

Use of Acupuncture in combination with MLS® Laser Therapy in aged dogs with osteoarthritis: three clinical cases

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INTRODUCTION

Osteoarthritis in dogs is a slowly progressive inflammatory chronic disease, characterized by degeneration of the cartilage, hypertrophy of margins of the bones and changes in the synovial membrane. These alterations can cause decreased flexibility, lameness, stiffness and pain. Conventional treatments of osteoarthritis involve nonsteroidal anti-inflammatory drugs, corticosteroids, chondroprotectors and other complementary medications (i.e. gabapentin and amantadine). Pain management is the main goal of medical treatments, in order to improve the quality of life in old patients. Chronic conventional treatments could affect the patient health condition. Alternative therapies, such as acupuncture and MLS® laser therapy, are considered good options for the treatment of osteoarthritis in these patients. Multiwave Locked System (MLS®)

laser therapy has been clinically advised for treatment of several pathologies, including neuropathic pain and musculoskeletal diseases. It involves the use of two different and synchronized emissions. The average power of the device is 1.1 W with pulsed emission of 25 W. Studies demonstrated that MLS® therapy, in combination with pharmacological therapies, is able to improve general clinical condition of dogs affected of osteoarthritis. Acupuncture belongs to Traditional Chinese Medicine (TMC) and consists in stimulating specific points on the surface of the body (acupoints). The mechanism of action of acupuncture is complex and includes local mechanical effects and the modulation of peripheral and central nervous system pain signaling pathways. Acupuncture has been shown to activate afferent nerve fibers and regulate signaling

molecules, such as endogenous opioids, to mitigate pain.

This article is intended to share a previous experience in using MLS® laser therapy in combination with acupuncture in the treatment of pain of three aged dogs with osteoarthritis. The purpose was to manage pain reducing or stopping pharmacological therapies and to improve physical and psychological quality of life of these dogs.

CLINICAL CASES

Case #1

Slam, 16 Y, intact, male, Golden Retriever. Main problems: difficulty getting up, right hindlimb lameness, degenerative joint disease of metacarpo-phalangeal joints and generalized hypomyotrophy.

Actual treatment: grapiprant.

According to TMC: Kidney Qi Deficiency and Spleen Qi Deficiency.

Acupoints: VG20 (*Bai-hui*), VG17 (*Nao-hu*), BL20 (*Pi-shu*), BL21 (*Wei-shu*), BL23 (*Shen-shu*), ST36 (*Hou-san-li*) bilateral, BL40 (*Wei-zhong*) bilateral, GB34 (*Yang-ling-quan*) bilateral, KD1 (*Hou-quan*) bilateral, *Bai-hui*, *Liu-feng* of the thoracic limbs. MLS® laser therapy: point-to-point mode (six points) with 292 Hz frequency and fluence 4.06 J/cm² according to “arthrosis” program on metacarpo-phalangeal area of both limbs. Treatment sessions: once a week for eleven treatments. Outcome: after two weekly sessions, Slam was able to walk for about 20 minutes in the courtyard. For that reason, the grapiprant administration has been stopped. The patient was still uncomfortable in getting up. After the fourth session, owner claimed an overall improvement in mobility. For family reasons, the owner decided to stop further sessions for about one month. During this period, the owner reported a progressive

worsening of the previously described clinical signs. She decided to treat Slam with corticosteroids under advice of her vet. After that the owner contacted us to re-start the acupuncture and laser therapy. The patient showed an overall improvement in mobility and pain relief without any medication after at least seven sessions. Difficulty getting up has never been completely resolve.

Case #2

Iron, 15 Y neutered male, mix Labrador breed dog. Main problems: degenerative joint disease of the left elbow, suspected left cranial cruciate ligament rupture and painful at the lumbar region palpation. According to TCM: Bony BI Syndrome; Kidney Yin and Qi Deficiency. Acupoints: VG20 (*Bai-hui*), BL11 (*Da-zhu*), BL23 (*Shen-shu*), BL26 (*Guan-yuan-shu*), *Bai-hui*, *Shen-shu*, *shen-peng*, KD3 (*Tai-xi*) bilateral, KD6 (*Zhao-hai*) bilateral, SP6 (*San-yin-jiao*) right side, SP9 (*Yin-ling-quan*) right side, ST36 (*Hou-san-li*) right side, LI10 (*Qian-san-li*) left side, LI11 (*Qu-chi*) left side, SI8 (*Xiao-hai*) left side.

