



November 2017

American Association of Rehabilitation Veterinarians Newsletter – Technicians Corner

CASE STUDY: Disaster Response - Using therapeutic modalities for burn patients (Assisi tPEMF loop and Respond Veterinary Systems laser therapy)

Case log: # 1	Patient ID: 123456	Number of Visits: 14	Date: 10/16/17
Species/Breed: Feline/DSH	Age: 10	Sex: M/N	Weight (kg): 6.5
Diagnosis/Conditions: Burns on palmar/plantar surfaces of all feet			
Immediate rehabilitative goals: pain management, wound healing			
Representative Signed Advanced Skills (including assistance in) and Knowledge.			
<input type="checkbox"/> Canine Behavior and Handling	<input type="checkbox"/> Small Animal Anatomy, Physiology & Directional Terms		
<input checked="" type="checkbox"/> Responses of Musculoskeletal Tissues to Disuse & Remobilization	<input checked="" type="checkbox"/> Patient Assessment and Management		
<input checked="" type="checkbox"/> Physical Modalities, Manual Techniques & Adjunctive Treatments	<input type="checkbox"/> Common Conditions & Surgical Procedures		
<input type="checkbox"/> Client Communication	<input type="checkbox"/> Nutrition		
<input type="checkbox"/> Small Animal Anatomy, Physiology and Directional Terms	<input type="checkbox"/> Supplemental Skills		
Validated Objective Scales Used: <input checked="" type="checkbox"/> Pain score <input type="checkbox"/> Lameness Score <input type="checkbox"/> Neurologic Score			
Summary of Care (include final outcome if any and goals including ONE advanced skills that the applicant performed): patient received daily bandage changes and wound care as directed by the attending DVM for a total of 14 days. Patient was sedated with 10mcg/kg dexmedetomidine and 0.3mg/kg butorphanol IV for the first 7 days of treatment due to pain (score 2/4 CSU SDS Feline). Wound care included gentle debridement of peripheral foot pad skin as needed, warm 2% chlorhexidine diluted to light blue color with 0.9% saline soaks and photographic assessment of healing. Patient received daily LLLT (Respond 2400VS 808nm/500mW/10cm ² – 3J/242pps with protocol adjusted for wound healing up to 6J/3500pps by day 14) and tPEMF (Assisi Animal Health) q4-6 hours with bandages in place until healing was evident. PO pharmaceuticals included Gabapentin 10mg/kg q12hrs for 28 days. A 25mcg/hr Fentanyl patch was placed for a total of 7 days on the left metatarsus.			

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Introduction: Mid October 2017, Sonoma and Napa counties in Northern California experienced a unforeseeable disaster in the form of a Fire Storm. Thousands of structures were lost and hundreds of families were evacuated from their homes with minutes to spare, escaping with walls of fire crossing paths of escape and burning embers being blown for miles from high winds. Homes were destroyed and hundreds of animals were unable to be taken with families during the crisis. First responders to disaster regions, were able to rescue many animals once winds subsided and emergency crisis management could be established. Many injured animals were cats suffering severe burns to foot pads and the face. Animals were taken to the Sonoma Humane Society, Sonoma County Animal Control and UC Davis for supportive care.

Animal trauma centers offered to graciously house animals during their healing and treatment at no cost families and would continue to house them if families were left homeless. The local veterinary community was called upon to assist in any means possible, with many veterinarians, registered veterinary technicians and experienced animal caretakers volunteering their time. Nationally, Assisi Animal Health was contacted to help burned animals and they graciously donated multiple tPEMF devices to the shelters and UC Davis Veterinary Medical Teaching Hospital.



The Assisi Loop ® generates a twice-per-second, 2-millisecond burst of a 27.12 Megahertz radio wave signal with an amplitude of 4 microtesla. This pulse-modulated field is non-thermal and non-invasive, yet is sufficient in strength to have therapeutic benefit. This RF signal is specifically targeted to enhance the binding of calcium (Ca^{2+}) to calmodulin (CaM). This, in turn, accelerates the nitric oxide (NO) cascade, which regulates inflammation and healing. The Assisi targeted PEMF waveform therefore acts as a first messenger in tissue growth, repair, and maintenance.

With the help of our extended veterinary community, animals in need could have pain addressed in a non-invasive therapeutic manner. It is during these times of crisis that we all come together and work towards the same goal – helping and healing.

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Case Details: A 10-year-old male/neutered feline domestic short hair was treated by the veterinary team on a daily basis for pain, burn and wound management after being found 2 miles from the site of his home. The patient had sustained severe burns to all four foot pads and the fur/whiskers were singed. He was mildly dehydrated and sustained no other injuries. Bandage changes occurred for a total of 14 days. The neuropathic pain from being burned was so intense that the first 7 days he required sedation for treatment and supplemental transdermal fentanyl (25mcg). For bandage changes the patient was sedated with 10 mcg/kg dexmedetomidine and 0.3mg/kg butorphanol IV. Wound management included gentle wet debridement, foot soaks for 10 minutes with warm 2% chlorhexidine diluted to light blue color with 0.9% saline. Following foot soaks, the pads were rinsed with warm saline to remove any residual medications and Low-Level Laser Therapy (**Respond 2400VS 808nm/500mw probe**) was performed 3J per cm² at 242pps. A clear plastic bag was used to protect the wounds from contamination and to keep the equipment clean from debris. Feet were re-bandaged after application of 1% Silver Sulfadiazine cream and while the patient's sedation wore off and the bandages were in place he received tPEMF (**Assisi Animal Health**) therapy to his burns.



After 7 days of daily treatment and therapeutic modalities, the patient no longer required a Fentanyl patch or sedation for bandage changes. The owners were instructed to continue with tPEMF at least three times daily (up to four) and return daily for Low Level Laser Therapy (LLLT). Day 14 after treatment, bandage changes and LLLT were discontinued. tPEMF therapy was recommended to continue for an additional 30 days at least twice daily (q12) to ensure the patient did not develop chronic neuropathic pain.

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About the Author



Kristen holds an undergraduate degree from Sonoma State University (BS in Biology with a concentration in Animal Physiology) and has been a California Registered Veterinary Technician license since 2002. In 2005 she completed the University of Tennessee's Certificate Program in Canine Physical Rehabilitation. Kristen has also completed additional coursework in canine massage therapy through Caninology®, the University of Tennessee's Certificate Program as a certified Osteoarthritis Case Manager (COCM) along with earning the Certified Veterinary Pain Practitioner (CVPP) designation through the International Veterinary Association of Pain Management. She holds special areas of interests in Veterinary Orthotics and Prosthetics (VOP), geriatrics, sporting and performance, mobility and service dogs and multidisciplinary pain management strategies and currently works with Seeing Eye dogs at Guide Dogs for the Blind, Inc in San Rafael, CA and is the Program Director for the Physical Rehabilitation Department at Windsor Animal Hospital in Santa Rosa, CA. Kristen is current President of the Academy of Physical Rehabilitation Veterinary Technicians (APRVT), served on the Organizing Committee and is recognized with a VTS (Physical Rehabilitation).

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