

In this issue of the Laser Report,

- five topics have been selected for review.

The first is a précis of Low Intensity Laser Therapy in the treatment of carpal tunnel syndrome. This section also outlines some of the research currently being carried out at Meditech, which has produced some exciting preliminary results.

Sector two highlights two clinics utilizing the BioFlex Professional LILT System. Included are the clinics of Dr. Ayad Kurukgy an orthopedic surgeon who opened the first clinic in the UK and doctors Don and Maureen Henderson who have recently added Low Intensity Laser Therapy to their practice in Toronto.

The "Social Commentary" section provides important insights into the Laser Therapy Device Market. This has been a difficult area for practitioners attempting to select the proper system for their practice. Some important considerations are clarified.

Sector four is a treatise regarding Low Intensity Laser Therapy in the treatment of gout. In our practice we see a significant number of patients who either cannot tolerate pharmaceuticals or the latter have become ineffective. Again, this experience demonstrates the effective implementation of Low Intensity Laser Therapy in medical conditions resistant to conventional therapies.

Finally, we provide a brief review of the 4th International Low Intensity Laser Therapy Conference hosted by Meditech from April 21st - 23rd, 2006.

Photo's from the 4th International Low Intensity Laser Therapy Conference



The Meditech staff welcoming the participants



Dr. Kahn opens the
4th International Low Intensity
Laser Therapy Conference

In the News at Meditech

Prior to the end of 2005, Meditech was requested to donate Low Intensity Laser Therapy systems to aid in the **healing of landmine victims**, particularly children in hospitals in both Afghanistan and Cambodia. The company was pleased to donate two complete BioFlex Systems and provide training and education for the medical staff. These systems have been **extremely helpful and effective** in the treatment of severe complex wounds, particularly those secondary to mine explosions. The principals of Meditech are gratified to have been able to provide this type of aid to these countries which are currently under considerable duress.

In June/July of this year, five **Meditech employees** are opening their own clinics; three in Ontario (Brampton, St. Catharines and Mississauga) and two in Europe (Dublin, Ireland and Stuttgart, Germany). Clearly this validates the efficacy of our clinical approach and will initially result in the sale of 18 BioFlex units.

Meditech Rehabilitation Centres has partnered with **CareCredit** to offer financing for Low Intensity Laser Therapy. CareCredit is a convenient, low minimum monthly payment program designed specifically for healthcare services not covered by insurance.

Of major significance will be the release of the **Therapist Professional System** and two versions of the **Home Unit** that will be available in August of this year. Meditech is pleased to announce that it has over 150 orders for these systems outstanding. The availability of the Home Unit which can be leased or sold by clinicians to their patients is a major advance in bringing Laser Therapy to a wider sector of the population. Utilization of these systems should prove a significant benefit to all individuals; particularly athletes, arthritis sufferers, and those who for geographic reasons are unable to visit a therapy clinic on a regular basis.



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Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is a debilitating disease entity that can severely impact the patient's quality of life. It is characterized by symptoms including pain of the hand and wrist, in addition to tingling and numbness along the median nerve distribution. Until recently, surgery was the primary option available to patients seeking a long term solution to this problem. At Meditech Rehabilitation Centres we have treated over two hundred patients with CTS and the results have been uniformly outstanding. At this time we continue to conduct ongoing studies utilizing LILT in the treatment of CTS. All patients suspected of having this problem are evaluated prior to therapy being initiated using nerve conduction studies. These may be carried out throughout the course of the treatment and subsequent to discharge at which point all symptoms have been completely relieved.

Anatomy

The carpal tunnel is a somewhat narrow canal in the wrist that is surrounded on three sides by the palmar aspect of the carpal bones and covered by the flexor retinaculum (Figure 1). In addition to

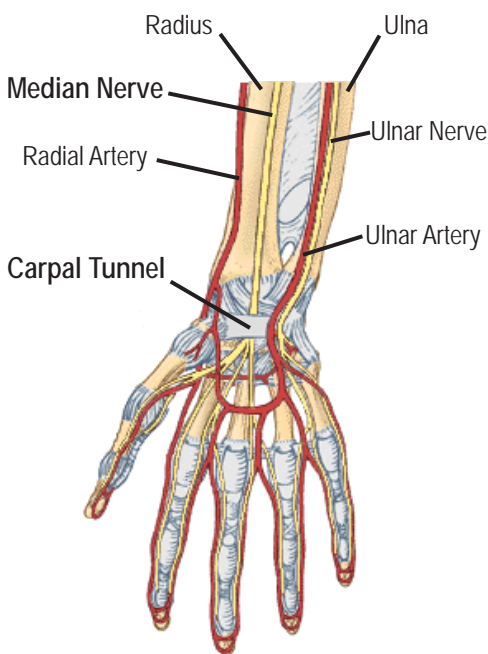


Figure 1. The anatomy of the wrist including major arteries, ligaments, tendons and nerves.

the median nerve, the flexor tendons also traverse this pathway.

