Class IV Companion Therapy Laser Post Surgical Pain Management Feline Neuter

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Application
Use of the Class IV Companion Therapy Laser after routine surgeries will decrease post op swelling, accelerate healing and help reduce post op pain.

Patient
"Tiger Tom", DSH, 4 mo, M, 5 lb

Procedure
Feline Orchidectomy

Technique
Class IV Companion Therapy Laser treatment of the surgical site after surgery.

Class IV Companion Therapy Laser Settings (980nm)
Post op - 2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5000 hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema and at 5000 Hz accelerates healing.

Further Post-op Care
The Class IV Companion Therapy Laser is used as part of the overall pain management protocol, as an adjunct to appropriate pharmacological agents. Additional Companion Laser treatment is not used in routine elective surgeries.

COMPANION THERAPY LASER

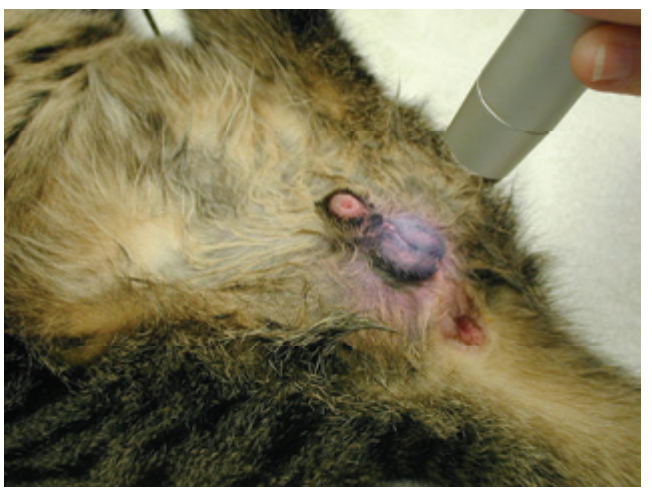

Fig. 1-2 Post op treatment of the incision site and the surrounding area at 500 Hz and 10 Hz.
Note: *digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.*

Class IV Companion Therapy Laser Post Surgical Pain Management Ovariohysterectomy

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Application
Use of the Class IV Companion Therapy Laser after routine surgeries will accelerate healing and help reduce post operative pain.

Patient
"Puddles", Shih Tzu, 6 mo, Fe, 10 lb

Procedure
Canine Ovariohysterectomy

Technique
Class IV Companion Therapy Laser treatment of the surgical site after surgery.

Class IV Companion Therapy Laser Settings (980nm)
Post op - 2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5000 hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema and at 5000 Hz accelerates healing.

Further Post-op Care
The Class IV Companion Therapy Laser is used as part of the overall pain management protocol, as an adjunct to appropriate pharmacological agents. Additional Companion Laser treatment is not used in routine elective surgeries.

COMPANION THERAPY LASER

Fig. 1 Post op treatment of the incision site and the surrounding area. Technician uses visible aiming beam to facilitate non-contact treatment.

Fig. 2 ***Note: digital photography makes the laser light appear blue and white although being in the near infrared spectrum it is not visible to the eye.***

Class IV Companion Therapy Laser
Post Surgical Pain Management
Feline Onchyectomy (Declaw)

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Application
Use of the Class IV Companion Therapy Laser after routine surgeries will accelerate healing and help reduce post operative pain.

Patient
"Marigold", DSH, 2 yr, FeS, 7 lb

Procedure
Feline Onchyectomy

Technique
Class IV Companion Therapy Laser treatment of the surgical site after surgery.

Class IV Companion Therapy Laser Settings (980nm)
Post op - 2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5000 hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema and at 5000 Hz accelerates healing.

Further Post-op Care
The Class IV Companion Therapy Laser is used as part of the overall pain management protocol, as an adjunct to appropriate pharmacological agents. Additional Companion Laser treatment is not used in routine elective surgeries.

COMPANION THERAPY LASER

Fig. 1 Post op treatment of the incision sites and the surrounding area. Technician uses visible aiming beam to facilitate non-contact treatment.

Fig. 2 ***Note: digital photography makes the laser light appear blue and white although being in the near infrared spectrum it is not visible to the eye.***

Class IV Companion Therapy Laser Adjunct Pain and Edema Management Terminal Osteosarcoma

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem

Foreleg osteosarcoma with metastasis. The owner's goal is maintaining quality of life using multiple pain medications and pain relief modalities. Informed that the use of laser therapy in areas of tumors is possibly contraindicated, the owners accepted the risk for Kirby to gain short term mediation of pain and swelling.

Patient

"Kirby", Golden Retriever, 9 yr, MN, 86 lb

Treatment Technique

Every other day treatments with the Class IV Companion Therapy Laser. Hz appropriate for pain relief (CW, 2, 10 Hz) were applied to the tumor and surrounding area.

Hz appropriate for edema reduction (500, 1000 Hz) were applied in a scanning mode working from proximal to distal over the edematous areas proximal and distal to the osteosarcoma.

Class IV Companion Therapy Laser Settings (980nm)

6 watts / 2 min each / CW, 2 Hz, 10 Hz
6 watts / 2 min each / 500, 1000 Hz

Treatment Results –

After two treatments the edema reduced 50%. The owners reported **"Kirby is still barely using his leg, but our guy has re-joined us! He's back in the middle of the den floor at night, playing with his stuffed bunny. Thank you."**

COMPANION THERAPY LASER

Fig. 1 Technicians administering a scanning Companion Laser Therapy treatment to Kirby's antebrachium to reduce pain and edema caused by a metastasized distal radial osteosarcoma.

Fig. 2 ***Note: digital photography makes the laser light appear blue and white although being in the near infrared spectrum it is not visible to the eye.***

Class IV Companion Therapy Laser
Acute Dorsal Lumbar Epaxial Pain

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Patient presented with acute lumbar muscle pain. Patient showed muscle spasms and marked pain on palpation of dorsal lumbar area and no neurological deficits. Radiographic studies are within normal limits.

Patient
"Blackjack", Schnauzer, 10 yr, MN, 18 lb

Treatment Technique
One treatment session with the Class IV Companion Therapy Laser using an "Acute Pain / Back Injury" program.
Hz appropriate for pain relief (CW, 2 Hz, 10 HZ) were applied to the dorsal lumbar area in a scanning mode. The plastic spray bottle in the picture contains water and is used to wet dark colored coats to facilitate laser penetration.

Class IV Companion Therapy Laser Settings (980nm)
4 watts / 2 min / CW
4 watts / 1min / 2 Hz
4 watts / 1min / 10 Hz

Treatment Results –
Within one hour of treatment Blackjack was moving about normally. At discharge he was jumping up on the owner for the first time in several days. Blackjack was discharged on NSAIDs. Further treatment was not necessary.

Fig. 1 Technician administering a scanning Companion Laser Therapy treatment to Blackjack's lumbar region.
Note: The spray bottle in the picture contains water which is used to wet the hair and skin of darker coated animals to facilitate transmission of the laser energy through the hair and skin.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser Post Surgical Pain Management Oral Surgery

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Application
Use of the Class IV Companion Therapy Laser after oral surgery will accelerate healing and help reduce post operative pain.

