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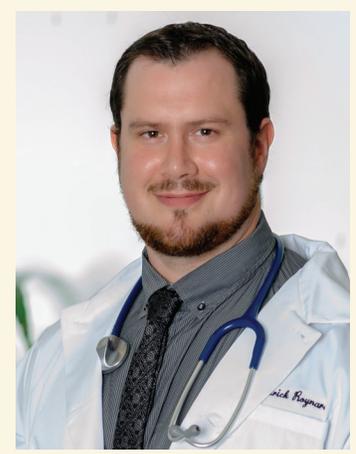
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Integrative Neurology: When the West Meets the East to Help You Walk Straight - Part III

Patrick Roynard DVM, MRCVS, DACVIM (Neurology/Neurosurgery)

This article is the conclusion of the article that was featured in the October and November 2017 issues of LIVS in PlainView.

- Cervical pain & cervical myelopathies (Figure 3)
 - » These conditions tend to be very responsive to acupuncture (specifically electro-acupuncture [EA]).
 - » Early and serial treatments are recommended for better outcomes (since neck pain can often relapse if treatment is discontinued too early/abruptly), while the patient is initially maintained at strict cage rest.
 - » Although the ideal recommendation remains as multiple treatments, cervical pain often has a pronounced response, as perceived by the caretakers, after just one EA treatment. It is interesting to note that acupuncture is not only helpful as an adjunct in conservative management, but also can be of tremendous help for post-operative analgesia and pain management in surgical cases (Figure 3). The overall discussion regarding the benefits of acupuncture for intervertebral disk herniation (IVDD) stands for cervical myelopathies, and 2 different clinical studies found that electro-acupuncture and herbal medicine can be beneficial in the management of cervical myelopathies (including “Wobblers”) and help functional recovery.



- » Many of the above mentioned IVDD herbal formulations can also be used in cases of cervical disorders.
- “Nerve root signature” and radiculopathies and neuropathic pain (Figure 4)
 - » Signs of direct nerve involvement (sometimes called “nerve root signature”, such as in foraminal disc herniation) is an excellent candidate for acupuncture, specifically EA.
 - » The nature of the pain encountered in cases of lateralized/foraminal IVDD with nerve root signature is unclear. The sharp, acute pain could be a true example of neuropathic pain, or a form of nociceptive pain due to involvement of the local nervi nervorum (a network of small nervous fibers, including noci-

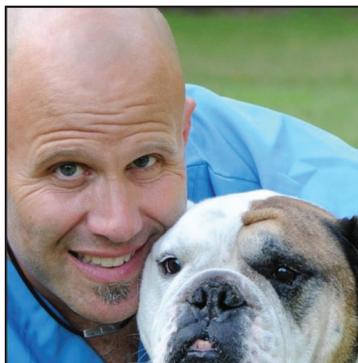
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LIVS is proud to welcome:



Michel Selmer, DVM, CTCVMP (Integrative Medicine)

Dr. Michel Selmer is an Integrative Veterinarian and one of only a handful of Traditional Chinese Veterinary Medicine Practitioners in the United States.

Dr. Michel Selmer attended Long Island University and graduated Cum Laude with a Bachelor of Arts Degree in Psychology. Following his undergraduate studies, he was admitted to Michigan State University School of Veterinary Medicine and earned his Doctorate of Veterinary Medicine in 1995. Following his Traditional Veterinary studies, he was admitted to the Chi Institute where he graduated with the top honor of being a Certified Traditional Chinese Veterinary Medicine Practitioner (CTCVMP).

Dr. Selmer is a published author and consults with other veterinarians as well as pet parents around the globe. In 2018, he made the exciting decision to join the Long Island Veterinary Specialists team as the Lead Veterinarian in their Integrative Medicine Department.

The passion Dr. Selmer has for his profession - and his love for all animals - has contributed to the high quality medicine that he practices.

