Laser Report
WINTER 2005 ISSUE
Meditech INTERNATIONAL INCORPORATED BIOFLEX

In this issue of the Laser Report,

Meditech is pleased to present solutions for two medical conditions for which there is currently no effective therapy.

The first is lymphedema, specifically the chronic variety which is not relieved by therapies in the market place today. We have treated numerous cases and in our report review two patients which most emphatically support our position. We feel that this advance, achieved with the Bioflex System is unprecedented in the medical annals to date.

Perhaps even more significantly, we present a treatment for diabetic ulcers and salvaging pre-gangrenous limbs. Again in the medical regimen there is no effective therapy for this condition. Many of these patients receive daily home care which in our experience often appears to be part of the problem. The latter approach coupled with massive doses of antibiotics clearly has no value whatsoever; indeed, localized care appears to encourage infections, macerates the tissues and in essence compounds the dilemma. Case workers apply a variety of unguents and lotions, dressings soaked in betadine and tightly applied to the afflicted areas. Instead of healing the pathology, day by day the ulcers increase in magnitude, infection extends, arterial circulation diminishes and invariably after several months legs require amputation. Recently, we see these badly managed limbs come into our clinic and in a matter of three to four weeks, by changing the therapeutic approach the extremity is salvaged.

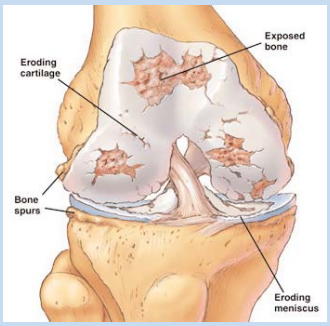
Primarily, the treatment platform consists of laser therapy, leaving the wounds open, cleansing them with hydrogen peroxide several times daily and compressing them with warm saline as much of the time as possible. Additionally, we use the hyperbaric chamber to facilitate the healing process and this is a dramatically effective approach. It should be clearly understood that the use of antibiotics, the application of local therapies other than those that we recommend and daily dressings never, in our experience, have salvaged a limb.

In addition to the above features we also introduce a new therapeutic protocol for the treatment of knee pathologies and a commentary on the Vioxx situation in context with the entire medical-pharmaceutical approach. We feel that this report is of immense significance and hope that you will share these advances with us.

www.meditech-bioflex.com

In the News at Meditech

New Protocol for Degenerative Osteoarthritis of the Knees and other Pathologies



Currently with the majority of knee pathologies we treat around the entire circumference of the knee. Fifty to 60% of the duration of the treatment is directed at the compartment most severely afflicted (usually the medial compartment). The remainder is apportioned to the lateral compartment and the popliteal space as indicated. Both large surface red and infrared arrays are utilized as well as the 75mw laser probe.

This maneuver provides better penetration into the entire knee joint and has been found to be more effective than the previous arrangement, treating only the medial and lateral compartments in most instances.

It should be noted that generally the knee is best treated in a flexed position 15 degrees short of 90 degrees. For penetration to the posterior aspect of the patella and the patellar compartment, flexion of the knee to 90 degrees may be advisable.

Knees that have a significantly larger circumference may require up to an hour of treatment whereas with a smaller anatomical configuration a treatment of 30 minutes should suffice.

Lymphedema
A Review and Case Profiles

Fred Kahn, M.D., F.R.C.S.(C) – Ailin Oishi-Stamatiou, B.Sc., D.C.

Lymphedema of the extremities remains a therapeutic challenge. As a result, many therapies have been devised but none have produced superior outcomes. Two types of lymphedema occur, primary and secondary.

Primary lymphedema is rare resulting from a congenital abnormality of the lymphatic system. Secondary lymphedema is the most common form and results from the interruption or obstruction of the lymphatic channels. Secondary lymphedema may be categorized as acute or chronic. The acute type is generally secondary to trauma and is easily resolved by conventional methods. The chronic version is a more vexing condition, generally only minimally improved by technologies currently in use, with recurrence when therapy ceases. Most frequently chronic lymphedema occurs post-mastectomy and following a variety of other surgical procedures that involve disruption of the lymphatic channels and nodes. It also occurs secondary to congestive heart failure, chronic liver disease, thrombophlebitis and gravitational dependency.