Patient
"Sophia", Siamese Mix, 1 yr, FeS, 8 lb

Procedure
Surgical extraction of a fractured lower left premolar.

Technique
Class IV Companion Therapy Laser treatment of the surgical site after surgery.

Class IV Companion Therapy Laser Settings (980nm)
Post op - 2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5000 Hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema and at 5000 Hz accelerates healing.

Further Post-op Care
The Class IV Companion Therapy Laser is used as part of the overall pain management protocol, as an adjunct to appropriate pharmacological agents. Additional Class IV Companion Therapy Laser treatment is not used in routine oral surgeries.

Fig. 1 Post op treatment of the surgery site and the surrounding area at 20, 500 and 5000 Hz. *Note: digital photography makes the laser light appear blue and white although being in the near infrared spectrum it is not visible to the eye.*

Class IV Companion Therapy Laser Pyotraumatic Dermatitis (Hot Spot)

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem

Patient presented with acute pyotraumatic dermatitis, with intense pain and was obsessively licking the affected area.

Patient

“Dolly”, Mix, 5 yr, FeS, 32 lbs

Treatment Technique

After application of a topical anesthetic agent, the area was clipped and rinsed with sterile saline. No topical medication was applied

One treatment session with the Class IV Companion Therapy Laser using a “Contaminated Wound Setting” program. This combination of settings is appropriate for pain reduction, reduction of swelling, bio-stimulation and anti-microbial effect.

Class IV Companion Therapy Laser Settings (980nm)

2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5,000 Hz
2 watts / 30 sec / 10,000 Hz

Treatment Results –

Within three hours the lesion was showing marked reduction of erythemia, was dry, and the patient was no longer licking it. She was given an injection of dexamethasone and discharged on oral antibiotics with instructions for no topical treatment at home.

Fig. 1 Technicians administering a scanning Companion Laser Therapy treatment to Dolly’s pyotraumatic dermatitis.

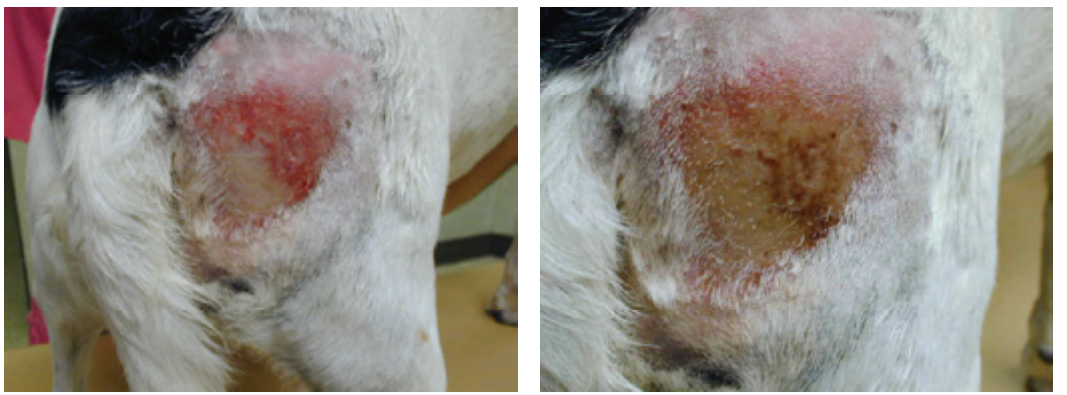

Fig. 2 Left - before treatment. Right - 3 hours after treatment. Treatment resulted in decreased erythemia, drying of the lesion and the patient no longer licking the affected area.

Class IV Companion Therapy Laser
Penetrating Wound to Carpus

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Acute lameness right forelimb with swelling and pain in the carpus. A fresh 1cm penetrating wound was noted. No radiographic changes were noted in bones or joints.

Patient
"TJ", Mix, 1yr, MN, 47 lbs

Treatment Technique
One treatment session with the Class IV Companion Therapy Laser using a "Contaminated Wound Setting" program. This combination of settings is appropriate for pain reduction, reduction of swelling, bio-stimulation and anti-microbial effect.

Class IV Companion Therapy Laser Settings (980nm)
2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5,000 Hz
2 watts / 30 sec / 10,000 Hz

Treatment Results –
Within two hours of treatment the swelling had reduced 50% and TJ was weight bearing. He was discharged on NSAIDs and antibiotics. The owner noted that when TJ got home he ran around the yard normally. She reported an uneventful recovery.

Fig. 1 Penetrating injury to the right carpus prior to treatment.

Fig. 2 Technicians treating TJ with Companion Class IV Therapy Laser.
Note: *digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.*

COMPANION THERAPY LASER

Class IV Companion Therapy Laser Generalized Arthritis

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Osteoarthritis of stifles, hips and lumbar spine. Patient's activity had declined and he was having difficulty rising and moving up and down steps. Patient is on an oral NSAID.

Patient
"Sandy", Boxer, 11 yr, M, 63 lbs

Procedure
Six treatments with Companion Laser over three weeks. No change in additional therapy during initial laser treatment. Follow-up treatments as needed every 3-4 weeks.

Technique
Treatments on Days 1, 3, 5, 8, 11 & 18, then PRN.

Companion Laser Settings
Treated each joint area with Companion's "Arthritis/Chronic Pain" program.

CW / 2 min. / 5 watts
10 Hz / 1 min. / 5 watts
500 Hz / 1 min / 5 watts

Rationale
Laser energy induces photobiomodulation in arthritic tissue, decreases pain and swelling, increases circulation and induces decreased inflammation.

Results
The patient's activity increased and post treatment he moved about much more easily on a reduced dose of oral NSAID.

Fig. 1 Technicians treating Sandy with Companion Class IV Therapy Laser. Note: *digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.*

Class IV Companion Therapy Laser
Atoptic Pedal Dermatitis

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Patient has chronic seasonal atopic pedal dermatitis. Maintained on oral medication (no cortisone) with poor success. Marked licking and chewing of all feet.

Patient
"Maverick", Pit Bull, 4 yr, Mn, 80 lbs

Treatment Technique
Stage I -

Right Fore – Multiple Hz treatment
- 2 W / 30 sec / 20 Hz
- 2 W / 30 sec / 500 Hz
- 2 W / 30 sec / 5000 / Hz

Left Fore - CW only treatment
- 2 W / CW / 2 min each foot

Stage II – Evaluated duration of response to CW only treatment.

Treatment Results –
During Stage I the patient displayed significantly greater relief from symptoms with CW only treatment.

During Stage II the patient consistently showed 1 ½ - 2 days of complete symptom relief.

Although Class IV Laser Therapy treatment is not a practical protocol for long term management of recurring atopic pedal dermatitis, this case demonstrates the technology's profound anti-inflammatory effect. Short term use during acute episodes of atopic pedal dermatitis is indicated.

Fig. 1 Before treatment.

Fig. 2 - 24 hours after CW only treatment.

Fig. 3 Before treatment.

Fig. 4 - 24 hours after CW only treatment.

Multiple Hz treatment resulted in moderate relief of symptoms. CW only treatment resulted in decreased erythemia, drying of the lesions and complete relief of symptoms for 1 ½ days. Note resolved area of intense erythemia and rawness indicated by arrows in Fig. 1 & 3.