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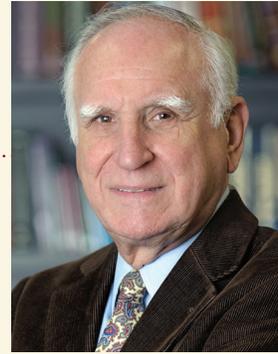
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Tui-na***

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A Note from the Editor



This new year of 2018 has commenced with intense cold weather, something not seen in over fifty years. LIVS has always remained open serving the veterinary community in spite of the freezing conditions. The year 2017 ended and 2018 started with a severe snowstorm along the Eastern seaboard from Canada down past the Carolinas, unique in the last few years and the sunny but single digit freezing weather demanded use of layered clothing, hats, gloves and scarves. Heated car seats and steering wheels felt more than cozy. Prudent owners kept their outdoor animals inside as the cold winds made the temperature seem well below zero at times, with single digit temperatures being commonplace.

The first issue of LIVS in PlainView arrived in January of 2008 with a unique new POTUS and this issue, at the beginning of our 10th year of publication, finds the nation still working on improving the status of the economy in the United States and bringing resolution to international conflicts, while maintaining peace. Ten years later, another unique individual inhabits the White House and all wonder what the status of the US in world affairs will be in another 10 years. Strong gains in the stock market took place 10 years ago and while record breaking increases are happening now, we are anxiously waiting for these gains to “trickle down” to those who actually perform the work that sustains our nation.

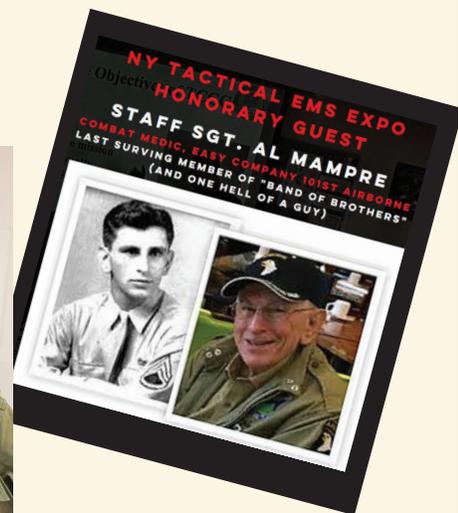
On January 6 and 7 of this year, Dr. Dominic Marino, LIVS's chief of staff presented a lecture and clinic on “Tactical Veterinary Medicine”, acute care of the injured law enforcement K-9” at the “Tactical Medicine Conference for police, fire and EMS responders” held at the Melville Hilton. The two day conference was attended by hundreds of first responders and military operators and was sponsored by the “Medicine in Bad Places” organization. An honored guest was Staff Sgt. Al Mampre, a WW II, 101st airborne combat medic for the famed “Easy Company”.

At LIVS we are pleased to continue the extended hours for consultation in all our departments to serve our clients more efficiently. Appointments can be made through our telephone receptionists at 516-501-1700.

We hope the New Year will bring to us, our loved ones, our families and pets the joys of life and a bright 2018.

Again, we welcome your comments e-mailed to lmarino@livs.org

Leonard J. Marino, MD, FAAP, LVT



Integrative Neurology: When the West Meets the East to Help You Walk Straight - Part III

► Continued from Front Cover

ceptive fibers, covering the periphery of larger nerves and that is likely to be damaged first in cases of lateralized disk herniation).

- » The nervi nervorum can be involved in development of long term neuropathic pain and electro-acupuncture, in conjunction with pharmacological treatment with medications such as Gabapentin/Pregabalin and Ketamine (by its antagonist action on receptors for glutamate), can help prevent this phenomenon (Figure 4).
- Neuropathic pain (other forms of)
 - » Primary injuries of the peripheral nervous system including:
 - Nerve root signature (see above)
 - Sciatica (such as in cases of lumbosacral disease)
 - Cases of self-mutilation or excoria-

tion due to peripheral neuropathies (e.g. brachial plexus injury)

- Obscure/nebulous pain syndromes (e.g. feline hyperesthesia disorder)
- » Given the refractory character of these cases to classical pain management methods (largely due to the different neurotransmitters/receptors and nervous pathways involved in neuropathic pain), acupuncture (specifically EA used early in the course of the disease) can be an effective modality for the management of neuropathic pain.
- » Effects can be noted by the decrease in self-inflicted damage observed after treatment, as the translation in the veterinary world of the improvement of tingling, burning or aching feeling reported in humans for various neuropathic pain conditions (e.g. trigeminal neuralgia, diabetic neuropathy, sciatica).

