

FOUR LEG NEWS

MAY – JUNE 2014

VOLUME 3, ISSUE 3

HI EVERYONE!

I am delighted to present this edition of FourLeg News! A while back, I sent a call out asking for your clinical tidbits regarding Manual Therapy. And you came through! So this edition is all about manual therapy... your findings, your techniques, and your feedback.

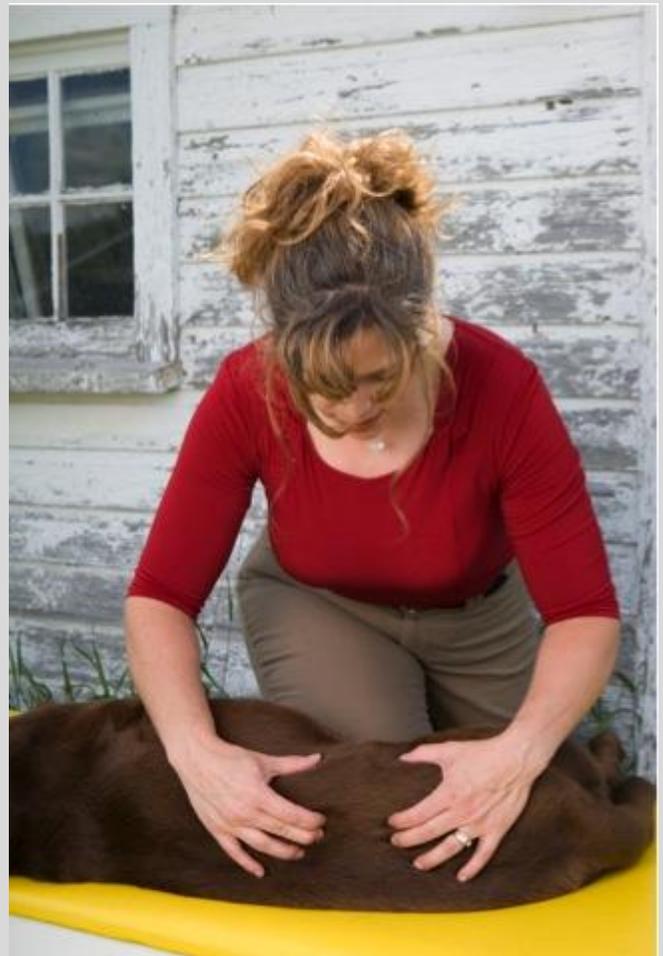
Manual therapy is an integral part of rehab. Using manual techniques (and deductive reasoning) for assessment has been proven to find issues that are not identifiable by radiograph. Manual therapy for joint dysfunctions can have a dramatic influence on lameness, pain, and dysfunctions of movement. As well, manual therapy techniques can identify and address lesions in muscle, such as fascial restrictions, trigger points, or strains.

As a rehab practitioner, you will likely have a baseline of manual skills... so this newsletter will give you some food for thought and perhaps some inspiration to try something new or even invent a technique of your own. And if you do... please share it!

Enjoy the learning!

Cheers,

Laurie



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MANUAL THERAPY SUGGESTIONS

TECHNIQUE FOR EVALUATING THORACIC SPINE DISC LESIONS

BY LAURIE EDGE HUGHES

This is a technique that I learned about by reading the textbook, *The Thorax, An Integrated Approach*, by Diane Lee. I set out to test it on dogs to see if it would work. Low and behold I believe it does! And furthermore, I think there are a lot of thoracic discs that are being missed because nobody is looking for them!

Before there was the DNA test for degenerative myelopathy (DM), research had identified that some dogs with 'presumed' DM had thoracic disc protrusions. So... how does a thoracic disc present? Clinically, much like a DM dog!



Disc Shearing: for vertebral segments T3/4 to T10/11 and their associated ribs. Compress one rib (i.e. left rib 6) (from the lateral side or dorsolateral side) and glide the contralateral rib just above (right rib 5) PURELY medially in the transverse plane. NORMALLY, there should be little/if any movement. The primary structure being tested is the disc! Test both combinations of the segment and assess for pain. A non-painful disc will not have pain with this test, but a painful disc will be quite reactive!