Class IV Companion Therapy Laser Cystotomy Pain Management

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Application
Use of the Class IV Companion Therapy Laser after cystotomy surgery will accelerate healing and reduce postoperative inflammation, swelling and pain.

Patient
"Aly", Dach, 8 yr, FeS, 17 lb

Procedure
Cystotomy for removal of cystic calculi.

Technique
Class IV Companion Therapy Laser treatment of the urinary bladder during surgery and the abdominal surgical site after surgery.

Class IV Companion Therapy Laser Settings (980nm)
Intra and Post op -
2 watts / 30 sec / 20 Hz
2 watts / 30 sec / 500 Hz
2 watts / 30 sec / 5000 Hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema and at 5000 Hz accelerates healing.

Further Post-op Care
The Class IV Companion Therapy Laser is used as part of the overall pain management protocol, as an adjunct to appropriate pharmacological agents. Additional Companion Laser treatment is not used in routine bladder surgery.

COMPANION THERAPY LASER

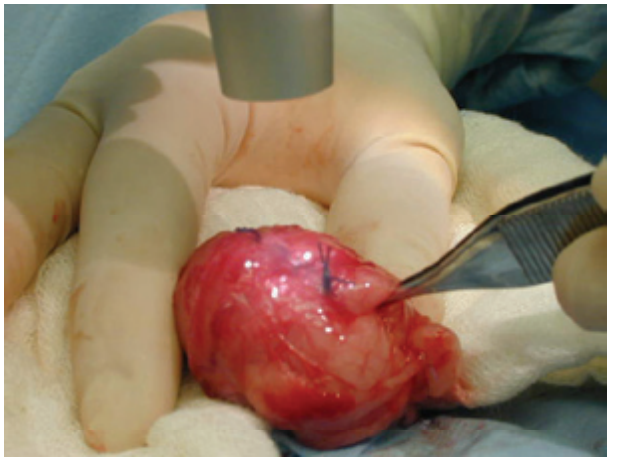

Fig. 1 Treatment of the bladder incision site and the surrounding tissue area at 20, 500 and 5000 Hz.

Fig. 2 Post op treatment of the incision site and the surrounding area at 20, 500 and 5000 Hz.
Note: *digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.*

Class IV Companion Therapy Laser Lick Granuloma

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem

Lick granuloma of several years duration over the right metatarsus. Previous temporary improvements had been noted following oral antibiotic therapy and bandaging. The patient had received no therapy for this lesion for over a year prior to laser treatment.

Patient

"Daisy, Mix, 5 yr, FeS, 48 lbs

Procedure

Treatment with the Companion Class IV Therapy Laser three times a week for four weeks, then two times a week for four weeks.

Companion Laser Settings

At each treatment the entire lesion was treated with:

2 W / 30 sec / 20, 500, 5000 Hz
3 W / 30 sec / 10,000 Hz

Rationale

Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema, at 5000 Hz accelerates healing, and, at 10,000 Hz has an anti-microbial effect.

Results

After two weeks of therapy the patient was no longer licking the lesion and it had begun to reduce in size. Measurements taken before and after eight weeks of treatment indicate significant reduction in the mass of granulomatous tissue.

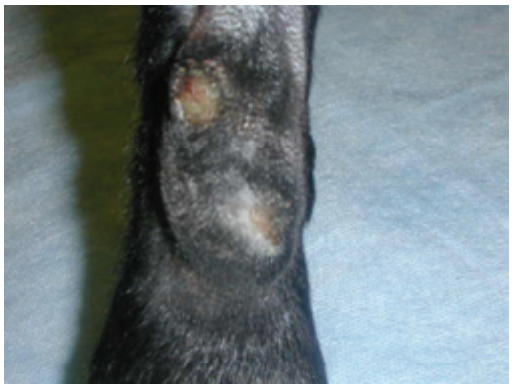

Fig. 1 Before treatment

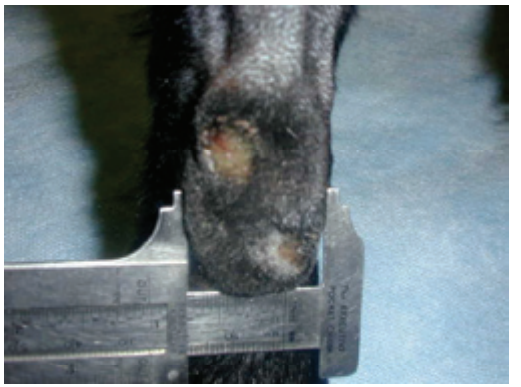

Fig. 2: Recording measurements before treatment

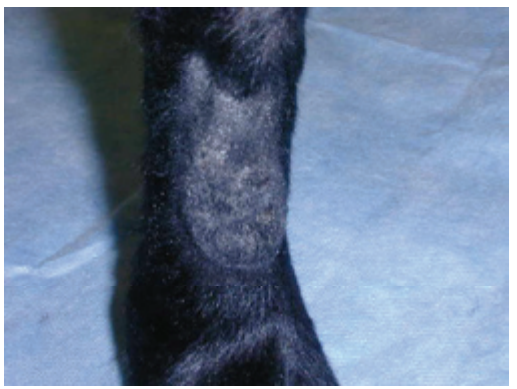

Fig. 3: After eight weeks of Class IV Therapy Laser treatment as only treatment modality

PRE AND POST TREATMENT MEASUREMENTS (cm)

	Pre	Post	
Width -	3.5	2.5	cm
Height -	5.0	3.0	cm
Depth -	3.5	1.5	cm

Note: This case underscores the importance of continuing treatment for long enough a period of time to allow chronic tissue changes to begin to reverse and resolve.

Class IV Companion Therapy Laser
Feline Lower Urinary Tract Disease

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Frequent small volume micturation in a young male neutered cat. Urine showed a minimal number of leukocytes and was negative for bacteria, red blood cells, crystals and casts. Urine pH was 6.5. S.G. was 1.035. Other dipstick parameters were normal. The bladder was palpably normal and manual compression resulted in a normal urine flow. The presumptive cause of feline lower urinary tract disease was idiopathic interstitial cystitis and urethritis.

Patient
"Hobo", DSH, 3 yr, MN, 18.5 lbs

Procedure
Treatment with the Companion Class IV Therapy Laser one time during initial diagnosis and treatment.

Companion Laser Settings
After clipping, the area over the urinary bladder and pelvic and penile urethra was treated with:

5 W / 2 min / CW, 500 Hz

Rationale
Laser energy delivered at CW reduces pain and when pulsed at 500 Hz reduces edema and inflammation.

Results
After the initial Class IV laser therapy the patient was treated with anti-inflammatory medication (Metacam 2.5mg injection) and discharged with oral medication (Metacam .15mg orally daily) for 5 days. The owner reported no further symptoms after discharge.

Fig. 1: Trans abdominal wall treatment of the bladder and pelvic and penile urethra of patient with FLUTD caused by interstitial cystitis/urethritis. Treatment was applied in both scanning and contact mode.