Etiological Factors

CTS occurs when the median nerve becomes compressed at the wrist (Figure 2). This nerve controls sensation to digits 1, 2 and 3, as well as the lateral aspect of digit 4. In addition, it controls the motor function of many of the small muscles in the hand. The etiological factors with regard to CTS consist of a combination of causes that increase pressure on the median nerve and tendons in the carpal tunnel, rather than just the nerve per se. These include a genetic - anatomical variation predisposing to a restricted carpal tunnel dimension. Many cases of CTS are caused by repetitive motion of the wrist and digits. At one time the belief was that computer/keyboard work provoked and even caused CTS; recently two large studies^{1,2} report that this concept is not correct and computer/keyboard work may not even be a factor in the development of CTS. There are many other factors that contribute to the cause of CTS including:

- Trauma to the wrist (i.e. sprain, fracture, contusion, etc. with resulting edema)
- Hyperactivity of the pituitary gland
- Hypothyroidism
- Rheumatoid arthritis
- Mechanical problems of the wrist
- Work stress (i.e. repeated use of vibrating tools)
- Fluid retention during pregnancy
- Development of a cyst or tumor in the canal

Diagnosis

Early diagnosis is important in minimizing long term damage to the median nerve. A thorough physical examination is required to determine the correct diagnosis. Testing for both Tinel's sign and Phalen's maneuver can often indicate the extent of the disease. It is appropriate to use nerve conduction tests to confirm a diagnosis

and periodically test the progress with regard to the status of the median nerve. A delayed response time infers the correct diagnosis in addition to providing an accurate representation of the degree of severity.

In excess of 60% of patients that present at our clinic with presumptive CTS are inappropriately diagnosed. On the other hand approximately 20% of patients are borderline and may have concomitant pathologies along with compression of the median nerve. This can make a definitive diagnosis difficult to achieve in some instances.

One must always rule out lesions of the cervical spine, brachial plexus, shoulder and elbow in addition to other conditions existing at the wrist. The most common of these of course is degenerative osteoarthritis of the cervical spine with nerve root compression. Ulnar neuritis at the elbow must also be considered and again may coexist with CTS. Again a careful clinical examination along with a nerve conduction test aid considerably in establishing the correct diagnosis, which sometimes may be neither simple nor straightforward.

In certain situations, a test treatment of 5 sessions can be applied for CTS to determine if significant improvement occurs. At our clinic this is carried out utilizing the BioFlex Low Intensity Laser Therapy System and if after several sessions (5+) significant improvement occurs, this will confirm the diagnosis. Although remote, other causes may be intra-cranial or in the spinal cord itself.

Always remember to rule out other etiologies and attempt to achieve positive confirmation of the diagnosis utilizing a nerve conduction test.

Prevention and Treatment

Prevention of CTS is often difficult for people who earn a livelihood utilizing their hands. Avoiding forceful, repetitive activities of the hand and wrist can often relieve symptoms, but on resumption of these activities

