

SPRING
2013

NEWS
LETTER

Canada's most experienced Canine Rehab Facility!



Not all 'rehab' is equal... see why the Canine Fitness Centre excels!

Another vet expounds upon her learning at The Canine Fitness Centre!

Dear Laurie and Amalia,

Thank you so much for the opportunity to learn more about rehabilitation. During the week I shadowed you and your staff I really noticed the caring and compassion you all showed your patients and clients. The professionalism of your reception staff, the underwater

treadmill assistants and your physios was excellent.

To all the physios: thank you for your patience while I fumbled to do what you do so easily and with incredible skill. The people utilizing your services are indeed fortunate to have access to such a team. The modalities available, the diagnostic abilities, your boot camp and follow up programs, the manual therapies are all top notch.

Lastly thank you to the clients that allowed me to observe and at times try various techniques with your best friends. It was a privilege to meet you and learn from your furry kids. May we meet again sometime.

With much appreciation,

Ann Vander Hooft DVM
Moosejaw, SK

We encourage you to share this newsletter with colleagues and staff!

Want to learn more about what we do?
Check out our informative video on the home page of our website: www.caninefitness.com.

Do you have a question for us?

- Want to discuss a case?
- Curious about therapeutic options?
- Want to know about our assessment techniques?

Just give us a call or send an e-mail, and we'd be happy to talk to you!

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Joaquim JGF, Luna SPL, Brondani JT, et al. Comparison of decompressive surgery, electroacupuncture, and decompressive surgery followed by electroacupuncture for the treatment of dogs with intervertebral disk disease with long-standing severe neurologic deficits. *J Am Vet Med Assoc* 236 (11): 1225 – 1229, 2010.

Purpose: To compare the effects of surgery, electroacupuncture plus surgery, and electroacupuncture alone for thoracolumbar intervertebral disc disease in dog with severe neurological deficits of greater than 48 hours duration.

Subjects: 40 dogs, between 3 & 6 years of age, weighing 22 – 44lbs.

Methods: Dogs were scored from 1 to 5 based on the severity of their neurologic signs, and were all classified as a grade 4 (non-ambulatory paraparesis with deficits of proprioception but intact deep pain perception) or a grade 5 (paraplegia and no deep pain perception, plus bladder dysfunction). All dogs were administered prednisone for 7 days (with appropriate dosing and weaning). 10 Dogs had decompressive surgery. 11 dogs had decompressive surgery and electroacupuncture. 19 dogs had electroacupuncture alone.

Acupuncture points used: Bladder 18, 24, & 40; Kidney 3; Gallbladder 34; & Stomach 36. The electrical current (utilizing 2 Hz and 15Hz frequency with the amplitude turned up until muscle twitching was observed) was connected on both sides to BL 18 & 23 (same side connected) and ST 36 & GB 34 (same side connected), and was administered once a week for 1

– 6 months. Treatment was discontinued when animals were classified as grade 1 or 2 IVDD score. The median number of acupuncture sessions for dogs that had surgery and electroacupuncture was 11, and for the electroacupuncture-only group, it was 5.

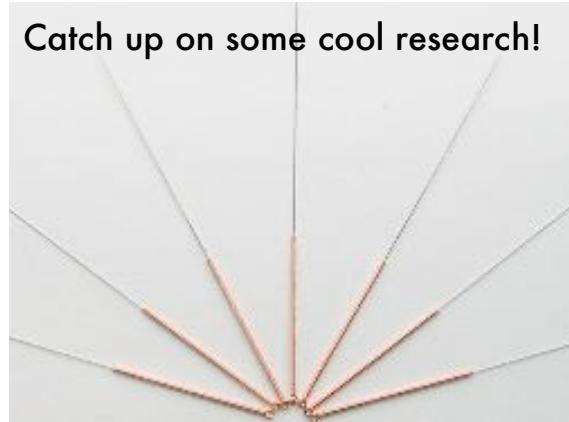
Results: Dogs were followed up at 6 months post surgery or post initial acupuncture treatment.

In regards to regaining of deep pain perception (DPP): none of the dogs without DPP regained it with surgical decompression ($n=6$); 5 out of 8 dogs without DPP in the surgery plus electroacupuncture group regained sensation; and 6 out of 10 dogs without DDP in the electroacupuncture-only group regained deep pain perception.

When evaluating neurologic scores for each group 4/10 in the surgery group improved, the rest were unchanged; 8/11 of the surgery + electroacupuncture group improved; and 15/19 in the electroacupuncture group improved.

Interesting note: In this study, the dogs that were diagnosed by MRI to have IVDD, there was no association between grade of compression and neurologic signs.

Catch up on some cool research!



Conclusions: development of When surgery cannot

be performed within 48 hours after loss of deep pain perception or when surgery is not successful, electroacupuncture alone might be a good option for conservative treatment of dogs with IVDD and neurologic scores of grade 4 or 5.

Clinical Relevance:

This study amazes me! Perhaps all IVDD dogs should get electroacupuncture, and if you don't do acupuncture... then you can use non-needling techniques. But I really think that this study can go further and be extrapolated with many rehab modalities

and some of our gentle manual therapies, where the goal for the selected therapy is to reduce inflammation and promote healing.

Modulation of the immunologic and inflammatory response in the spinal cord is a possible mechanism of action for acupuncture because inflammation appears to be more important than is compression for the

Useless knowledge:

The expression “three dog night” originated with the Australian Aborigines and means a cold night; so cold that you have to bed down with three dogs to keep warm.



Surgery out of the question?