» In some types of neuropathic pain such as tactile allodynia (where a normally gentle stimulus is felt by the patient as unpleasant/painful), non-nociceptive nerve fibers such as $A\beta$, faster than the C and $A\delta$ traditionally associated with pain, become involved in the pain signal. The gait theory proposed by Melzack and Wall (1965), along with these changes in the function of nerve fibers, and with the ability of electro-acupuncture to recruit $A\alpha$ and $A\beta$ prior to $A\delta$ and C fibers, might be an explanation to the ability of acupuncture to relieve neuropathic pain. In more chronic cases with central nervous system neuropathic pain, remodeling of the dorsal horn of the spinal cord and higher centers of pain

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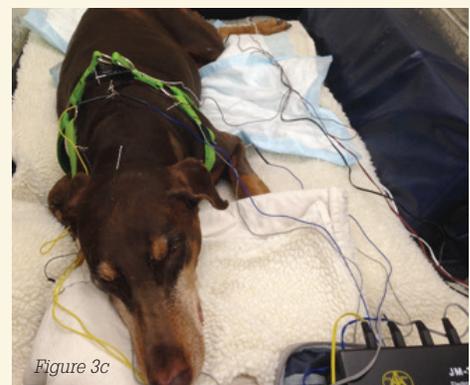
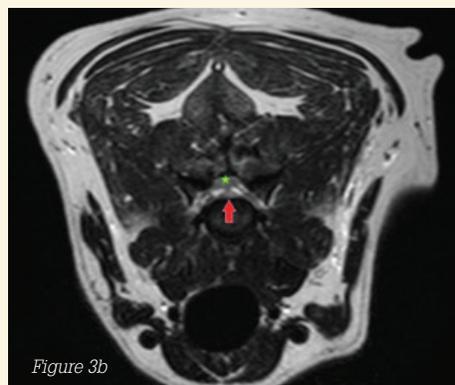
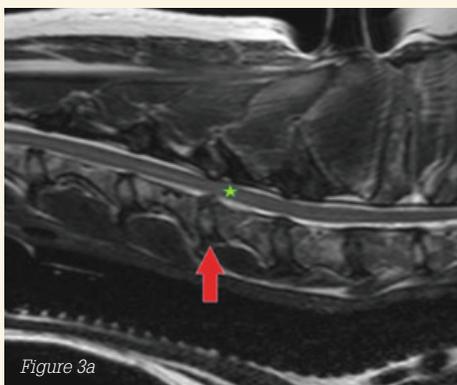


Figure 3: Sagittal (a) and Transverse (b) T2W MRI images of a 9 YO FS Doberman with disc associated cervical spondylomyelopathy or disc associated wobbler syndrome (DACSM/DAWS). The spinal cord (green star) is being displaced dorsally and compressed ventrodorsally by the intervertebral disc protrusion at C5-C6 (red arrow). The patient presented tetraplegic and recovered ambulatory status following surgical management with ventral slot at C5-C6, electro-acupuncture and herbs (including Double P II). (c) Patient receiving electroacupuncture in local (Jing-jia-ji, GV 14) and distal points (LI 11 and LI 4 in the thoracic limbs, Liver 3 in the pelvic limbs) during the post-operative recovery period. After any spinal neurosurgery, we consider the use of acupuncture in combination with standards analgesics (e.g. IV opioids) and other physical modalities (e.g. laser) to be standard of care.

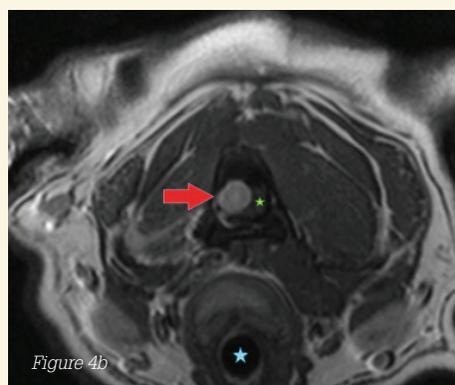
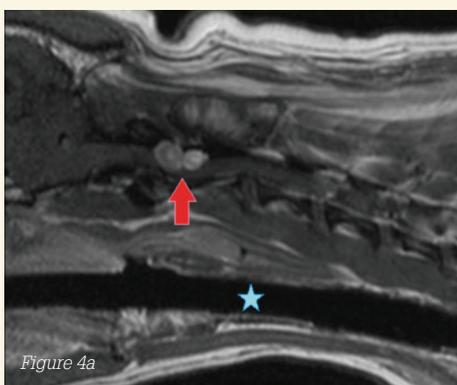