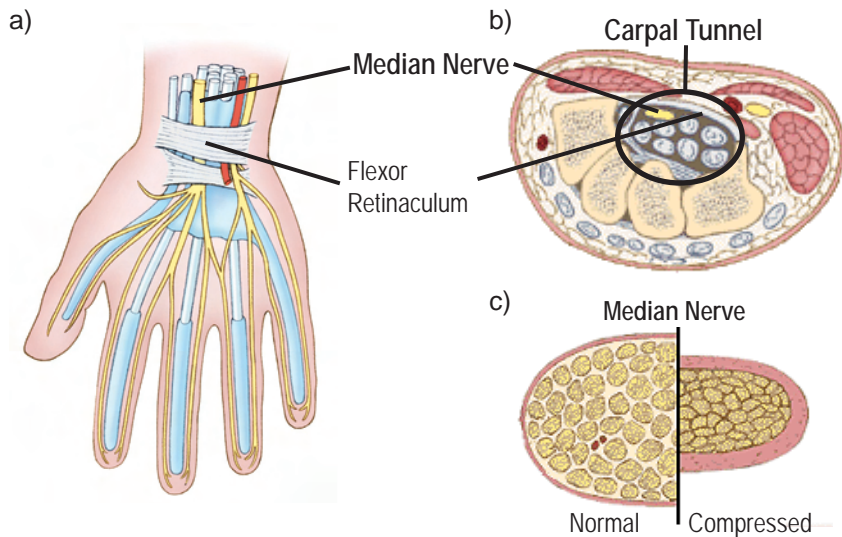


Figure 2. Carpal tunnel syndrome.

- a) The wrist and hand with ligaments and nerves.
- b) A cross section of the wrist at the carpal tunnel including ligaments and median nerve.
- c) Compression of the median nerve in CTS compared with a normal median nerve.

the symptoms generally return. Rest periods can be implemented throughout the work-day with multiple mini-breaks being more effective than less frequent longer breaks. Decreasing the stress on the structures of the wrist by constructing ergonomic work stations has also been shown to decrease the prevalence of CTS.

Some authorities have suggested that dietary factors may be responsible for the severity of the symptoms. Analgesics, anti-inflammatories and vitamins have been utilized to improve symptoms although no resolution of the underlying pathology is achieved.

In some centers the majority of patients with CTS are prescribed rest to the affected area for several weeks. Unfortunately this means that patients are unable to work and the employer must at least temporarily replace their positions. Splinting of the affected wrist during sleep and/or activities is also popular in some centers; however is not advisable as it can cause muscle atrophy and again does not produce a permanent solution.

Steroid injections into the carpal tunnel have also been shown to provide temporary relief (2 - 4 months).³ A review of the effectiveness of this

solution revealed that at 18 months following the injection only 22% of patients were still symptom free.⁴ Steroid injections mask the underlying pathology and as such should only be used as a temporary solution in acute cases.

Prior to the adaptation of LILT, surgery was generally utilized by most medical practitioners, and is still performed in approximately 45% of CTS cases. This is only recommended when the disease has progressed from moderate to severe status and has existed in excess of 6 months. Open release surgery is the traditional procedure to correct this problem. This involves a long incision (2 - 4 inches) from the wrist into the palm and then dividing the flexor retinaculum, which relieves nerve compression. This surgery is often performed under local anesthesia on an outpatient basis.

Endoscopic surgery can offer a more rapid recovery and less post operative pain than the traditional open release procedure. Whereas the endoscopic approach is less traumatic there is a somewhat higher risk of inadvertent damage to the median nerve and other structures. Recurrence is rare and usually the result of an incorrect initial diagnosis. Nevertheless one

third of patients continue to experience pain and functional impairment post operatively.⁵ Less than 40% of surgical patients achieve a completely normal functional status. In more than 5% of cases the surgery increases the severity of the condition.^{6,7} Post surgical response may be slow and patients may be unable to work for prolonged periods with extensive rehabilitation required.⁷

Economics

This disease remains a major source of work absenteeism. For example in the United States CTS is the major single contributing factor of time lost from work. A recent article indicated that 50% of all workers with CTS missed in excess of 30 days of work.⁸ Moreover there is a high level of prevalence in North America, with 1 in 10 people experiencing the symptoms of CTS at some stage in their adult life. Due to the high rate of occurrence, CTS results in billions of dollars of workers compensations claims annually. The treatment of CTS also has an extremely high cost associated with it. It is estimated that 460,000 carpal tunnel surgeries are carried out each year in the U.S. with a direct medical cost of over \$1.9 billion.⁹ A study carried out in California in 1993 demonstrated that the cost to treat one carpal tunnel case without surgery was \$5,246, but with surgery the number skyrocketed to \$20,925.¹⁰ This clearly demonstrates the need for new approaches that can be applied during the early stages of Carpal Tunnel Syndrome that will allow patients to continue to work, avoid disability and reduce the rate of surgery.¹¹

Table 1. Cost of various treatment methods for carpal tunnel syndrome.