Etiology

Acute	Chronic
• Trauma	• Thrombophlebitis
• Surgery	• Congestive Cardiac Failure
• Burns	• Immobilization
	• Dependency
	• Post Radiation
	• Renal Failure
	• Hepatic Disease
	• Systemic Infections
	• Genetic

Mechanism & Physiology

Edema of the extremities and other anatomical regions results from the abnormal collection of fluids and proteins in the superficial connective tissues. These substances have not been absorbed by the lymphatic system. Their composition consists of transudate from the cells or exudate from the lymphatic and vascular channels. Duration varies from days to years. Chronic lymphedema is characterized by firm induration and cyanosis as arterial compression progresses.

Conventional Therapies

1. Elevation of extremity above level of heart

2. Variety of compression techniques
   - i. Pumps
   - ii. Bandages
   - iii. Fitted garments

3. Manual Procedures
   - i. Massage
   - ii. Compression

It should be noted that there is no effective drug therapy available. Diuretics are frequently utilized but not recommended for long term use. The above listed conventional therapies do not provide long term solutions. Outcomes are usually limited at best and require prolonged periods of treatment without permanent relief or cure.

Case Profile #1

- **80 year old male.**

Initial:
Cyanosis – marked,
Induration – severe.
No peripheral arterial pulse palpable
Poor venous filling
6cm mid-calf diameter increase compared to left

Interim:
After 4 treatments

Final:
After 10 treatments
Cyanosis and induration gone
Good venous filling
Mid-calf diameter same as left

Diagnosis

- Chronic lymphedema, right lower extremity.

Duration

- 3 to 4 years. Progressive in nature.

Etiological Factors

- Post harvesting long saphenous vein (coronary bypass procedure)
- Gravitational dependency
- Recurrent congestive heart failure

Findings

- Initially affected extremity circumference mid-calf 6 cm greater than opposite side
- Firm non-pitting induration
- Moderate cyanosis
- Poor venous filling
- No palpable arterial pulse distal to femoral pulse

Treatment

- Ten one-hour sessions over four week period utilizing the Bioflex Low Intensity Laser Therapy System. Treatment was applied over the sympathetic nervous system and locally.

Outcome

Objective

- Mid-calf circumference same as opposite side
- Resolution of cyanosis and induration
- Restoration of venous filling and peripheral arterial pulses
- Normal skin temperature

Subjective

- Absence of sensation of heaviness, chronic aching
- Activity level restored to normal

No regression or recurrence four months post-cessation of treatment.

Case Profile #2

- **58 year old female**

Initial:
Before treatment
Lympedema / Cellulitis

Interim:
After 3 treatments

After 9 treatments
Mid-calf diameter diminished: 5cms

Diagnosis

- Chronic lymphedema of left lower extremity with accompanying cellulitis

Duration

- Liver transplant in 1986 precipitated by hepatitis and hepatic failure

Etiological Factors

- Thrombophlebitis of deep veins
- Anti-rejection medications
- Hypoalbuminemia
- Gravitational dependency

Findings

- Initially right leg mid-calf circumference – 35 cm
- Left leg mid-calf circumference – 43 cm

Treatment

- 9 one-hour sessions over three weeks using Bioflex Low Intensity Laser Therapy System in circumferential manner
- Therapy was applied locally

Outcome

- Left leg mid-calf circumference – 38 cm
- Cellulitis 90% resolved without antibiotics

(Note - At this time patient moved away and is continuing treatment at another facility using the Bioflex System.)

Discussion of Lymphedema

Large surface treatment arrays are applied in circumferential fashion to the affected areas. In these situations arterial circulation is compromised; in order to relieve this and enhance reduction of the edema, Low Intensity Laser Therapy may also be applied to the appropriate dermatomes of the spinal column, resulting in a sympathectomy-type effect. We utilize this technique in the treatment of edema in both the upper and lower extremities. This accelerates resolution of the pathology and its ensuing complications.

Conclusion

Low intensity laser therapy is effective in the treatment of both acute and chronic lymphedema. Notwithstanding duration of the condition in our experience, response is rapid with total elimination of the condition in less than four weeks.

The Bio-flex Low Intensity Laser Therapy System is recommended as the therapy of choice in treating lymphedema.