Not all neurologic dogs are surgical candidates!

Sometimes for financial reasons, age, health or breed of the animal, or owner beliefs, surgical decompression is not an option for a neurological dog. Here's where the Canine Fitness Centre can help.

1. A pathofunctional assessment - evaluating the spine, neurologic signs, and functional abilities of the animal.
2. Neuromuscular rehab: the cornerstone of regaining function. Practicing functional tasks & capitalizing on newly gained function.
3. Laser, pulsed electromagnetic field, acupuncture or laser acupuncture, TENS for pain.
4. An option other than euthanasia.

According to the Guinness Book of World Records, the smallest dog on record was a Yorkshire Terrier in Great Britain that, at the age of two, weighed just 4 ounces (113g).

Draper WE, Schubert TA, Clemons RM, Miles SA. (2012) Low-level laser therapy reduces time to ambulation in dogs after hemilaminectomy: a preliminary study. J Sm Anim Pract 43: 465 – 469.

Study: 36 dogs with acute paraparesis / paraplegia due to acute intervertebral disk herniation were evaluated and assigned to the control group or the laser treatment group based on alternating order of presentation. All dogs were assessed and given a modified Frankel score (MFS). To be included in the study the dogs had to meet the following criteria: clinical signs for less than five days, neurological exam findings consistent with a T3-L3 myelopathy (confirmed by advanced imaging), an MFS of 0 to 3 and a complete diagnostic regimen with appropriate treatment approved by the owner. Surgical decompression was accomplished via hemilaminectomy ± pediculectomy.

Laser Specifications: LLLT was performed using a laser array with five 200-mW 810-nm-wavelength lasers [LX2 Control Unit+Laser Cluster Probe, wavelength=810 nm, power=1 W ($5\text{A} \sim 200$ mW), THOR Photomedicine Ltd, London, UK]. The laser was applied transcutaneously over the spinal segment associated with the hemilaminectomy and the two adjacent ones (one cranial and one caudal). The laser array was applied to each area for 1 minute, delivering 25,000 mW/cm² to the overlying skin per day for five days. (Note: the authors reported that this dosaging delivered an approximate energy density (2 to 8 J/cm²) to the spinal cord. Using the calculation that 1J = 1Watt x 1 second – the surface dosaging would be 12J per diode-point.)

The Modified Frankel Score: The MFS is defined as spinal hyperesthesia only (grade 5), ambulatory with paraparesis and/or ataxia (grade 4), non-ambulatory paraparesis (grade 3), paraplegia with entire superficial nociception in the pelvic limbs (grade 2), paraplegia with entire deep nociception in the pelvic limbs (grade 1) and paraplegia with absent nociception in pelvic limbs (grade 0).

Results: The time to achieve a modified Frankel score of 4 was significantly lower ($P=0.0016$) in the low-level laser therapy group (median 3.5 days) than the control group (median 14 days). 34 of the 35 dogs in the study achieved a MFS of 4 (only one dog in the non-treatment group did not attain a MFS of 4).

Clinical Relevance:

This study is very promising! The way I see it, not only has laser been shown to be of benefit post-operatively following an acute intervertebral disc herniation, but it may have the potential to benefit non-operative dogs as well. Bottom line: Laser those disc dogs!

Useless knowledge →

The most dogs ever owned by one person were the 5000 Mastiffs kept by Kublai Khan, the grandson of Genghis Khan.

Henke D, Gorga D, Flegel T, et al. Magnetic resonance imaging findings in dogs with traumatic intervertebral disk extrusion with or without spinal cord compression: 31 cases (2006 – 2010). J Am Vet Med 242(2): 217 – 222, 2013

Purpose: To determine the prevalence of spinal cord compression subsequent to traumatic intervertebral disc extrusion.

Subjects: 31 dogs with clinical signs and history of traumatic intervertebral disc extrusion.

Method: Medical records were reviewed for dogs that had a history of trauma to the spinal region. Trauma was defined as an acute onset of neurologic signs localized to the spinal region immediately after the dog was observed to have a sudden violent impact. MRI was conducted within 10 days of the trauma.

NOTE: All dogs were hospitalized and in addition to conventional analgesic care, were also provided physiotherapy that consisted of massage, passive ROM, stretching, & coordination training three times a day, as well, magnetic field therapy administered twice a day, on the day following admission / surgery. Underwater treadmill training or swimming (10 minutes, twice daily) begin the 2nd day after hospital admission or surgery. Dogs were

discharged from the hospital when their condition stabilized and they were ambulatory.

Findings (of the MRI): Traumatic intervertebral extrusion with concurrent spinal cord compression was identified in 9 (29%) of the 31 dogs. Traumatic intervertebral extrusion without concurrent spinal cord compression was identified in the remaining 22 dogs (71%). Of the 7 of the 9 dogs that had spinal cord compression, and 7 of the 22 that did not have cord compression had evidence of generalized intervertebral disc degeneration. The dogs that had cord compression were significantly older and more likely to be chondrolystrophic and have generalized disc degeneration as compared to the dogs without cord compression.

Conclusions: The authors concluded that the presence of spinal cord compression subsequent to intervertebral disc extrusion might be dependent on the physicochemical composition of the extruded material. The cord compression results only when the traumatically extruded nucleus pulposus material (which normally consists of mostly water), is unable to diffuse into the epidural fat as it would in normal circumstances.

Clinical Relevance:

Wow! So, if 71% of these dogs didn't have compression, and the goal of surgery is to reduce compression on the spinal cord... is surgery needed in as many dogs as are receiving it?



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