Note: in this picture digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser
Feline Digital Pad Wound and Toe Abscess

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Penetrating fight wound injury to the right front 3rd digital pad resulting in a painful abscessed toe. The patient presented with an intermittent weight bearing limp of the right forelimb.

Patient
"Baby", DSH, 5 yr, FS, 9.75 lbs

Procedure
Treatment with the Companion Class IV Therapy Laser one time during initial diagnosis and treatment.

Companion Laser Settings
After opening and draining the abscessed toe through the original wound in the digital pad, the toe and adjacent structures were treated with a Contaminated Wound protocol:

2 W / 30 sec / 20, 500, 5000, 10,000 Hz

Rationale
Laser energy delivered at CW reduces pain, when pulsed at 500 and 5000 Hz reduces edema and inflammation, and at 10,000 Hz has an anti-microbial effect.

Results
After the initial Class IV laser therapy the patient was treated with anti-inflammatory medication (Metacam 1.4mg injection) and discharged with oral antibiotics and oral anti-inflammatory medication (Metacam .09mg orally daily) for 5 days. The patient was fully weight bearing at discharge and the owner reported no further symptoms after discharge.

Fig. 1 Painful fight wound abscess of right front 3rd digital pad and toe

Fig. 2 Treatment after surgical drainage of a painful abscessed toe at 20, 500, 5000 and 10,000 Hz.
Note: *digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.*

Class IV Companion Therapy Laser Post Immiticide Lumbar Myositis

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem

Acute myositis with pain and swelling resulting from Immiticide injections into dorso-lateral epaxial lumbar muscles. Therapy laser treatment was included as part of the pain control protocol when this patient received two contralateral injections of Immiticide.

Patient

"Daisy", Mix, 10 yr, FeS, 19.2 lbs

Procedure

Treatment of the dorsolateral epaxial lumbers muscles with the Companion Class IV Therapy Laser once a day for three days beginning 24 hours after Immiticide injections in each muscle mass. Initial treatment of each side was delayed 24 hours to avoid altering absorption of Immiticide.

Companion Laser Settings

At each treatment each muscle mass was treated with:

4 W / 1 min / CW
4 W / 2 min / 500, 5000 Hz

Rationale

Pulsed laser energy at CW reduces pain, at 500 Hz reduces edema and at 5000 Hz accelerates healing.

Results

Twenty-four hours after each side was initially treated there was marked reduction of pain and swelling in the affected muscles.

Fig. 1: Acute swelling of left dorso-lateral epaxial lumbar muscles 24 hours after Immiticide injection.

Fig. 2: Acute swelling of right dorso-lateral epaxial lumbar muscles 24 hours after Immiticide injection.

Fig. 3: Treatment of dorsolateral epaxial lumbar muscles with Class IV Therapy Laser

Fig. 4: Bilateral reduction of lumbar muscle swelling after third daily treatment with Class IV Therapy Laser

COMPANION THERAPY LASER

Class IV Companion Therapy Laser
Canine Rear Leg - Soft Tissue Trauma

Case Study Provided By: Sandra K. Pettit, MS, DVM
Milton Animal Hospital
Milton, Florida

Problem
Acute trauma to the medial aspect of the left rear leg with severe injury to the skin, muscles and tendons, and, the ligaments and joint capsule of the hock joint. The wounds were contaminated; sepsis was present. The owners had severe financial constraints.

Patient
Pit Bull, 6 mo, Fe

Procedure
Standard wound care was instituted, including lavage, wet to dry bandages, and, oral medications including antibiotics and pain medication. Laser therapy began on day three and was repeated six more times during the next two weeks.

Companion Laser Settings
At each treatment the wound area was treated with two cycles through the contaminated wound program:

2 W / 30 sec / 20, 500, 5,000, 10,000 Hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema, at 5000 Hz accelerates healing and at 10,000 Hz has an anti-microbial effect.

Results
The wound showed rapid healing with faster than expected granulation and epithelial migration. Laser therapy made the difference with this patient since the owners would not have been able to afford wound care for the prolonged time required for conventional healing.

Day 1- Medial aspect of the left rear leg as presented after trauma presumably caused by a ditch digging machine. Tissue loss and maceration, bone exposure, and heavy contamination by foreign material and microorganisms pose significant challenges in managing this wound.

(Images continued on page 2)

Case Study Prepared By: John C. Godbold, Jr., DVM, Jackson, Tennessee

Class IV Companion Therapy Laser
Canine Rear Leg - Soft Tissue Trauma

Case Study Provided By: Sandra K. Pettit, MS, DVM
Milton Animal Hospital
Milton, Florida

Day 2

Day 3: Each treatment was applied to the wound and to the surrounding tissues.

Day 8

Day 15

Day 17: At 2 ½ weeks the wound had granulated more rapidly than expected with almost complete coverage of the exposed tibia. Wound contraction and epithelial migration is significantly advanced.

Day 30: At one month the wound has advanced well beyond healing that would be expected without the addition of laser therapy.

COMPANION THERAPY LASER

Case Study Prepared By: John C. Godbold, Jr., DVM, Jackson, Tennessee

Class IV Companion Therapy Laser Copperhead Snake Bite Treatment

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem

Pain, swelling and edema, and tissue necrosis following a copperhead snakebite. Thirty-six hours after the bite the patient was markedly painful and barely weight bearing. Swelling and edema persisted.

Patient

"Baxter", Mix, 4 yr, Mn, 19.4 lbs

Procedure

Treatment using a Class IV therapy laser was instituted as an adjunct to appropriate medical and wound care.

Companion Laser Settings

The area of tissue necrosis was treated for pain and the more proximal and distal areas were treated for swelling and edema.

The Acute Pain Protocol was applied to the area of tissue necrosis.

2 watts / 2 min / CW
2 watts / 1 min / 2 Hz
2 watts / 1 min / 20 Hz

The Edema / Swelling Protocol was applied proximal and distal to area of tissue necrosis.

4 watts / 1 min / 100 Hz
4 watts / 2 min / 2500 Hz
4 watts / 2 min / 5000 Hz

(Continued on Page 2)

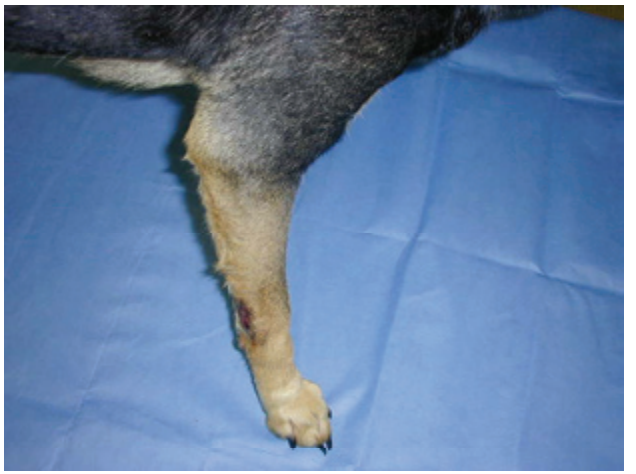

Fig. 1: Acute swelling of right foreleg and axilla 36 hours after a copperhead snake bite to the right carpus

Fig. 2: Focal tissue necrosis at site of a copperhead snakebite.