Treatment Method	Cost
Conservative treatment without surgery ¹⁰	\$5,246
Surgery ¹⁰	\$20,925
Low Intensity Laser Therapy at Meditech	\$750 (15 * \$50 per treatment)

Low Intensity Laser Therapy in Treating CTS

At the Meditech clinics we have established Low Intensity Laser Therapy as the treatment of choice for carpal tunnel syndrome (CTS). The mechanism of action indicates that there is a relatively immediate reduction of pain and edema. There is also clear cut evidence suggesting that LILT aids in nerve regeneration.¹² Clearly LILT rapidly alleviates the symptoms of CTS and many other studies support this approach. For example a randomized double blind study carried out at General Motors in Detroit, Michigan used an 830nm diode laser and found decreased motor latency and improved grip strength following laser therapy.¹³ More significantly, 72% of the workers treated with laser therapy returned to work compared with 41% of the workers in the control group. A recent additional analysis of the use of laser therapy in the treatment of CTS found an average success rate of 84% in the 171 cases studied.¹¹

Carpal Tunnel Syndrome Research at Meditech

Meditech Laser Rehabilitation Centre last year invested in a state-of-the-art nerve conduction system to test median nerve transmission in this disease entity. The device utilized is the NC-stat System that is manufactured by Neurometrix (Neurometrix, Waltham, MA). The study in progress at Meditech tests the recovery of patients from CTS treated utilizing Low Intensity Laser Therapy. It is applied prior to initiating treatment, periodically during the course of treatment and at the termination when symptoms are no longer present. To illustrate, one patient tested had long standing bilateral CTS and had been subjected to surgery on her left wrist prior to presenting at our clinic. At the time of initial evaluation her right CTS was causing considerable discomfort accompanied by loss of sleep. The results from her initial nerve conduction test (Distal Motor Latency = 8.15ms; normal = 2.6 - 4.1ms) were indicative of a severe case of carpal tunnel syndrome. Due to the severity of the median nerve degeneration some cases require more prolonged treatments for total resolution of symptoms. Following four treatments of thirty minutes in duration a 20% reduction in her nerve conduction test was achieved (Distal Motor Latency = 6.90ms). This was accompanied by a significant reduction of pain and improved motor function. As research at Meditech continues we expect to periodically update our protocols to reflect clinical progress. In conclusion, it is apparent that Low Intensity Laser Therapy is the obvious treatment of choice for patients suffering from carpal tunnel syndrome.

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A New Section Highlighting Low Intensity Laser Therapy Clinics

This is a new section in the Laser Report that highlights clinics operating with the BioFlex Professional Low Intensity Laser Therapy System.



The team at Kingsway Health and Rehabilitation Associates.

The first clinic featured in this issue is Kingsway Health and Rehabilitation Associates. This is a multidisciplinary clinic composed of Physicians, Chiropractors, Psychologists and a variety of Physio and Occupational Therapists. This outstanding group of professionals recently added LILT to the treatment options available to their patients. The group is headed by, Dr's Donald and Maureen Henderson, who have both been Chiropractic Practitioners since 1975.

As is the case with many therapists, originally they regarded LILT with a considerable degree of skepticism. At the same time the mandate of their institution is "progress". Both Dr. Henderson's researched the laser literature and attended Meditech's educational seminars prior to selecting the BioFlex LILT system. Following the determination that it could enhance the benefits available to their patients they established a system in their clinic in order to treat rotator cuff injuries, carpal tunnel syndrome and degenerative osteoarthritis more effectively. Almost immediately they began to experience improved results compared to the conventional therapies previously applied.

Dr. Donald Henderson, former president of the Canadian and Ontario Chiropractic Associations stated "we chose the BioFlex LILT system developed by Dr. Fred Kahn because of its standardized protocol approach and technical support". Similar to most clinicians "we wanted an effective, alternative approach to over-medicated patients, who because of mounting pain and dysfunction, were considering surgery as their final option".

Although still adapting to this new technology, their preliminary results are impressive. "We are thrilled to have LILT as a new and important part of our clinic offerings and because of its effectiveness, we now look forward to treating rotator cuff, tendonitis, epicondylitis, carpal tunnel, various forms of chronic and sub-acute arthralgias, etc."

Meditech International is pleased to add Kingsway Health and Rehabilitation Associates to the Meditech family.

The Laser Marketplace

The second clinic featured in this issue is headed by Dr. Ayad Kurukgy an orthopedic surgeon practicing in London, England.



Dr. Kurukgy at the Meditech Conference in April.