MLS® laser therapy: the treatment was carried out on points (six points) covering the whole left stifle joint with 18 Hz of frequency and 4.06 J/cm² according to "acute inflammation" program for the first two sessions, then point to point mode (six points) with 36 Hz of frequency and 4.01 J/cm² according to "chronic inflammation" for the last eight sessions (Fig.1).

For the left elbow, the treatment was carried out on points (six point) covering the entire joint with 292 Hz frequency and 4.06 J/cm² according to "arthrosis" program. A muscle scan was performed on the lumbar region with 36 Hz of frequency and 4.03 J/cm² accord-

ing to "back pain" program. The intensity was reduced to 75% due to the dark fur.

Treatment sessions: once a week for the first five treatments and once every two weeks for the last five treatments Outcome: Iron is initially treated with acupuncture and laser once a week for five treat-

ments and then every two weeks for the last five treatments. The owner reported an improvement after the second session; Iron started to walk better.

His lameness has never been completely resolved but he had a good relief of pain.

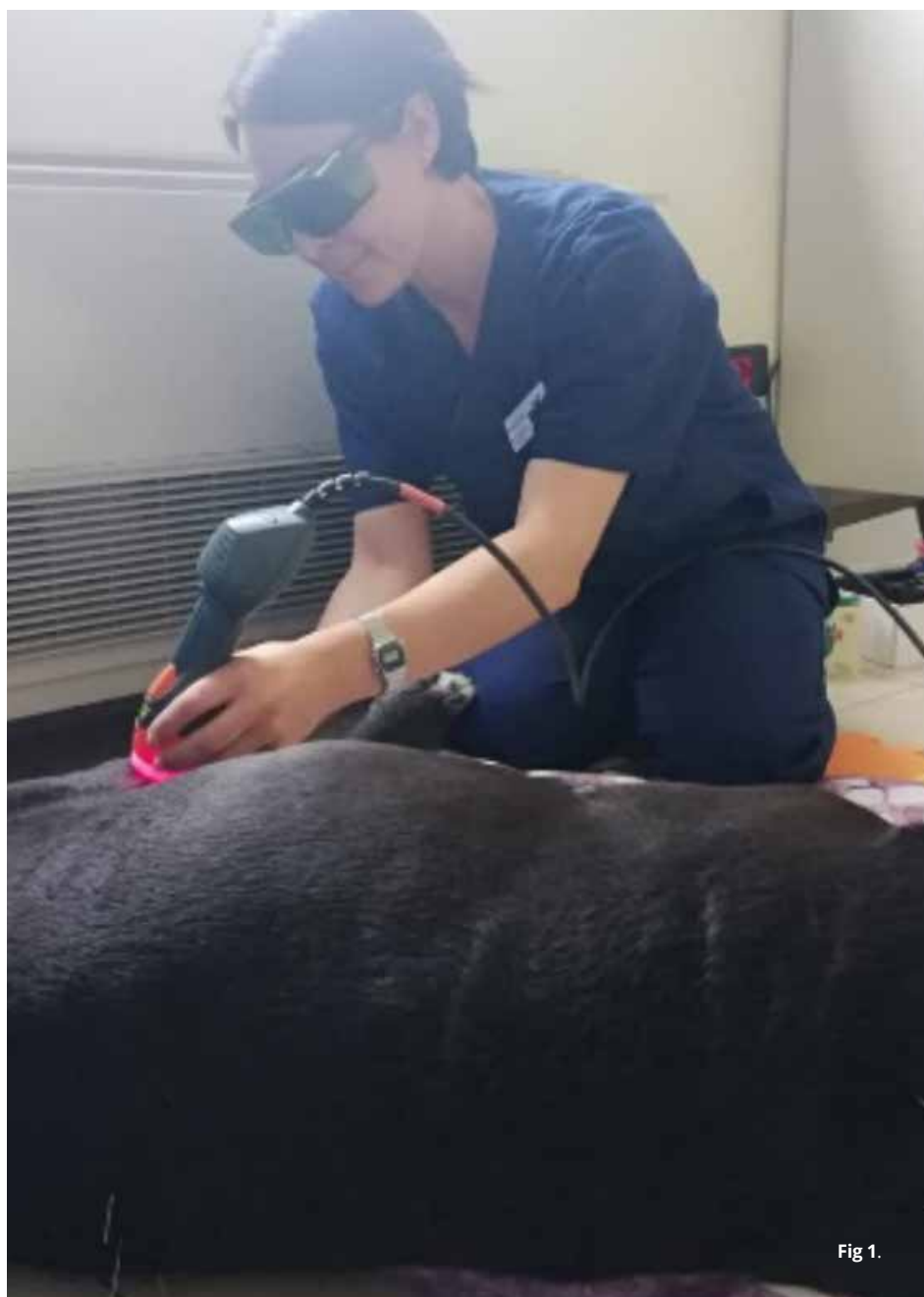


Fig 1.

Case #3

Calvin, neutered male Belgian Shepherd, 13 years old. Main problems: multifocal intervertebral disk herniation (L1-L7) and severe right sided hip degenerative joint disease associated with ipsilateral regional hypomyotrophy.

He is under robenacoxib and gabapentin because of a traumatic event during grooming three weeks before. According to TCM: Bony *Bi* Syndrome; Kidney Yin and Qi Deficiency.

Acupoints: VG20 (*Bai-hui*), BL11 (*Da-zhu*), BL23 (*Shen-shu*), BL26 (*Guan-yuan-shu*), *Bai-hui*, KD6 (*Zhao-hai*) bilateral, SP6 (*San-yin-jiao*) bilateral, ST36 (*Hou-san-li*), right side, LIV3 (*Tai-chong*) right side, LIV11 (*Yin-li-an*) right side, GB29 (*Lu-liao*) right side, BL54 (*Ba-shan*) right side, GB30 (*Huan-tiao*) right side. MLS® laser therapy: the treatment was carried out on points (six points) covering the right hip joint with 292 Hz frequency and fluence 4.06 J/cm² according to "arthrosis" program (Fig.2).