Adaptation: for vertebral segments T1/2 – T3/4 and their associated ribs. Slide your thumbs into the dogs axilla (thumb pointing up – dorsally, and fingertips pointing down – ventrally). With the length of your thumb (not just the tip) line up with two ribs (i.e. Rib 1 and rib 2 respectively), and push medially. This will create the same shear as described above.

Treatment? In addition to modalities (laser & acupuncture in particular), I will use this technique as a way to create a stimulus in the area in order to increase blood flow. Naturally, one could only push on the ribs within the dogs pain tolerance, and 'more is NOT better'.

In conclusion, this technique is well worth adding to your repertoire of manual assessment (and treatment) techniques.

References:

1. Jones JC, Inzana KD, Rossmeisl JH, et al. CT myelography of the thoraco-lumbar spine in 8 dogs with degenerative myelopathy. *J Vet Sci* 2005, 6(4): 341 – 348.
2. Lee D. *The Thorax, An Integrated Approach*. Diane G Lee Physiotherapist Corporation, White Rock, BC, Canada, 2003.

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END FEELS BY TARA EDWARDS

Hey Laurie,

I thought I would share this case!

A 7 year old Airedale Terrier presented with a 1 year history of on/off lameness. The dog was evaluated by a surgeon and underwent an arthroscopy which found a partial ACL tear. A TPLO was performed.

Post operatively the dog did not do well. I saw him at 6 weeks post-surgery for an opinion. On quick evaluation I felt that he was still really painful in his stifle. The dog went for an ultrasound because of the effusion and potential irritation at the long digital extensor tendon due to the pin at / near that location. Subsequently, the dog went for a CT scan and pin removal as well.

I saw the dog again at the 10-week mark from original TPLO. He was painful everywhere and extremely over-reactive in his stifle, quads, hamstrings, and iliocostalis lumborum due to 10 weeks of being non weight bearing. After 2 weeks of better pain medication and rehabilitation I was able to quiet down the discomfort and really isolate the pain to the stifle. The dog had an open / empty end feel beyond 55 degrees of flexion. What is weird is that I could compress his joint with no reaction in ranges from 55-150 and I could do glides (tibial thrust) in the same range without any discomfort.

The dog had repeat arthroscopy for further intra-articular evaluation. There were no meniscal issues but the synovium was found to be abnormal. Biopsy recently came back as a synovial cell tumor.

Crazy but weird case.

Tara

Tara Edwards, DVM
Certified Veterinary Pain Practitioner
Certified Canine Rehabilitation Therapist
Diplomate of the American College of Veterinary Sports Medicine and Rehabilitation

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DIAPHRAGM RELEASE BY SILVIA LAVALLEE

Background:

Abdominal fascia has 3 layers. The Superficial lies under the skin and is continuous with pectoral fascia above, and external obliques below which then joins fascia lata of thigh. It is fixed at the linea alba external aponeurosis, and inguinal ligament.

The middle layer is made up of all abdominal muscles which are encased in fascia. Cranially the transverse fascia covers the abdominal surface of the diaphragm, peritoneum, linea alba, then continues as a layer on quadratus lumborum and psoas. Caudally it joins fascia of iliacus.

The deep layer lies internally on lumbar spine and psoas, perineum. It extends onto nerve bundles, lumbar plexus, aorta, inferior vena cava, cisterna chyli, kidneys, adrenal gland, spermatic cord etc.



I have the dog on their side and I sit along their spine. I work using the flat of my little finger/palm with the palm facing up. Place and wait and gently follow the breathing in under the ribs [Editor's note: Place the side of your hand along the lowermost edge of the ribcage and moving into the space created, under the ribs as the dog exhales].

Rather than thinking of stretching think of supporting the diaphragm as it lifts up. You can do some rib mobilizations in this position on the true ribs. Moving your palm a little you can use the side of your fingers to work the rectus abdominus which, for example, is often very tight following spay surgery. By cupping the lower ribs you can get into the transverse fascia and close to iliopsoas fascia.