(Images continued on page 2)

Class IV Companion Therapy Laser Copperhead Snake Bite Treatment

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Treatment Technique

For best effect the treatment should be directed into the target tissue from several different angles. All affected areas should be treated with all of the Hz in each protocol.

Rationale

Treatment of this patient utilized laser energy delivered at CW and pulsed at low (2, 20) Hz for the reduction of pain.

Treatment of the areas proximal and distal to the bite site utilized higher Hz (100, 2500, 5000) which are more effective in opening lymphatics and reducing tissue edema and swelling.

Results

This patient was only moderately affected by the copperhead bite but still experienced severe pain and tissue reactions.

Adjunct use of the Class IV therapy laser resulted in a marked reduction in pain and swelling within hours of the initial treatment.

Twenty four hours after the initial treatment a second treatment was administered and the patient was discharged on oral medications. The owners reported uneventful recovery and complete healing.

Figs. 3 & 4: Treatment of focal tissue necrosis from both posterior and lateral directions. Treatment is directed into target tissue from multiple directions for best effect.

Fig. 5: Twenty four hours after initial Class IV therapy laser treatment the patient displayed full weight bearing and marked reduction in swelling and edema.

Class IV Companion Therapy Laser
Acute Otitis Externa

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Acute exacerbation of chronic otitis externa. Severe pain and swelling that occluded the ear canals prevented complete diagnostics.

Patient
"Petey", Jack Russell Terrier, 2 yr, M, 20 lb.

Procedure
Treatment with a Class IV therapy laser was used as an adjunct to initial medical care. The goals were to reduce pain, inflammation and swelling so more complete diagnostics could be performed.

Companion Laser Settings
Each ear was treated with a single Contaminated Wound Protocol, treating the pinna and ear canal opening directly and the proximal ear canal transcutaneous.

4 W / 30 sec / 20, 500, 5,000, 10,000 Hz

Because of the mass of tissue involved the power was increased to 4 watts during this treatment.

Rationale
Treatment of this patient utilized laser energy pulsed at low (20) Hz for the reduction of pain, at higher (500, 5,000) Hz for swelling and edema, and at very high (10,000) Hz for anti-microbial effect.

(Continued on Page 2)

COMPANION THERAPY LASER

Fig. 1: Acute exacerbation of chronic otitis externa with pain, swelling and edema, discharge and and canal occlusion. Standard diagnostics including video-otoscopy must be delayed until the swelling is reduced.

Fig. 2: Treatment of the pinna and directly into the ear canal.

Fig. 3: Transcutaneous treatment of the proximal ear canal.

Note: *digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.*

(Images continued on page 2)

Class IV Companion Therapy Laser
Acute Otitis Externa

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Overall Treatment Plan

Use the Class IV therapy laser a single time to initially reduce pain, swelling, and edema was added to a standard protocol of oral prednisone and topical cleanser and anti-bacterial agents.

Initial cytological examination demonstrated a mixed Malassezia and gram positive bacterial infection without polymorphonuclear cells. This common presentation calls for cleansers, and, anti-inflammatory and anti-microbial medications.

A frequent challenge in this condition is the time lag between initial presentation and effect from medications. Occlusion of the ear canal makes topical treatment unsuccessful.

The value of using Class IV laser therapy laser treatment in cases of acute otitis externa is the rapid reduction in swelling and edema that allows early initiation of successful topical treatment.

Results

Twenty-four hours after an initial single therapy laser treatment the owner was able to begin treating with topical medications at home. Five days after initial treatment the edema, swelling, pain, discharge and debris were markedly reduced. Lichenification was reduced and the patient tolerated bilateral digital video otoscopy of the entire ear canals.

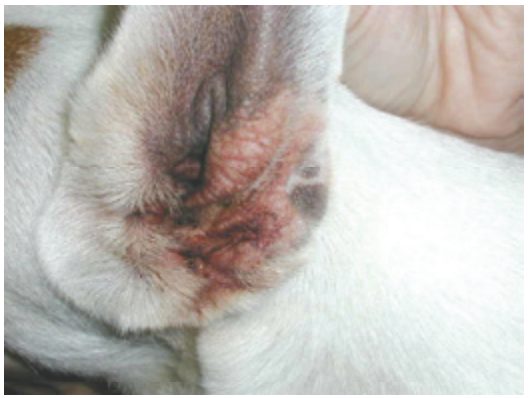

Fig. 4: Acute exacerbation of chronic otitis externa with pain, swelling and edema, discharge and and canal occlusion. These images were taken on initial presentation before any treatment was initiated.

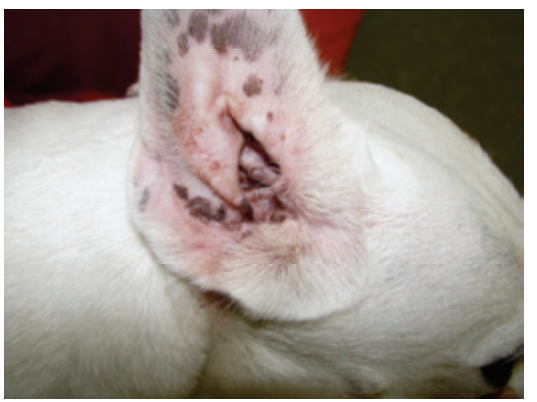

Fig. 5: Dramatic resolution of edema and swelling five days after Class IV therapy laser treatment and beginning of parenteral and topical medication.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser Anal Gland Sacculitis

Case Study Provided By: John C. Godbold, Jr., DVM
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Problem
Recurrent anal gland sacculitis. Fetid anal sac discharge, patient self trauma (scooting) and inflammation and abrasion of the anal tissues. The patient was non-responsive to medical therapy (oral antibiotics and cortisone) and anal sac flushing and packing.

Patient
"Roy", Bassett, 7 yr, M, 60 lb.

Procedure
Class IV therapy laser treatment of the anus and anal gland sacs was performed three times a week for two weeks. Prior to each treatment the sacs were emptied for evaluation of the secretions.

Companion Laser Settings
The entire anal area was treated with 3 W / 1 min / CW.
The anal sacs were treated trans-cutaneous with 6 W / 1 min / 10,000 Hz.

Rationale
Treatment of this patient utilized non-pulsed (CW) laser energy for the reduction of pain, swelling and edema, and, pulsed (10,000 Hz)) laser energy for anti-microbial effect. Both applications delivered 3.5 J /CM^2.

Results
Twenty-four hours after the initial treatment the owner reported decreased anal irritation and discharge. After two treatments the anal sac secretions returned to normal color, consistency and odor.

Comment
This treatment was remarkably successful in the first week but was continued over two weeks in an attempt to delay future recurrence.

Fig. 1 Anus and perianal area prior to treatment.

Fig. 2 Anus and perianal area 72 hours after initial treatment. Redness, swelling, abrasion, and patient self trauma have subsided and anal sac secretions have returned to normal.

Class IV Companion Therapy Laser Unilateral Elbow Arthritis

Case Study Provided By: John C. Godbold, Jr., DVM
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Jackson, Tennessee

Problem

Chronic, progressive osteoarthritis of the left elbow following elbow trauma as a juvenile. On presentation the patient had a weight bearing limp, the elbow was markedly enlarged, had limited range of motion and was painful on palpation. Medical therapy was limited to glucosamine – chondroitin sulfate supplement by the referring veterinarian.

