



TREATING THORACIC DISEASE

E A LOOK AT HOW HYPERBARIC OXYGEN THERAPY AND OTHER INTEGRATIVE MODALITIES CAN ALLEVIATE THORACIC PROBLEMS. — P. 38

LASERS IN CANINE PHYSICAL REHABILITATION

Whether your use a Class III or Class IV laser, proper training in its use is essential, for technicians as well as doctors. -P. 22

KENNEL COUGH AND OTHER TRACHEAL PROBLEMS

Vaccination doesn't guarantee protection, but homeopathy and TCVM can help treat and even prevent these conditions. – P. 42

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NAMBUDIPRAD'S ALLERGY ELIMINATION TECHNIQUE

NAET combines techniques from acupuncture, kinesiology and other therapies to pinpoint the allergens individual patients react to. – P. 28

WHAT'S NEW

- Animal simulators change the way veterinary medicine is taught
- Lameness is top health issue in horses
- Detection dogs trained to sniff out ovarian cancer







IVC tech talk

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LASERS IN CANINE PHYSICAL REHABILITATION

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BOTH CLASS III AND CLASS IV LASERS HAVE IMPORTANT APPLICATIONS IN PHYSICAL REHAB FOR DOGS, BUT PROPER TRAINING IN THE USE OF THIS THERAPY IS ESSENTIAL, BOTH FOR VETERINARIANS AND TECHNICIANS.

My personal experience with lasers in veterinary physical rehabilitation began in 2005 with a 250mW laser used in my mobile rehab practice. At the time, any laser from 5mW to 500mW was considered Class III and was often referred to as a "cold laser" because it could be held in one spot during treatment and not heat the tissues enough to cause damage. Class IV was any laser producing more than 500mW of power. At this higher level, the laser heats the tissues and can cause damage if held in one area too long. It is important that anyone using the laser be properly trained in how to administer the therapy, and that they know animal anatomy.

INTRODUCING CLASS IV LASER TO MY CLINIC

In 2011, I moved to the Atlanta area and opened a large rehabilitation-only clinic. In this rehab-dedicated facility, I began seeing a larger and more diversified caseload than I had in my prior traveling practice. I was also able to take advantage of trained veterinary technicians and assistants to treat cases, a luxury I did not have previously. Hoping to speed treatment times and make my technicians more efficient, I purchased a Class IV laser. I quickly began to notice clear differences in case results as the Class IV laser was integrated into treatment plans. I noticed that patients who had been regulars, coming every four to six weeks with consistently good results, were showing great improvement with the Class IV laser.

Any laser therapy should be doctor prescribed but technician driven. There should always be good communication between the doctor and technician about what condition the doctor wants to treat, the reasons for the treatment (pain relief, improving circulation, decreasing inflammation, speeding up healing), the anatomic area(s) to treat (with landmarks clearly defined or previously discussed), as well as any special techniques or other conditions to be aware of for that particular patient. In this way, the technician can always update the doctor on any changes between "recheck examinations" that may require the doctor's attention. Empowering the technicians so they feel comfortable communicating any challenges they encounter is also critically important.

Following the recommendations of the laser company, we often treated patients two or three times per week for a total of six to eight treatments. Some of the improved outcomes I was seeing with the Class IV laser may have come from the increased dosing, as I had not been able to dose that way in

my travelling practice. Many practices use Class III lasers with good success as well. Proper diagnosis and dosing are the keys to effective treatment. Today, I use two Class IV lasers for treatment within the practice, and rent two Class III lasers to clients who need more intensive but usually more superficial daily dosing.

TREATMENT PLANS FOR DIFFERENT INJURIES AND CONDITIONS

Typically, at our clinic, we see approximately 30% orthopedic (post-op CCL repairs, Fx repairs, osteoarthritis), 30% geriatric (osteoarthritis, soft tissue strains and sprains, back pain, weakness), 30% neurologic (DM, IVDD, FCE, etc), and10% sports medicine (maintenance for competition in healthy dogs, soft tissue sprains and strains). If we think about the goals of physical rehabilitation, every one of these cases could benefit from laser.

Below, I describe the typical treatment for each type of case. It is important to note that every case is different, and managing and changing the plan along the way based on results is important. Physical rehabilitation should not be a cookbook type of medicine in which every case with the same general problem gets the same treatment. Every patient will progress differently.

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POST-OP

If the incision is still healing, laser with a wound setting directly over the incision. Then laser over the area of surgery two or three times a week for a total of six to eight sessions, making sure to reassess at least every two or three weeks. Often, we need to continue the laser over a surgical area if the patient is still having pain or is healing slowly. As these cases heal, we also sometimes find that they have other areas of pain due to compensations (back pain, hip pain, pain in the other limbs). These areas can also be lasered once or multiple times if needed.

OSTEOARTHRITIS

We start with two or three times a week for six to eight sessions and then find a maintenance plan. We are seeing most dogs every four to six weeks for a recheck during which we may do acupuncture and/or chiropractic; typically, the laser will also be part of that exam. In some cases, patients will also come in between rechecks for a laser-only session with a trained technician, so they are getting lasered every two or three weeks for maintenance.

Importantly, the technician has more "face time" with the client when administering the therapy. This is advantageous because it provides the client with time to share details about the animal's progress or changes observed at home, and to ask questions in a relaxed and unrushed environment. The technician can educate the client on the modality itself, or address other questions or concerns about the treatment plan.