Figure 4: Sagittal (a) and Transverse (b) T1W post-contrast MRI images of an 8 YO FS English Bulldog with a Peripheral Nerve Sheath Tumor (PNST) of C2. The PNST is visible as a hyperintense lobulated mass (red arrow) invading the meninges and severely compressing the spinal cord (green star). The nearby trachea is identified (blue star). The tumor was surgically removed after dorsal laminectomy at C1-C2, durotomy and rhizotomy, and the patient recovered ambulatory status post-surgically. (c) Post-operative pain management of PNST and cases of rhizotomy can be challenging. The patient's level of pain was initially refractory to classical medical management with IV opioids. Judicious use of NMDA antagonists (here Ketamine IV bolus followed by a CRI) and acupuncture (here dry-needle of Jing-jia-ji points, GB 20 and GB 21) can be of tremendous help to relieve pain due to acute insult to the nervous system, and prevent "wind-up" and sensitization phenomenon.



Medical Oncology



Nicole Leibman, DVM,
MS, Dip. ACVIM, (Oncology)



Maria Camps, DVM,
Dip. ACVIM (SAIM, Oncology)



Charles Maitz,
DVM, PhD, DACVR
(Radiation Oncology
Consultant)

Treating common cancers such as:

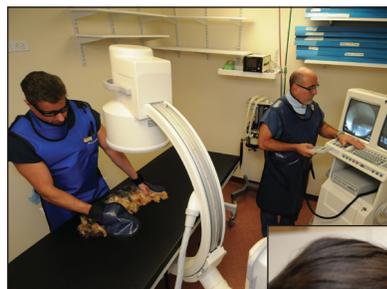
- Lymphoma
- Soft tissue sarcoma
- Mammary gland tumor
- Feline injection site sarcoma
- Mast cell tumor
- Osteosarcoma
- Melanoma
- Carcinoma

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- Clinical pathology

Types of radiation therapies include:

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- Systemic radiation: I-131



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Figure 5: 13 YO FS Maine Coon receiving electro-acupuncture treatment for paroxysmal episodes of flank-biting, tail flicking, lumbar paraspinal allodynia, hyperesthesia and hyperpathia. Diagnostics (CBC/Chemistry, thoracic radiographs, MRI of the brain and lumbar area, CSF analysis) were unremarkable and Feline Hyperesthesia Syndrome was suspected. Electro-acupuncture treatment was applied to local area points, with the addition of dry needle at Bai hui and GV-20. Acupuncture treatments, done every three to four weeks resulted in marked reduction of the episodes' frequency and severity, with return to a good quality of life.

processing (central sensitization) can result in lack of efficacy of acupuncture treatment.

- “Nebulopathies” (e.g. feline hyperesthesia disorder/syndrome, see **Figure 5**)
 - » When an actual physiological explanation to the signs observed by the owners is unknown, but paresthesia/dysesthesia/pain is suspected, acupuncture, for its relative safety, should be considered.
 - » In cases of regional allodynia, dysesthesia or hyperpathia (i.e. in cases where the stimulus produced by the placement of the needle(s) is expected to be painful) the area affected might be “surrounded” first, prior to narrowing the circle and getting in closer proximity during future treatments (“surround the dragon”, see **Figure 1 in Part 1 of this article**).
 - » Calming points located away from the lesion, and other techniques such as diffusers with Lavender essential oil in the area where the acupuncture session will be performed, can be used to render the animal more cooperative (see **Figure 5**).
 - » In association with acupuncture, pharmacological management with medications such as Gabapentin/Pregabalin +/- Amantadine usually helps control the clinical signs at home.
- Post-operative pain management
 - » Acupuncture targets local, segmental and central components of the pain

pathways and can help decrease wind-up or central sensitization, especially in surgeries that are expected to lead to chronic and/or excruciating pain (e.g. amputation, rhizotomy). For this reason, acupuncture treatment is usually recommended early in the course of the treatment.