Patient

"Titan", German Shepherd, 11 yr, FS, 81 lb.

Procedure

Treatment using a Class IV therapy laser was used to reduce pain and inflammation in the left elbow. The joint and surrounding area were treated three times a week for three weeks, then once every two weeks for maintenance.

Companion Laser Settings

The left elbow and surrounding tissues were treated from all directions with the joint in normal position as well as maximum limits of flexion and extension.

10 W / 2 min / CW Target Dose: 8 joules/cm^2

Rationale

CW only treatment with appropriate target dose gives excellent pain control, reduces treatment time and has been demonstrated to be as effective as multiple Hz treatments in many patients.

Results

Titan showed increased weight bearing and decreased limp after three treatments. The owners reported an increase in activity at home.

Fig. 1: Treatment of the left arthritic elbow from the posterior aspect with the left forelimb in normal position.

Fig. 2: Treatment of the tissue surrounding the left elbow from the anterolateral aspect.

Class IV Companion Therapy Laser
Feline Geriatric Arthritis

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem
Geriatric osteoarthritis, stiffness, and loss of muscle mass accompanying chronic renal disease.

Patient
“Pokey”, DSH, 16 yr, MN, 6.5 lb.

Procedure
Treatment using a Class IV therapy laser was used to reduce pain, inflammation and stiffness, enhance mobility and improve the quality of life. Pokey’s chronic renal disease, intermittent anorexia and the inability of the owners to medicate Pokey at home precluded the use of medical therapy for musculoskeletal discomfort.

Companion Laser Settings
The lumbar spine, hip joints, stifles, proximal coccygeal vertebral joints and associated muscle masses were treated twice a week using a scanning technique.

8 W / 5 min / CW Target Dose: 8 joules/cm^2

Results
Twenty-four hours after the initial treatment Pokey trotted for the first time in over a year. With subsequent treatments mobility and activity increased and Pokey moved in a wider range around his home.

Pokey was maintained with twice weekly treatments administered during outpatient visits for fluid therapy.

Fig. 1: Geriatric patient with cachexia of chronic renal disease accompanied by age associated arthritis, stiffness, loss of muscle mass and discomfort moving about.

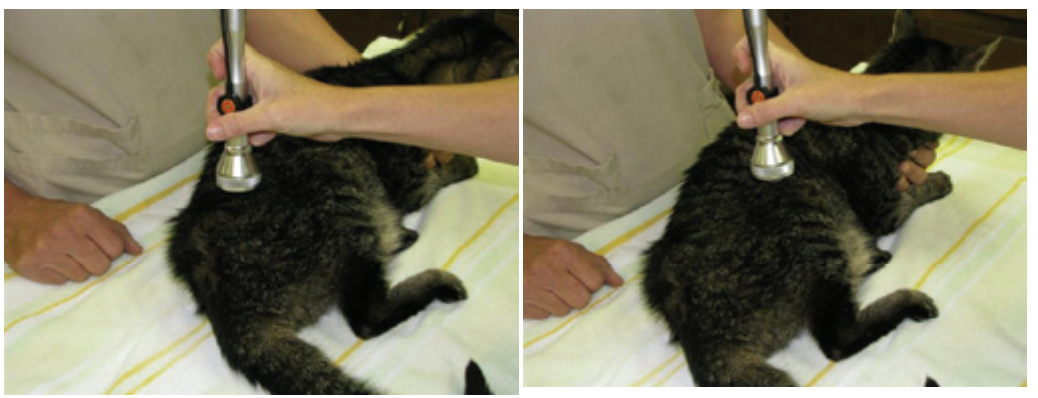

Fig. 2: Treatment of the right coxofemoral joint and stifle and associated muscles. Treatment is directed from multiple angles with joints in normal position as well as extension and flexion. Treatments were administered along with twice a week outpatient fluid therapy.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser
Canine Fore Leg - Soft Tissue Trauma

Problem
Acute trauma to the anterior aspect of the right fore leg with severe injury to the skin, muscles and tendons, and, the ligaments and joint capsules of the carpal and metacarpal-phalangeal joints. The wounds were contaminated and significant amounts of skin was no longer present in two areas.

Patient
"Scarlett", Mix, 7yr, FeS

Procedure
Standard wound care was instituted, including lavage, wet to dry bandages, and oral medications including antibiotics and pain medication. Laser therapy began on day two and was repeated at each bandage change for three weeks.

Class IV Therapy Laser Settings
At each bandage change each wound area was treated with one Contaminated Wound protocol:

2 Watts / 30 sec / 20 Hz
2 Watts / 30 sec / 500 Hz
2 Watts / 30 sec / 5,000 Hz
2 Watts / 30 sec / 10,000 Hz

Rationale
Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema, at 5000 Hz accelerates healing and at 10,000 Hz has an anti-microbial effect.

Day 2- Anterior aspect of the right fore leg twenty four hours after presentation for automobile trauma. Tissue loss and maceration, bone and joint exposure, and heavy contamination by foreign material and microorganisms pose significant challenges in managing these wounds.

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Class IV Companion Therapy Laser
Canine Fore Leg - Soft Tissue Trauma

Treatment Protocol and Technique
Starting twenty four hours after presentation the wounds were therapy laser treated at each bandage change for the next three weeks. (It is not possible to treat through bandage material).

At each bandage change the wounds were flushed, cleaned and debrided prior to laser treatment.

The wounds were treated from multiple angles with all frequencies (Hz) of the Contaminated Wound protocol being applied to all areas of each wound.

Day 2- Initial treatment of the open wounds with the Class IV Therapy Laser using a "Contaminated Wound" preset protocol on each wound.

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Class IV Companion Therapy Laser
Canine Fore Leg - Soft Tissue Trauma

Day 7: Both wounds show attachment of the skin margins and both have begun to form granulation tissue.

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Class IV Companion Therapy Laser
Canine Fore Leg - Soft Tissue Trauma

Day 13: Continued granulation and epithelial migration in both proximal and distal wounds.

Day 20: Significant reduction in wound sizes with wide borders of epithelial migration.

Day 27: Progression of epithelial migration from Day 20 is well beyond that expected.

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COMPANION THERAPY LASER

Class IV Companion Therapy Laser
Canine Fore Leg - Soft Tissue Trauma

Results

Because of the loss of skin in this injury, significant areas required healing by contraction and epithelial migration. On presentation this wound had potential for requiring grafting of skin for complete closure.

The wounds showed rapid healing with faster than expected granulation and successful epithelial migration. Skin grafts were not required.

This case required continued bandaging for five weeks, followed by an additional three weeks of a light bandage for protection from contact trauma.

The patient made no attempt to disrupt the bandages - a benefit of the pain reducing effect of the therapy laser.

Day 34

COMPANION THERAPY LASER

Class IV Companion Therapy Laser Hemivertebrae Neuropathy

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Problem

Progressive neurological deficits since 3 years of age. Multiple hemivertebrae and moderate kyphosis. A neurological exam demonstrated proprioceptive deficits and reduced spinal reflexes and reactions. The owner reported that urinary and fecal incontinence had recently developed.