The front line [The ventral aspect] gets very tight with problems related to shortened stride, for example, patella, ACL, hip, iliopsoas and back issues. Just lengthening this fascia results in tremendous realignment of posture and dogs love it.

Silvia Lavallee, BMR

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IMPROVING YOUR DOGS TRACKING BY DENISE M. TESTA

No, I'm not referring to the canine sport of sniffing but instead to a term used in human massage for yoga and athletic clients.

The majority of strokes performed during a massage move parallel to muscle fibers to first relax and then elongate tight tissue. This in turn improves posture and movement. However, these strokes don't straighten muscles that are twisted or pulled out of alignment. These muscles don't "*track*" in the direction they are intended to contract, creating stress and excess wear and tear on the large joints such as shoulders, elbows, hips, and knees.

We often see human athletes using high-end tape (Kinesio Tape) over joints to pull muscles into alignment so that those joints move properly and the involved muscles track. You can use this same thinking to develop a massage technique for your canine patients.

Although I routinely use this technique on a variety of dogs, where it really has made a difference are my "tripod" patients. The remaining limbs have a tendency to get pulled more out of alignment than the hardest working of the athletic dogs I've massaged.

Here's what I do to create better alignment and joint tracking:

Instead of massaging to lengthen soft tissue, consider "rolling" muscles to realign them into a more freely moving position. To get a better idea of how this feels, try this on either your dog's biceps or triceps (long head) muscle.

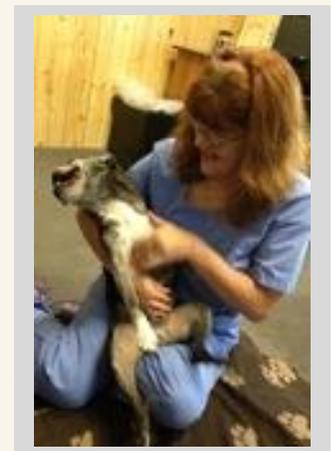
Slowly rotate (roll from left to right) the muscle around the long axis of the humerus. The key is steady, slow pressure rather than trying to use too much effort. And be careful to rotate only the soft tissue, not the bone.

You should find this muscle easier to rotate when on a bias. And you may note a feeling of being "stuck" in certain areas (kind of like where "the Velcro is catching").

As you slowly roll the muscle completely to its end range of restriction, make sure to wait patiently for any adhesions to melt and relax. At times, depending on the size of the muscle and how much the fibers are out of alignment, it can be upwards to a minute.

If needed, you can re-roll the same muscle but be careful not to overwork the area. If I find a really "stubborn" spot, I move on to a different part of the dog's body and then return later.

Denise M. Testa, LVT, CCRP, CMT



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DISTRACTION TECHNIQUE FOR PRESUMED STIFLE MENISCAL INJURIES BY KRISTIN LUGINBILL

I used a technique you taught me to distract and rotate the stifle on a dog with acute on chronic stifle instability and pain. I knew there was a cruciate tear and thought the dog had a meniscal injury. Right after I used the distraction technique the dog walked better and has been doing really well ever since!

I know the surgeons here would not believe that I had any effect on the meniscus, not yet anyway. They are coming around!

CRANIAL SLIP SIJ TREATMENT BY DAVID LANE

I was trained in chiropractic techniques before learning mobilizations, so manipulations are usually my first line treatment for sacroiliac joint issues, especially posterior-inferior presentations where one ilial wing is dorsally displaced relative to the other. I have found that manipulations for an anterior-superior or ventrally displaced ilial wing can sometimes be uncomfortable for the patient and that manipulations are not at all effective for a cranial slip where one ilial wing is cranially displaced relative to the other.

I've spend some time trying different options, one technique at a time, then going back and re-palpating, switching between techniques or combinations of techniques, and this is what I found:

For a cranial slip, the single most useful technique is gently stretching the sacrotuberous ligament. Place a thumb on each the 4 and 8 o'clock perianal position and GENTLY applying pressure perpendicular to the tight band that you feel. Use the same consideration and slow even technique that you would want someone else to use if they were stretching your perianal region. You may need someone to keep a hand under the dog's belly to prevent them from sitting.