Dr. Kurukgy originally visited our clinic six years ago and was persuaded to allow us to treat both shoulders and his cervical spine. He had sustained a number of injuries as a footballer and had previous surgical correction of his left shoulder problem which was unsuccessful. Surgical intervention for two herniated discs in the cervical spine had been scheduled. Dr. Kurukgy attended our clinic for ten days and was totally asymptomatic with regard to all areas at the end of that period of time.

He immediately acquired a system for his already established clinic and has added several more since. Dr. Kurukgy currently operates the most extensive laser therapy clinic in Europe. He recently attended our conference in April and remains a devoted member of the Meditech family. Meditech is also grateful to Dr. Kurukgy for promoting our systems throughout the world as he has been responsible for a number of other international clinics adopting the technology.

In future issues we hope to feature the clinics of Dr. Ken Mikklesen in Langley BC, Dr. Scott Mundle in Napanee/Kingston and Dr. Moona Rhamtulla in Owen Sound/Kitchener. These clinics are noted for their scientific approach to the establishment of the technology, their rapid expansion and the success that they have achieved with regard to patient benefit and the improvement of the practice from a financial perspective.

The manufacturers of virtually all laser devices available today advertise that they are approved by the FDA, Underwriters Laboratory and other regulatory entities. In essence, these approvals simply mean that the devices will do no harm. It does not indicate that the unit is effective in treating most disease entities, whether priced at \$250.00 or \$25,000. Effective therapy is not necessarily related to the value of the device. The cost of marketing in many instances is responsible for a significant amount of the retail price, whereas the components of the device may be inexpensive and ineffective for appropriate therapy. High quality manufacturers generally do minimal advertising and then only of a scientific nature, adhering to the doctrine of "res ipsi loquitor".

Low powered, inexpensive, light emitting or laser diodes are generally seated in some sort of a simple base. Power output however is often minimal with concomitant therapeutic value. As always in medicine the placebo effect is at work. In addition to the positive effort of nature, light invariably contributes a healing component no matter how minute, therefore a number of patients will improve with the psychological boost of laser therapy even though it may be of minimal value per se. Indeed, this is inevitable in simple easy to treat cases which would return to normal function without any treatment. As we all know many types of pathology are relieved by rest and nature alone. One must therefore be aware of devices that are marketed based on their cosmetic appearance and not necessarily in keeping with the lack of sophistication and quality of the unit. As always, we interject the axiom, "caveat emptor".

For a laser device to be effective it must have laser probes with diodes emitting between 75 to 200mW of power. Super luminous diodes should deliver somewhere between 5 - 10mW. Treatment must be applied in a therapeutically effective manner through control of frequency, duty cycle, wavelength, waveform, energy density, duration, etc. These settings need to be available over an infinite range with customization for each individual cellular genetic make-up in order to achieve a suitable response. As one can see, myriad factors are involved in engineering an optimally functioning device and considerable scientific and clinical knowledge must be incorporated in the process of evolving effective clinical approaches.

Frequently companies in their advertising claim that they have the "most powerful lasers" available therefore "they are the best." Nothing could be more misleading. If a laser diode that is highly powerful is applied to the tissue, burning is a significant risk, or at best denaturing of the cellular proteins, processes counterproductive to the healing process.

Other manufacturers advertise the "highest powered laser". If the full power of these systems were placed close to the tissue being treated, cells would be destroyed similar to surgical lasers used to ablate tissue. With healing lasers the output power must be carefully controlled in order to stimulate the cell but not damage the micro-molecules or membrane in any way. One can readily see that the minefield of lasers selection and utilization is problematic and all advertising slogans must be carefully studied and assessed. Always question what you read!

Premium type devices are engineered to achieve maximum healing, without causing cellular damage. This is a relatively narrow spectrum and the margins must not be violated. The best indicator of the capacity to heal can be measured by the functionality achieved, obviating the need for pharmaceuticals and the absence of pain. You must always remember that the hype propagated by many sales personnel is simply designed to confuse you the therapist in order to sell the product they represent. Always choose the device that consistently produces the best results from the clinical perspective.

Gout – A new treatment for an old problem

Gout (also referred to as gouty arthritis) is a debilitating form of arthritis caused by the accumulation of uric acid crystals in the joints and tendons. It is an intensely painful disease that results from an increased uric acid concentration in the bloodstream. The most frequent location of symptoms is the 1st toe (75% of initial attacks), although it can also affect many other joints such as the ankle, knee, digits and spine. The classic cartoon (Figure 3) clearly demonstrates the intense pain and swelling associated with the onset of the disease.