- » Electro-acupuncture can be used, but modified protocols and frequencies are advised for each patient, based on the concurrent use of synthetic opioids.
- » A controlled, blinded study on 15 dogs receiving EA treatment after hemilaminectomy for TL IVDD, found that the dose of fentanyl required for pain management during the first 12 hours after surgery was significantly lower in the group receiving EA than in the control group. The Pain score was also significantly lower in the EA group than in the control group 36 hours after surgery. Another study concluded that the combination of EA with low dose morphine achieved better pain control post-operatively than either one did individually.
- » In addition, acupuncture can have strong orexigenic and anti-emetic effects, which in combination with its analgesic effects, make it the perfect modality to help a smooth recovery in the post-operative period. In the stressful environment of a veterinary hospital, acupuncture also often helps patients relax and sleep soundly, allowing here again a smoother recovery.

Conclusion

Acupuncture and herbs are relatively safe when practiced by skilled, accredited practitioners. They benefit the patient using numerous mechanisms that modulate different levels of the nervous system and pain pathway in painful conditions. Acupuncture has been extensively studied in experimental models of spinal cord injury and reduces glial scar formation, allowing for a better functional recovery. It is also valuable in the prevention of central sensitization (a common risk in most cases of nervous system injury in small animals), which can otherwise lead to chronic, excruciating and debilitating pain if left untreated. Its multi-faceted effects on the body make it an ideal therapy for most myelopathies in small animals, ideally as an adjunct to standard management. It is now becoming increasingly understood that a multi-modal approach to pain management (using both pharmaceutical and physical modalities such as acupuncture) is essential, as not all types of pain respond equally to the various therapeutic options available to the veterinary clinician. We make the same recommendation regarding a variety of neurological disorders. Acupuncture can also help ameliorate many of the side effects of commonly used anesthetic drugs, as it can be a potent anti-emetic and also stimulates the autonomic nervous system. Stringent training in veterinary acupuncture with appropriate patient, herbal recipe, points and acupuncture technique selection, along with combination with other modalities such as physical rehabilitation are imperative for an optimal response. □

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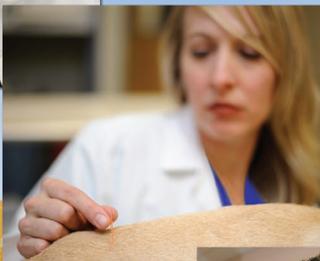
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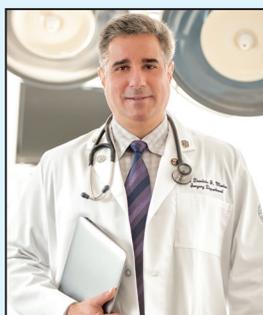
Surgical Oncology



Fernando Leyva,
DVM
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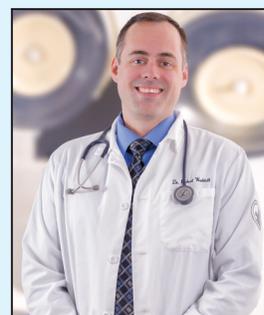
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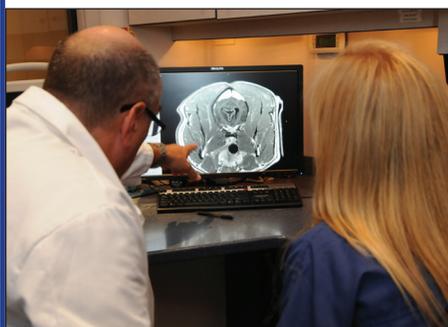


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Obesity and Canine Osteoarthritis

Heather Goodman, LVT, CCRP,

Department of Integrative Medicine and Rehabilitation

Obesity and osteoarthritis (OA) can have immense negative effects on our canine and feline patients. Although these may seem like completely different topics, they are closely related. Obesity is associated with many health issues. In terms of obese arthritic animals, we must consider

It is also important to consider that excess deposition of fat causes profound hormonal immunological and systemic changes. This leads to a chronic inflammatory state. Furthermore, patients with osteoarthritis can harbor an amplified amount of these inflammatory mediators. Even moderate amounts of fat loss can help decrease the amount of inflammation in these obese patients.

Implementing and starting a weight loss plan for overweight patients is one of the most important considerations especially in management of osteoarthritis. Obesity is preventable, easily treatable and within the care taker's control. By helping their pets lose weight, they can help them feel better. Obese patients are at a much higher risk for trauma to their joints, cartilage and ligaments than patients that are near a more optimal weight. Obesity usually causes decreased cardiovascular endurance which may lead to a decline in exercise tolerance and further worsen inactivity, stiffness and obesity.