The owner also reported previous unsuccessful use of steroids and non-steroid anti-inflammatory medications.

Patient

"Macy", Boston Terrier, 7 yr, FeS

Treatment Rationale

This case presented interesting challenges since the neuropathy was long term, progressive and non-responsive to medications.

The owner's main goal in seeking therapy laser treatment was to improve the quality of Macy's life and to decrease the urinary and fecal incontinence.

During the initial consultation the owner was advised that although some neuropathies respond to laser therapy, Macy's prognosis was not good, and that treatment would have to be considered experimental and open-ended.

The owner agreed to twelve treatments over four weeks with a re-evaluation of Macy's condition after four weeks.

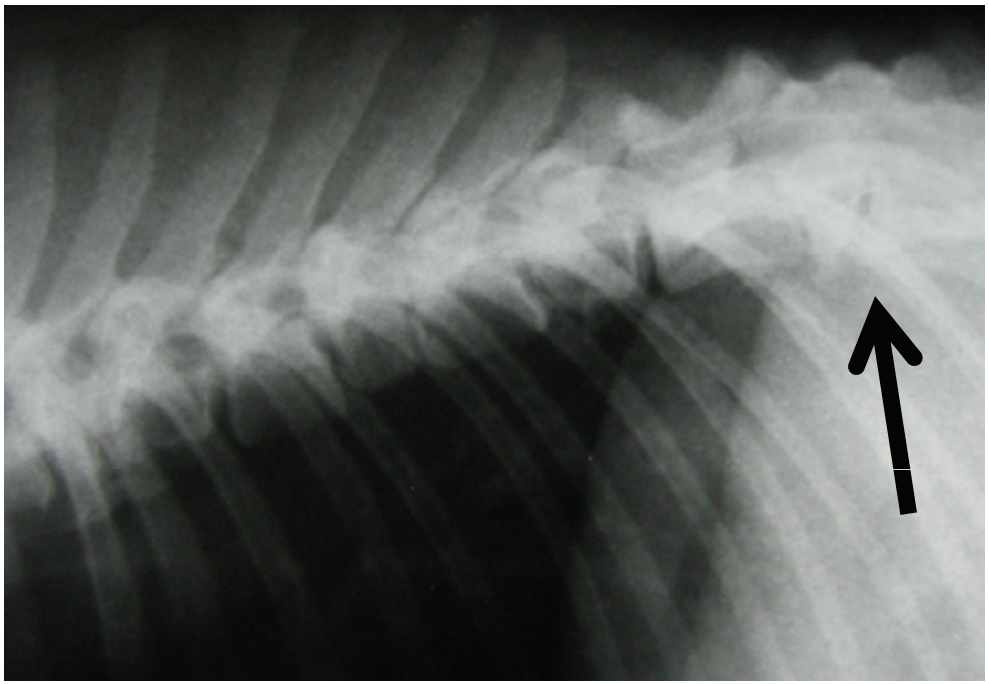

Fig. 2: Multiple hemivertebrae with collapsed disc spaces and kyphosis.

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Class IV Companion Therapy Laser Hemivertebrae Neuropathy

Case Study Provided By: John C. Godbold, Jr., DVM
Stonehaven Park Veterinary Hospital
Laser Surgery Center
Jackson, Tennessee

Treatment Protocol

To maximize the possibility of improving Macy's neurological function, a target dose of 10 Joules/cm^2 was prescribed three times a week.

Companion Laser Settings

The thoracic and lumbar spine were treated with:
10 Watts / 3 min / CW
The dorsocaudal abdomen was treated with:
10 Watts / 2 min / CW

Results

This patient showed no change in neurological status until after the ninth treatment. At that time her neurologic deficits had improved with an increase in proprioception.

The owner reported Macy was able to go up and down steps at home for the first time in several years and that involuntary urinations and defecations were no longer being noted.

Discussion

Although this patient's long term prognosis is not good, laser therapy improved her quality of life. The return of urine and fecal control was the most significant improvement.

Macy continues being treated. The frequency of treatments is being titrated down for long term maintenance.

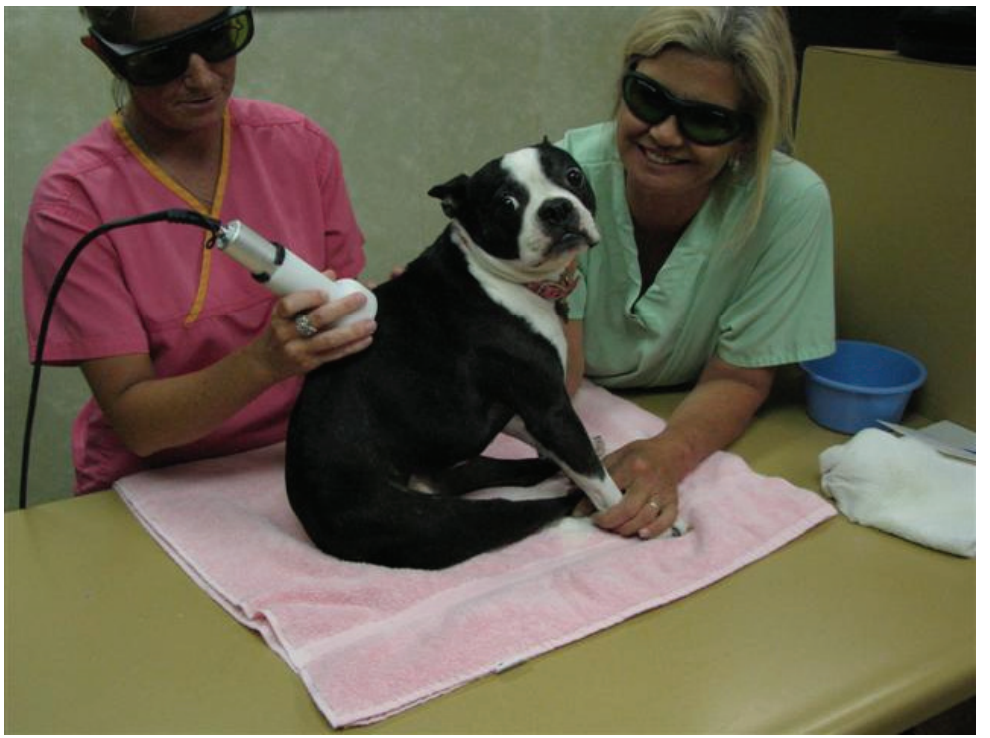

Fig. 2: Macy being treated with a "Roller Ball" handpiece attached to a ten watt therapy laser.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser
General Lower Urinary Tract Disease

Problem
Small animal veterinarians see a diversity of lower urinary tract diseases. Regardless of etiology, lower urinary tract disease includes pain, inflammation and the need for a healing process.

Patient
Both canine and feline patients with lower urinary tract disease are candidates for treatment with Class IV Laser Therapy.

Procedure
As an adjunct to traditional protocols for managing lower urinary tract disease, Class IV Laser Therapy can facilitate reduction of pain and inflammation and acceleration of healing.

The lower urinary tract can easily be laser therapy treated with patients in positions that do not require sedation.