References

Browse, N., Burnand, Kevin G., and Mortimer, Peter S.: Disease of the Lymphatics, Arnold Publishers, 2003
2 Guyton, A.C. and Hall, J.E.: Textbook of Medical Physiology 10th Edition, Philadelphia: W.B. Saunders Company, 2000

Low Intensity Laser Therapy in the Treatment of Periphero-Arterial Occlusive Disease

Fred Kahn, M.D., F.R.C.S.(C) – Ailin Oishi-Stamatiou, B.Sc., D.C.

This study consists of two patients who had previously been subjected to amputation of a lower extremity and were facing a similar situation at time of presentation in March 2004. Both had suffered from a longstanding history of arterial insufficiency, accompanied by multiple dermal ulcers.

In each instance, the forefoot was deeply cyanotic and edematous, the mid-foot demonstrated violent erythema and both feet were cold to the touch. There was a history of unrelenting pain and inability to sleep. Symptoms were being managed by the utilization of multiple pharmaceuticals including analgesics, medications for sleep and depression, along with aggressive oral and intravenous antibiotic therapy and various ointments applied locally.

Case #1: WLF

Initial

Interim:
2 days after initiating treatments, foot no longer in jeopardy. Improved arterial circulation and venous filling.

Final:
June 11, colour normal, ulcers almost healed, foot warm to the touch, ready for weight bearing.

Diagnosis

- Buergers Disease (Thromboangiitis Obliterans)

Surgical Procedures

- Amputation left leg April 2003

Therapy/Medications

- Analgesics, vasodilators, antidepressants, sleeping medications, localized wound care consisting of anti-inflammatory, antibiotic ointments.

Medical/Social History

- Age 58
- Property Manager confined to a wheelchair. Has left prosthesis. Unemployed one year. Clinically depressed.

Case #2: DM

Initial:
Photos (top to bottom) demonstrating dermal ulcers of diabetic extremity

Interim:
Five days after initiating treatment, 4 ulcers on forefoot healing rapidly.

Final:
Colour normal, improved circulation, all ulcers (initially 8) except 1 on anterior tibia and heel, resolved. Weight bearing comfortably

Diagnosis

- Diabetes Mellitus with advanced atherosclerosis.

Surgical Procedures

- Amputation right leg May 1999.
- Amputation left 5th toe Sept 1999
- Bilateral femoro-popliteal bypass grafts 1998
- Penile implant 1984

Therapy/Medications

- Antiobiotics: Ceftazidime IV, Clindamycin orally.
- Other: Altace, insulin injections twice daily, debridement by home care daily, dressings and utilization of copious amounts of antibiotic, anti-inflammatory ointments.

Medical/Social History

- Age: 61
- Semi-retired, manager of a delivery business.
- Has right prosthesis. Walking minimal due to intermittent claudication and pain in foot. Demonstrated fear, anger and depression.

Results

In both cases, following two treatments with Low Intensity Laser Therapy over consecutive days, the feet became relatively warm and pain diminished markedly along with the cyanosis and erythema. The mobility of both feet and toes was largely restored and the extremities were no longer deemed to be in jeopardy.

Method of Treatment

I. Laser was applied over the lower spinal cord including the nerve roots, in addition to the autonomic nervous system and the ganglia. It should be noted that the sympathetic part of the autonomic nervous system has

(continued next page)

significant systemic effects on tissue, specifically an increase in:

a) Arterial pressure.
b) Blood flow to active muscles.
c) Rate of basal cellular metabolism throughout the body.
d) Blood glucose concentration.
e) Gycolysis in the liver and muscle.

Preganglionic motor neurons of sympathetic nerve fibers originate in the spinal cord between cord segments T1 and L5, passing via the sympathetic ganglia chain to synapse with the postganglionic neurons in the tissue and organs of the body. This explains the decision to treat the sympathetic and central nervous system which regulate the vascular structures of the lower extremities.

II. Low Intensity Laser Therapy was also applied to the tissues locally. It has been well documented that laser has significant anti-inflammatory and analgesic effects in addition to stimulating angiogenesis.

Treatments were applied initially for 3 consecutive days and subsequently on alternate days until a state of stability had occurred and the limbs were felt to be satisfactorily healed to sustain weightbearing. Medications were gradually discontinued with the exception of insulin injections in the diabetic situation. The ulcer on the heel of the diabetic patient had decreased in size by 70% and was healing satisfactorily after 2 weeks of treatment. All other ulcers had healed almost completely.