A scan phase on the lumbar region was performed with 36 Hz of frequency and 4.03 J/cm² according to "back pain" program. The intensity was reduced to 75% due to the dark fur. Treatment sessions: once a week for four treatments.

Outcome: the owner reported a sudden improvement in mobility after one treatment and returned to normal after the third treatment. Calvin had a general improvement in mobility and started to jump again; for that reason, we decided to stop all medications.

A slight right sided hindlimb stiffness was still noticed, with no apparent pain at extension of the hip.

DISCUSSIONS

Acupuncture and MLS® laser therapy have proved to be useful in the treatment of chronic musculoskeletal conditions such as osteoarthritis in older dogs. The contribution of acupuncture to pain control includes muscle relaxation and improvement in oxygen and nutrient

distribution to the affected area. In a veterinary previous study, MLS® laser therapy demonstrated the same efficacy in pain and inflammation control as drug therapy, but without its side effect, in dogs with osteoarthritis. Therefore, the use of a multimodal therapeutic approach may reduce doses of conventional



Fig 2.

analgesics and their adverse effects, an important concept in geriatric patients. General owner's subjective impressions were that dogs treated with acupuncture and laser therapy were more able to walk and had less exercise intolerance.

Stiffness and rigidity were non completely resolved but an overall improvement in quality of life, both physically and psychologically, was noticed. Due to the limited sample size and the absence of validated pain scales, such as Helsinki Chronic Pain Index, during follow up, this study represents a preliminary investigation.

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