THE LONG TERM MANAGEMENT OF DIABETIC NEUROPATHY WITH HIGH POWER LASER THERAPY (HPLT)

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CLASS IV LASER THERAPY CASE REPORT

OBJECTIVE:

To demonstrate the efficacy of High Power Laser Therapy as a treatment solution for a patient with chronic non-responsive peripheral neuropathy.

HISTORY AND CLINICAL EXAMINATION:

This patient is an 89 year old female who presented in 2007 with pain and severe burning in both feet of two years duration. She rated her pain as an eight on a visual analog pain scale at the time of presentation. She is a non insulin dependent diabetic. She had failed all types of medical management including Anodyne treatments. At the time of presentation, she was taking 1,200 mg of Neurontin per day.

CLINICAL EXAMINATION:

Peripheral pulses were diminished in the Dorsal Pedis and Posterior tibial arteries bilaterally.

NEUROLOGICAL EXAM:

DTR: 2-/2 and symmetrical. Myotomes were 5/5 and symmetrical. Sensation: reveled hypesthesia from the metatarsals to the distal phalanges bilateral. Tinel's sign was positive over the fibular heads and post Tibial nerves for radiating paresthesias.

ORTHOKINETIC EXAMINATION:

Reveled moderately advanced subtalar pronation. Dynamic gait scan revealed areas of increased pressure over the metatarsal heads.

DIAGNOSIS:

Peripheral Neuropathy resulting in Causalgia.

TREATMENT PLAN (METHODS) AND RESULTS:

The patient was fit with corrective orthotics to correct abnormal biomechanics and remove abnormal pressure areas from the plantar surface of the foot. She was then treated with High Power Laser Therapy (HPLT). The exact protocols are proprietary. After her first treatment, she indicated a significant reduction in burning pain. After completion of a course of therapeutic high power laser therapy performed three days each week for approximately 8 weeks, she was completely pain free and her sensation to pinprick had gradually increased. Her clinical exam revealed a dramatic improvement in her peripheral pulses in the ankles and feet (Dorsal Pedis and Posterior Tibial Artery). Only patchy areas of hypesthesia remained. The patient refused maintenance treatments at that time. Table 1 outlines the chronological results for the initial course of treatment.

Treatment	Wattage	Time(minutes)	Dosage(Joules)	Treatment Notes
1	2.5	30	4,500.00	Pain & burning in feet & toes
2	3.5	30	6,300.00	Noticeable improvement
3	3.5	30	6,300.00	Soreness on dorsum of foot
4	4.5	30	8,100.00	Numbness from mets to toes
5	5	30	9,000.00	Less leg/foot pain
6	5	30	9,000.00	Tightness in calf & foot
7	6	30	10,800.00	Pulses are improving with treatment
8	6	30	10,800.00	No allodynia, sensation is improved
9	6.5	30	11,700.00	Sensation to pinprick shows improvement from mets to toes
10	6.5	30	11,700.00	Stiffness on plantar & dorsum of feet
11	6.5	30	11,700.00	Mild lymphedema around lateral maleoli
12	7.5	30	13,500.00	Sensation of thickness/ stiffness on plantar surfaces of feet
13	7.5	30	13,500.00	No pain or burning, mild proprioceptive loss in feet & ankles
14	7.5	30	13,500.00	No dysesthesias in legs/feet/toes
15	7.5	30	13,500.00	Patient is asymptomatic, pulses are strong bilateral

Table 1 – Results Initial Course of Treatment

COURSE OF REGRESSION:

The patient indicated that she remained pain free for almost one year before a gradual return of her symptoms began.

TREATMENT PLAN:

The patient once again returned for HPLT. After a therapeutic course of 15 treatments, she was once again returned to a completely pain free status.

THERAPEUTIC MAINTENANCE PLAN:

She is now able to maintain her status without any activity intolerance whatsoever by participating in maintenance therapy approximately 60-90 days.

CONCLUSION:

High Power Laser Therapy has been demonstrated to accelerate nerve regeneration[3,4] as well as vasodilation of blood vessels and neo-capillary formation[1,2,5,6]. It is safe and virtually free of side effects. As demonstrated in this case study, HPLT is much more than a deep heating modality[8]. This opinion is proven by the fact that no other form of medical management to date has ever delivered almost twelve months of pain free living for a neuropathy patient! This would also include any form of soft tissue heating modality. Clearly at this time, a large scale blinded study with a control group and sham treatment needs to be done to further evaluate HPLT results with neuropathy patients on a long term basis.

ABOUT THE AUTHOR

Dr. Costello is a Board certified chiropractic orthopedist. He is also Board certified in quality assurance and utilization review, and has been practicing continuously in Palm Beach County for 26 years. Dr. Costello was formerly the president Florida College of Chiropractic Orthopedist (1993 to 2005), and also the chief of clinical services Avicenna Laser Technology (April 2006 through September 2011). He is a published author and lecturer on Class IV laser therapy and clinical practice.

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Source of Study: AspenLasers.com

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