Conclusions

1. These cases illustrate the dramatic effectiveness of Low Intensity Laser Therapy in the treatment of periophero-vascular occlusive disease.

2. Moreover, they indicate the need for practitioners to re-evaluate the current therapeutic approach based on the use of high doses of antibiotics, analgesics, vasodilators, anti-inflammatory agents and local ointments applied to the ulcers. It is clear that this approach appears to be ineffective and indeed, may be counterproductive as some ulcers continued to enlarge despite aggressive drug therapy.

3. From a clinical perspective it is conceivable that the previous amputations may have been avoidable.

4. A superior approach of the treatment of arterio-vascular occlusive disease is demonstrated and the recommendation is that it should be more widely employed.

References

Guyton, A.C. and Hall, J.E.: Textbook of Medical Physiology 10th Edition, Philadelphia: W.B. Saunders Company, 2000
2 Karu, T.: The Science of Low Power Laser Therapy. Gordon and Breach Science Publishers, 1997

Medical Comment RE: Vioxx and other Pharmaceuticals

Fred Kahn, M.D., F.R.C.S.(C)

For the past several years, I have advocated that NSAIDs are useful only to mask symptoms and are responsible for many significant negative side effects with long-term use. In my opinion, the well-publicized withdrawal of Vioxx is just the beginning. Over the next few years I am certain we will become aware of the detrimental effects of other NSAIDs and their subsequent withdrawal from the market.

In a recent article, Barron's magazine espoused the wonderful effects of the statins (anticholesterol drugs) including several name brands. I believe that these drugs are an even greater hazard than NSAIDs. The negative effects are extensive and can lead to hepatic and multiple organ failure.

Recently, I was amazed to hear a cardiologist on international television state that, "…if President Clinton had adhered to a regular program utilizing statins he would not have required a coronary bypass."

Individuals who wish to lower their cholesterol should do so by adopting an appropriate diet and exercise program. There are no short cuts to good health.

It is encouraging to note that numerous independent publications and research centers are appropriately condemning many of these "tailored for profit" designer drugs and exposing this serious danger.

While, we are all well aware of the financial interests of the drug companies whose focus is the promotion of pharmaceutical products for financial gain, the medical profession has a responsibility to protect the public and the individual patient.

Meditech International Inc. – Seminars 2005

Meditech International Inc., promotes the correct medical application of Low Intensity Laser Therapy with regular monthly seminars. Additionally the company sponsors an Annual International Seminar on Advances in Low Intensity Laser Therapy (LILT) with lectures by recognized specialists in the laser field.

Program Information

The Meditech LILT Training Program is a 2 day seminar, focusing on the Theory and Application of Low Intensity Laser Therapy.

All seminars include course material, structured classroom presentations on theory, research and hands on clinical exposure. Monthly seminars are conducted at the Corporate Offices of Meditech International Inc., and the Meditech Laser Rehabilitation Clinic.

Topics Covered include:

- An Overview of the Development of LILT, Advances and Presentation of Case Studies
- Practical application of LILT for the treatment of numerous pathologies
- Mechanisms of Action (Research studies)
- Clinical documentation

A course workbook is forwarded to the registered delegate before the course begins. All presentations are offered in hard copy and available in electronic format, at the completion of the program.

A Certification Document is issued upon completion of the Course, with Clinical and Class hours noted for CME credits.

Seminar Dates and Timetable

January	14 – 16
February	18 – 20
March	18 – 20
April	15 – 17
May	20 – 22
June	17 – 19
July	15 – 17
August	19 – 21
September	16 – 18
October	14 – 16
November	18 – 20
December	16 – 18

Friday	9.00 AM – 5.00 PM
Saturday	9.00 AM – 2.00 PM
Sunday (*optional*)	9.00 AM – 2.00 PM

The program begins on a Friday continuing through Saturday and an optional Sunday.

Please direct any and all additional information requests to Meditech International, Inc.; Leslie Perrin.

For course program e-mail: lp@meditech-bioflex.com
Hotel and travel information is available on request.

In the next issue of the Laser Report, we will examine the cost savings and effectiveness of conventional wound care compared to Meditech's new approach to the management and treatment of wounds. Recently, we have reviewed the costs of treating wounds. Our program can reduce treatment costs by 75%. The costs and benefits of improving wound care have significant implications for healthcare providers and patients.

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