It is important to determine the reasons why patients are obese. Often these are multi-factorial and may be related to individual metabolism differences, behavior issues and or other systemic disturbances such as endocrine issues like hypothyroidism or Cushing's disease.



the impact of increased weight on their joints and the problems excess fat can cause to their bodies. The number of canine and felines that are considered overweight is rapidly reaching epidemic proportions. Although weight loss can be a very sensitive topic for clients, many owners are not aware that their pets are overweight. Although this topic can feel awkward for veterinarians, it is important to raise owner awareness in order to prevent future health issues related to and compounded by obesity. These patients need more support and advocacy from the veterinary field in order to help improve their quality and quantity of life. Owners may be initially resistant but it is important to open the topic up to discussion. It often takes several attempts and frequent support for many owners to realize the importance of proper body condition for their pets.

It is common knowledge that excess body fat exacerbates orthopedic, dermatologic and cardiopulmonary diseases. Additionally, research shows that obesity can cause insulin resistance, type 2 diabetes mellitus, hypertension, hepatic lipidosis, can alter hemostasis, promote neoplasia and other co-morbidities.

Once systemic problems have been ruled out it is imperative to offer a weight loss plan that addresses the needs of the pet and owner. Food reduction, elimination of treats, changing the type of treats/diet (less calorically dense) or prescription weight loss diets are often good starting approaches.

It is a good idea to bring it to owner's attention that pet food companies are in business to sell their food products. Feeding instructions for most commercial food and even prescription diets are often more than double the amounts that should be fed, as they tend to overestimate energy needs. There are huge variations in metabolism between individual breeds and even as the pets grow older. In addition, neutered pets tend to have lower energy requirements. These are all reasons



why the suggested amounts for feeding instructions on the dog food cans and bags are often excessive and contribute to the confusion and weight gain.

Veterinarians and owners will need to discuss the amount and types of calories that are the most appropriate for proper body condition. If a pet is mildly overweight, we can try to decrease the food that the owner is currently feeding, however, this is not often effective since commercial foods are highly palatable and calorically dense. Another consideration with this method is that when we decrease the amount of food given, we will need to carefully monitor patients to prevent deficiencies in protein and nutrition. Prescription diets have less caloric content, are balanced and provide the right amount of nutrition and energy



restriction. They are more costly which may initially seem inconvenient but it is often one of the quickest options for decreasing weight. When owners purchase dog food through your practice, it also helps us to closely monitor that the patient is consistently being fed the proper amounts of the type of prescribed food.

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Obesity and Canine Osteoarthritis

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Portion control is essential. We know that when owners say that they “only give one cup a day” this can mean a Big Gulp cup from 7/11. It is critical for owners to carefully measure each meal based on the appropriately calculated amounts as many owners free feed and do not quantify the amount being fed. Portion control will help to prevent further weight gain and limit current calorie intake. Owners need to consistently measure each meal so rate of weight loss can accurately be assessed. Every family member needs to be on board in order to try to work towards a common goal of weight loss for their pet. They will need to eliminate treats altogether or try to strictly limit the amount of treats given throughout the day. Studies have shown that owners tend to feel bad and are less consistent when they have to completely cut treats out of their pet’s diet, therefore, rather than giving high caloric treats, we can suggest that they subtract a small portion of dry food from their morning and night feedings, which then can be offered as treats throughout the day in place of the high caloric treats, or offer low caloric veggies such as green beans. In this way, owners can still offer treats and will not feel as guilty during the weight loss process. It can also be a good idea to have the pets work with low impact “tricks” for food. This gives them mental stimulation, slows down how fast they are eating their food as well as making them more active and attentive. If they are eating dry food, you can hide the food in a blanket and have them search for it and find it, thereby increasing their activity and encouraging cognition. There are many different dispensing toys available that encourage activity.

It is imperative for any weight loss plan to have an accurate current caloric intake and ideal body weight for each patient. Discussion of body condition score with pictures may

help visually show owners the current body condition score and goals. It is also helpful to consistently take measurements of the patient’s chest and abdomen for comparison at rechecks and for improved compliance. Weigh ins should be scheduled with adjustments as needed. It is essential to monitor the progression of osteoarthritis. We also want the weight loss to be at an ideal rate while maintaining proper health and nutritional status. All of these factors including diet, lifestyle and activity level of the pet and owner need to be evaluated in order to calculate appropriate estimated caloric requirements.