Patients can be treated in a standing position, in a position with the fore limbs elevated, or, in dorsal or lateral recumbency. The soft tissue isolating the urinary bladder and pelvic and external urethra is minimal; thus, the effects of laser therapy are easily achieved in the target tissues.

Fig. 1: Trans abdominal wall treatment of the bladder and pelvic and penile urethra of patient with FLUTD caused by interstitial cystitis/urethritis.

Treatment was applied in both scanning and contact mode.

Note: in this picture digital photography makes the laser light appear blue and white, although being in the near infrared spectrum it is not visible to the eye.

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COMPANION THERAPY LASER

Class IV Companion Therapy Laser
General Lower Urinary Tract Disease

Class IV Therapy Laser Settings

Patients can be treated with a diversity of laser therapy protocols.

An excellent protocol for routine lower urinary tract disease when infection is present is the Contaminated Wound protocol:

2 Watts / 30 sec / 20 Hz
2 Watts / 30 sec / 500 Hz
2 Watts / 30 sec / 5,000 Hz
2 Watts / 30 sec / 10,000 Hz

Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema, at 5000 Hz accelerates healing and at 10,000 Hz has an anti-microbial effect.

Other protocols may be used. Those utilizing laser therapy as an adjunct in treatment of lower urinary tract diseases should consider each case individually and use a laser therapy protocol that best affects the symptoms of individual patients.

Size of the patient and the mass of tissue being treated should be considered with laser power settings being adjusted to deliver appropriate an appropriate target dose to the affected tissue.

Fig. 2: Trans abdominal wall treatment of the bladder and pelvic urethra of patient with lower urinary tract disease.

Smaller patients require fore limb elevation as shown. Larger patients can be treated in a standing position.

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COMPANION THERAPY LASER

Class IV Companion Therapy Laser
General Lower Urinary Tract Disease

Fig. 3: Trans-abdominal treatment of the urinary bladder in a fore limb elevated positioning.

Figs 4 & 5: Treatment of the urinary bladder in scanning and contact modes.

Figs 6 & 7: Treatment of the pelvic and post pelvic urethra from cranial and caudal directions.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser Fracture Healing

Problem
This stray patient was presented non-weight bearing on the left foreleg. Palpation revealed a non-mobile painful swelling of the distal antebrachium. Radiographs showed a partially healed fracture with anterior override of the distal segments and acceptable medial and lateral alignment.

Patient
"Teddy", Mix, 7m, M

Fracture management Approach
The adopting owners were given the option of surgery and internal fixation. Since the fracture site was non-mobile, they choose conservative management including laser therapy.

Class IV Therapy Laser Settings
The fracture was treated every other day for a total of six treatments.

4 Watts / 1 min / 500 Hz
4 Watts / 1 min / 1,000 Hz
4 Watts / 1 min / 2,500 Hz
4 Watts / 1 min / 5,000 Hz

Each treatment delivered 480 Joules to a 95 cm^2 area giving a target dose of 5 Joules/cm^2.

Rationale
Pulsed laser energy at 500 Hz reduces edema and at 1,000 Hz, 2,500 and 5,000 Hz has a biostimulatory effect and enhances healing.

Day 1 – Non-mobile partially healed fracture with anterior override of the distal segments. Patient was non-weight bearing

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Class IV Companion Therapy Laser Fracture Healing

Treatment Protocol and Technique
The patient was treated on day one with five subsequent every other day treatments.

During each treatment the fracture site was treated with a scanning technique, moving at a speed of one inch per second. The area was treated from all directions (360 degree treatment).

Patient Management
The patient was confined to allow moderate activity indoors and leash controlled activity outside. No splint or cast was applied. Weight bearing was allowed as healing progressed.

Results
The patient began limited weight bearing forty-eight hours after the initial therapy laser treatment. Weight bearing increased rapidly with full weight bearing noted twenty-one days after the initial treatment.

Radiographs showed much faster than expected ossification of the callus and remodeling of the fracture ends.

Day 9 – Nine days after initial therapy laser treatment. Greater than expected ossification of the callus.

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COMPANION THERAPY LASER

Class IV Companion Therapy Laser
Fracture Healing

Day 28: Twenty-eight days after initial laser treatment. Continued rapid ossification of the callus is seen as well as significant remodeling of the ends of the fractured bones. The patient was non-symptomatic at this time.

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Class IV Companion Therapy Laser
Fracture Healing

Day 1: Initial presentation and day of first therapy laser treatment.

Day 9: Greater than expected ossification of the callus. The patient was partially weight bearing.

Day 28: Marked ossification of the callus and significant remodeling of the ends of the fractured bones. The patient was non-symptomatic.

COMPANION THERAPY LASER

Class IV Companion Therapy Laser
Penguin Geriatric Arthritis

Case Study Provided By: Donald W. Streeme, VMD
Adventrure Aquarium
Camden, New Jersey

Problem
Degenerative joint disease of the stifles and hips.

Patient
“Penguin #10” 18 yr., Fe, 5.9 lb.

History
Penguin #10 developed a right sided limp in 2008 at 16 years of age. The limp became constant in 2009. Radiographs and CT scans at of the School of Veterinary Medicine at The University of Pennsylvania demonstrated degenerative joint disease of both stifles, more pronounced in the right stifle.

Medical Treatment
Dr. Donald W. Streeme initiated medical treatment with trials of Omega-3 Fatty Acids, Tramadol and Meloxicam. Penguin “10” showed the best response to meloxicam.

A challenge in managing her arthritis medically was a lack of data about dose and long term toxic effects of meloxicam in the species.

Fig. 1: Treatment of the right stifle and associated soft tissues. Treatment is directed from multiple angles with joint in normal position as well as extension and flexion.

Note: those treating Penguin #10 discovered she offered less resistance to handling if her head was gently cupped between an assistant’s hands.

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Case Study Prepared By: John C. Godbold, Jr., DVM, Jackson, Tennessee

Class IV Companion Therapy Laser Penguin Geriatric Arthritis

Case Study Provided By: Donald W. Streeme, VMD
Adventrure Aquarium
Camden, New Jersey

Class IV Therapy Treatment

With the cooperation of LiteCure Coporation, Dr. Streeme began treating Penguin #10 with a Companion Therapy Laser in March, 2010 in an attempt to reduce arthritis symptoms and reduce reliance on non-steroid anti-inflammatory medication.

Class IV Therapy Laser Settings (980nm)

Initially treatments were administered three times a week. The first several treatments were to her right stifle only, then treatment was expanded to include both stifles and hips. When treating both stifles and hips a total of 1200 Joules was administered:

5 Watts / 4 min / CW Target Dose: 8-10 Joules/cm^2

Results

After nine treatments, administrered over three weeks, Penguin #10 was able to walk normally.

At that time Dr. Streeme began reducing the frequency of treatments to find the minimum frequency that would maintain Penguin #10 without symptoms.

Results available at publication indicated she would require treatment every two weeks to maintain effect.

Fig. 2: Treatment of the right stifle and associated soft tissues. Treatment is directed from multiple angles with joint in normal position as well as extension and flexion.

COMPANION THERAPY LASER

Case Study Prepared By: John C. Godbold, Jr., DVM, Jackson, Tennessee