression of Brachial Plexus.
2. Costo-clavicular compression of the Brachial Plexus.
3. Presence of an extra Cervical Rib (X-ray required).
4. Pectoralis Minor causing compression of the Brachial Plexus.
5. Pancoast's Tumour in the apex of the lung (X-ray required).

Scapular Approximation is performed by instructing the client to flex their head "drop head forward" while bringing their outstretched arms into extension at the shoulder.

- ◇ A positive test is indicated by pain in the Cervico-thoracic junction. Some clients may experience pain in the pectoral region or anterior shoulder.
- ◇ Note observations whether positive or nil.

Bilateral grip strength is performed by asking the client to gradually squeeze your wrists.

- ◇ The client is normally stronger on their side of "handedness".

- ◇ Note observations whether positive or nil.

Consensual light reflex is performed by shining a light into client's eyes and noting papillary



Workshop attendees discussing the effects of the new techniques.

constriction. Alternatively, cover one eye and note if the other eye dilates.

- ◇ Note observations whether positive or nil.

A **Vertebral Artery test** is where the client lies supine with their eyes open. Gently turn the client's head to one side and slowly side-bend, extend the head over the edge of the table, and note any variation in pupillary size. Immediately stop the test if the client experiences any disturbance in vision, dizziness, ringing in the ears or any other sign of discomfort including pain.

- ◇ This test excludes Vertebral Artery Insufficiency caused by compression of either Vertebral Artery in the neck.
- ◇ Note observations whether positive or nil.
- ◇ Repeat the test on the other side.

Mark continued the workshop with a practical demonstration of *Cervical procedures, Lumbar procedures and Sacro-iliac techniques*. After the demonstration, the participants paired off and worked on each other.

Cervical Procedures consisted of the application of some general massage to the cervical and upper thoracic spine areas.

Particular attention was given to:

- ◇ Flicking the facial anchor at the superior spine of the scapulae of Trapezius, supraspinatus and levator scapulae.
- ◇ Cross frictioning the joint capsular ligaments near the acromio-clavicular joints.
- ◇ Cross frictioning the tendinous fibres and apply pressure to the superior cervical musculature at the insertions into the Occipital bone. A special note is to be given to any inflammation that may suggest Cervical Lymphatic congestion.
- ◇ Applying deep pressure techniques to the supraspinatus and levator scapulae.
- ◇ Kneading the trapezius and supraspinatus muscles.
- ◇ Applying the "Stair-Stepping" manoeuvre on the cervical spine. This involved moving forward and backward over the segments with care while feel for restrictions or "jerkiness".



Workshop attendees trying out the new techniques.

General massage continued with the application of passive movement through the mid-range. Particular attention was given to:

- ◇ Taking the weight of the client's head in both hands and gently moving the cervical spine through flexion, extension, lateral flexion and rotation.

Lumbar Procedures and Sacro-iliac Techniques consisted of the application of some general massage to the lumbar spine area and the employment of **Block Techniques** involving the use of a foam wedge or a rolled up towel. Particular attention was given to:

- ◇ Placing a wedge/towel under the thigh of the leg with external rotation.
- ◇ Placing a wedge/towel under the ASIS of the other leg.

General massage continued focusing on work around the lumbar sacral area.

During a **Periformis release** the blocks must be removed. To perform Periformis release first make a visual analysis. The foot will be turned out on the side of the periformis spasm. Check the leg length at the medial malleolus. To treat:

- ◇ Bring the bent leg and thigh up and a notice a divot appear at the periformis. To treat:
- ◇ Bring the bent leg in medially then apply pressure to the periformis while rotating laterally.



A **Psoas test** is performed when the client goes into prayer position and their bent arms are pulled above their head while rotating then brought back to prayer position. Psoas is usually contracting on the shortened side (the fingers of one hand slip downward). To treat:

- ◇ With their leg bent apply pressure off ASIS into the belly of iliacus and slowly let the leg straight and down.
- ◇ Perform a "Hip Lift".
- ◇ Pull the illium into posterior rotation while holding the pares process down.

Deep in the moment.....Past President Ray Louden working with a very relaxed Ian Hannam.

The workshop completed with a general **Q&A session**, highlights include:

- ◇ L5/S1 is involved in true sciatica and involves pain going down the back of the leg.
- ◇ L4 is the femoral nerve and involves pain going down the front of the leg.
- ◇ L4/L5 is the femoral cutaneous nerve and involves pain going down the side of the leg.
- ◇ A pop is a combination of oxygen and nitrogen causing a bubble to "pop" within the synovial fluid. This will not occur for about 20min after there has been a reabsorption of gases into the tissues. This is a release or separation. Doing this does not cause arthritis "Its OK as long as it doesn't hurt" overdoing this may cause loosening of the ligaments.