Gradually increasing low impact and advised exercise, adjusted to the patient’s tolerance is best. Even if pets have moderate arthritis or are overweight, they can still benefit from low-impact exercise. It may take some time for them to work up to it. Short and frequent controlled leash walks are a good place to start. These walks can usually start off around 10 minute’s duration at a time, depending on the individual. Studies have shown that owners of obese dogs that live in houses with backyards are more likely to rely on their pets self-exercising in the backyard. Off leash exercise has more of a high impact on patient’s joints and is not ideal for pets with arthritis. It is better to start with light and controlled exercises and



gradually increase them based on the patient’s tolerance. If they seem as if their osteoarthritis is worse, this is an indication that owners are allowing too much activity. With excessive activity patients may seem more lame, stiff or may have a harder time rising after laying. This is why low-impact and controlled activity is critical. Rehabilitation with certified rehabilitators in addition to home exercises is often the best combination for proper activity. Exercises releases endorphins that can help alleviate the discomfort associated with osteoarthritis in addition to promoting muscle strength and range of motion. Under water treadmill employment is a great low impact

resistance exercise to help improve patients’ mobility and over all body condition. Modifications of activity and exercise limitations can be individualized based on the severity of the osteoarthritis and other systemic factors (such as heart murmurs). All new exercises should be closely monitored and altered based on the patient’s tolerance and response to exercising.

Even if pets have moderate arthritis or are overweight, they can still benefit from low-impact exercise.

In conclusion, it is essential to consider all options that can be offered in order to help improve their success at losing weight and improving quality of life. With weight loss alone, we can minimize the impact on joints, slow progression of disease, improve mobility, increase comfort and decrease inflammation. This highlights the vast impact obesity has on our pets and the importance of opening up the discussion with clients regarding their pets’ body condition. It is important for everyone to communicate well in order to make sure that all plans are implemented correctly with a proper rate of weight loss. If the weight loss plan is successfully followed, it can have a tremendous positive effect on the patient’s life which is often easily apparent for owners to observe, while supporting the benefits of decreased fat and promoting further compliance. Usually, owners are able to see the difference and are then won over regardless of the awkward and dreaded weight loss conversations. □

resistance exercise to help improve patients’ mobility and over all body condition. Modifications of activity and exercise limitations can be individualized based on the severity of the osteoarthritis and other systemic factors (such as heart murmurs). All new exercises should be closely monitored and altered based on the patient’s tolerance and response to exercising.

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- Soft micro-plush fabric for maximum comfort
- Machine Washable
- Stuffed with poly-fil which acts as a soft pillow for pet to rest on. It is not inflatable!
- Pets are able to eat, drink, sleep, and move around freely
- The neck is adjustable which provides for a more custom fit for each pet
- BONUS leash attachment to walk the dog, which will not interfere with the Collar

"My dog did very well with the collar, and it kept her away from the incision."
Smith C.

For Comfurt Collar sales, contact:
Sandi Garfinkel
info@comfurtcollar.com • 516-428-6000
www.comfurtcollar.com



Long Island Veterinary Specialists

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163 South Service Road, Plainview, New York 11803



LIVS Radiation Therapy



To refer your clients for radiation therapy, call
516-501-1700 or visit www.livs.org

Maria Camps, DVM, DACVIM (SAIM, Onc.) • Nicole Leibman, DVM, DACVIM
Dominic J. Marino, DVM, DACVS, DACCT, CCRP



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LIVS has pioneered the application of a specific type of radiation therapy called electronic brachytherapy (EB) to dogs and cats. EB allows the radioactivity to be administered to the surrounding cancer cells from a miniaturized radiation source, rather than a radioactive material as with conventional radiation therapy.

- Effective for a variety of tumor types
- Early radiation "drop off" and direct treatment of tumor bed results in less damage to surrounding tissues
- Treatment ranges from 3-8 days
- Can be used in combination with surgery and/or chemotherapy to provide permanent control or death of a tumor
- Up to 30% lower cost than traditional radiation therapy