After 10-20 seconds of stretching, I switch to glides, compressions, and distractions of the affected sacroiliac joint. I then look to see what abnormalities remain in the associated musculature. L5-7 lesions on the same side as the affected sacroiliac joint, tight hamstrings and iliopsoas pain are common concurrent findings.

For anterior-superior /ventrally displaced ilial wings, I find glides to be better tolerated than manipulations and equally effective

David Lane DVM



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TRADITIONAL MECHANISTIC PARADIGM

Objective

In this article, Wellens discusses manual therapy as a treatment for painful musculoskeletal conditions, comparing the biomechanical model with a more recent neurophysiological mechanism, suggesting that the neurophysiological model may better describe the effects of manual therapy on pain.

Biomechanical Model

This model proposes that joint hypo/hypermobility, postural changes and muscle weakness put strain on tissues which over time results in tissues becoming damaged and functioning sub optimally, leading to the development of painful musculoskeletal conditions. Manual therapy locates dysfunctioning tissues and treats using, for example, mobilisations, stabilisation exercises and postural corrections to restore tissue length and joint function, thus resolving pain.

Several shortcomings and assumptions with this model are cited, including:

1. Treatment is based on palpation and observation resulting in questionable reliability and validity.
2. There is no consistent evidence in the literature of lasting effects following manual therapy. Most effects appear transient with the forces applied being of insufficient magnitude to provide lasting change.
3. Treatment is based on the specific findings of the patient assessment, meaning that manual treatments applied specifically to the dysfunctional area would be more effective than therapy applied more generally. Current literature does not appear to support this assumption.
4. The model does not consider either the complexity or the psycho-social nature of pain.

5. Posture and work related activities are viewed as causal factors of painful conditions, increasing the load on specific tissues and thus cause tissue damage and/or pain. Again, evidence is lacking to support this hypothesis.

The author acknowledges that some sub-acute musculoskeletal conditions will benefit from biomechanical manual therapy but contends that when shortcomings and assumptions of the model are challenged, results are often criticized or unanswered.

Neurophysiological model

A neurophysiological model of pain is proposed as a means to bring together treatment options (e.g. biomechanical model, NSAIDS, acupuncture) which provide positive effects on pain while proposing differing rationales for effectiveness.

Evidence is increasing showing the presence of neurophysiological effects following manual therapy. Literature has shown that humoral, chemical, physical, social and behavioural elements all contribute to the experience of pain. Different factors e.g. stress, memories, and emotions influence how the brain interprets any given stimuli, the brain's output of pain being based on the interaction and perceived threats of these elements in addition to nociceptive inputs. As a result the same nociceptive stimulus may result in very different responses by the brain from person to person and situation to situation.

Mechanically based models for the treatment of pain are viewed by the author as flawed, making unproven assumptions which should be questioned. Wellens believes that current education omits discussions of these shortcomings and does not reflect current pain science knowledge. He suggests that colleges and universities place more emphasis on pain neurophysiology, providing students and practitioners an alternative explanation to the biomechanical model for what they see clinically.

Wellens F, B.Sc., pht, RCAMPT. The traditional mechanistic paradigm in the teaching and practice of manual therapy : Time for a reality check. www.physioaxis.ca

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DID YOU KNOW ...

- Greyhounds are the fastest dogs on earth, able to reach speeds of up to 45 mph (72 km/hr).
- Whippets, a sighthound similar to the Greyhound, can reach a maximum speed of 35 mph (56 km/hr).
- An average of 10 000 calories are burned daily by a sled dog running in Alaska's annual Iditarod race.
- The USA and France have the most pet dogs per capita - almost one in three families owns a dog, Germany and Switzerland are the two countries with the least amount of dogs, with one dog for every ten families.



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Four Leg Rehab Inc

PO Box 1581,
Cochrane, AB T4C 1B5
Canada

Laurie@FourLeg.com