GOALS OF PHYSICAL REHAB AND HOW THEY RELATE TO LASER TREATMENT

We need to remember the goals of any veterinary physical rehabilitation case:

- Increase range of motion (ROM)
- Decrease pain
- Increase strength and mobility
- Improve proprioception

Technicians can be easily trained to evaluate these goals, along with questioning the clients on how their animals act at home.

For instance, a bicep tenosynovitis and a medial shoulder instability will both look like front limb lameness but are treated with different laser protocols and positions. Importantly, the laser alone does not define veterinary physical rehabilitation. Laser is only one aspect of the multi-modal approach required to truly offer veterinary physical rehabilitation.

There has been quite a bit of literature over the past 20 years about lasers and their effects on the human and animal model, with the most literature being published in the past five years. We know that lasers reduce COX-2 mRNA expression, therefore reducing pain and inflammation.¹ We also know that lasers promote increased circulation.^{2,3} There have been several studies showing cell regeneration including neurons.^{4,5,6}

All these aspects are important in the goals of physical rehabilitation but they do not accomplish everything. We still must put the joints through ROM and work on strengthening and proprioception through therapeutic exercises. Laser will help us reach these goals, but laser alone will not accomplish it.

They both feel as though they are part of the "team" in caring for the patient. Having the opportunity to communicate and educate owners in this environment is unique; and allowing owners to see that their pets are calm and relaxed, and often fall asleep during therapy, reassures them that the treatment is not stressful.

SPRAINS AND STRAINS

5 One of the most common and difficult-to-address issues we see in this category is the iliopsoas strain. Those affected can be sport competition dogs, active pet dogs, any patient that slips on ice or hardwood floors, or hip dysplasia patients with or without OA. Patients with hind limb pain should always be assessed by the veterinarian for iliopsoas pain, both at the insertion and origin of the muscle. Suspected muscle or tendon strains can be confirmed with musculoskeletal ultrasound. Once confirmed, we typically



have our technicians laser one to three times a week, following the entire length of the muscle as well as the dorsal lumbar and sacroiliac joints (SIJs), until the veterinarian finds no more pain when palpating in this area during assessments every two to three weeks.

In addition, we have the patients spend several weeks in an active rest mode. They are allowed short (ten to 15-minute) walks two to four times a days. We do not stretch the muscle at first. We give it time to repair. Chiropractic or joint mobilizations around the SIJ, as well as acupuncture, are also imperative to healing. Soft tissue can take longer than bone to heal, so it is important to discuss with the owner that the process may take four to six months, or may even become a chronic waxing and waning situation, as is often seen in cases of severe OA and hip dysplasia. Once the patient is mostly healed, we will start back with UWTM, light stretching and later strengthening to finish off the process and help prevent a recurrence of the injury.

NEUROLOGIC – DEGENERATIVE MYELOPATHY

In the literature and in our experience, the typical time from the first signs of DM until paralysis occurs is approximately one year, give or take three months.⁷ The only proven effect



TRAINING AND CORRECT USE ARE ESSENTIAL

One of the reasons I resisted the use of Class IV lasers is because I knew many of my colleagues were misusing them. They had been wooed into purchasing this new and exciting toy, but had not been properly trained nor correctly trained their staff in the use of Class IV lasers. Animals were getting burned in some cases, but more importantly, there were no proper diagnoses made. There would be a diagnosis of general lameness without specifically determining the problem, and the technician would be directed to laser an entire limb, something much more easily done with a Class IV than a Class III.

In some cases, this worked, but in many cases the core problem was not addressed. The patient might have needed a different area of focus or an additional treatment modality. A proper diagnosis, continued re-assessment, and correct application are the most important parts in utilizing this very powerful tool as part of the physical rehabilitation practice.

on DM has been intensive rehabilitation. In a study published in 2006, researchers using physical rehabilitation were able to extend survival time by as much as 200 days in dogs with DM, when compared to dogs who did not receive physical rehabilitation.⁸ There have been many anecdotal cases of herbs, supplements, and various other treatments that have helped, but no one has been able to show a consistent response that changes the long term outcome of paralysis in approximately one year.

We have had good success with electroacupuncture, herbs and intensive physical rehabilitation in improving the quality of life in dogs with DM, and possibly extending the length of time to paralysis to the end of the range. However, a study that is currently still underway has made some preliminary findings that are expected to be published soon: the study is looking at high dose laser (30J/cm2) two times a week on dogs with DM. This is approximately five to six times the typical laser dose for most conditions. So far, the researcher has seen more than 16 dogs continue to ambulate for two years and beyond. In this early study, the researcher is still continuing with regular intense rehabilitation. This is quite promising and we look forward to the published results.

NEUROLOGIC – IVDD AND FCE

Typically, we have been lasering directly over the area of spinal cord injury two or three times a week, as with any other post-op condition as described earlier. However, with the new information coming out about high dose laser in DM, one must wonder if we should be increasing our dosages to get into the spinal cord enough to make a more significant change. These cases often have areas of pain due to compensations and overuse. Therefore, we also laser over any areas of pain not at the site of injury in the spinal cord, as needed, up to two or three times a week.

Whether your practice has a Class III or Class IV laser, you have a very valuable tool at your fingertips. But it's only as good as the training you and the doctor have received in its use. There are many laser training programs available along with continuing education lectures at various conferences. Adverse

reactions with Class IV lasers are almost exclusively caused by improper use from a lack of training and/or understanding of the laser or animal anatomy. Used appropriately, Class IV lasers are safe and very effective.

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