In medieval times the disease was thought to be the result of a decadent lifestyle, as purine rich foods were only available in quantity to the wealthy. The stereotypical victim was a lazy, obese, middle-aged man over indulging in rich food and alcohol. Over the centuries many famous people have suffered from gout; these include Henry VIII, Isaac Newton, Thomas Jefferson and Benjamin Franklin. Presently, gout is associated with renal disease, diabetes, obesity, leukemia and also the result of the use of diuretics. Improvements in the diet of the “common” man have increased the frequency of this previously somewhat rare disease. It is now no longer associated with a “posh” lifestyle and unfortunately has become a more “common” illness.

Pathogenesis

Acute gout presents without warning. The exact cause of the disease is not known, although it is linked to a deficiency in purine metabolism. It can also be associated with minor trauma, overindulgence in purine-rich food, alcohol, surgery, fatigue, emotional



Figure 3. “The Gout” James Gillray, 1799.

and other stress. Purine is an organic compound that is common in the body and is metabolized into uric acid. Individuals suffering with gout usually have an increased concentration of uric acid in the blood, the result of increased production of uric acid and/or an impaired excretion thereof. This increased concentration of uric acid (hyperuricemia) results in local deposits of monosodium urate (MSU) crystals in relatively avascular tissues (i.e. cartilage, tendons, ligaments, etc.) around the cooler distal peripheral joints (Figure 4). In severe long standing cases, this condition can also result in MSU crystals being deposited in larger central joints as well as also the kidneys (renal calculi). Uric acid is normally processed in the kidneys into a form of urate for excretion.

Stages

Gout can be subdivided into four distinct stages

1. asymptomatic
2. acute
3. intercritical
4. chronic

In the first stage (asymptomatic), the uric acid levels in the blood increase, but there are no symptoms. The initial attack of gout marks the acute stage. These attacks generally resolve rapidly although severe attacks can last several days and can even extend several weeks.

Low Intensity Laser Therapy has been clinically demonstrated to shorten the duration of the initial outbreak in addition to relieving the pain associated with this stage. Following the initial attack, the patient enters a period of dormancy, known as the intercritical or symptom-free stage that may last for a long period of time. The majority of gout sufferers experience their second attack generally within 6 months to 2 years. In the chronic stage of the disease, attacks of gout become more frequent and polyarticular (affecting more than one joint). Large tophi (deposits of crystals) can be

found deposited in many joints during this phase.

Signs and Symptoms

The onset of gout is generally confined to nocturnal pain in a single joint (monoarticular), although it can be associated with multiple joints. The pain becomes progressively more severe and at times can be excruciating. The symptoms often mimic those of acute infection with edema, elevated temperature and erythema. The soft tissues overlying the joint are usually extremely tender and in some instances even the presence of blankets touching the skin can be irritating. The overlying skin is tense, warm, shiny and red or purplish in colour. Fever, tachycardia, chills and malaise may also be present.

The secondary attacks usually affect only one joint and last only a few days, but subsequent attacks can affect several joints simultaneously or sequentially and persist for weeks if left untreated.

Diagnosis

Gout has such a distinct clinical signature that it can often be tentatively diagnosed by history and physical examination alone. Elevated serum urate (7mg/dL) supports the diagnosis but is not specific. This is due to the fact that 30% of the patients have a normal serum urate level at the time of their first attack. The definitive diagnosis of gout can be readily obtained from light

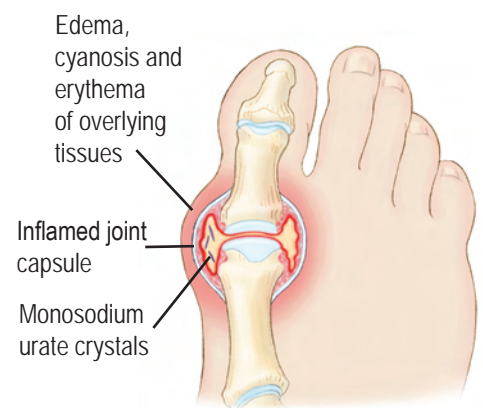


Figure 4. Gout of the 1st toe

microscopy of the joint fluid aspirated from the afflicted area. This will clearly demonstrate intracellular monosodium urate crystals.

Treatment

The first treatment administered should be directed to relieve pain. Conventionally this has consisted of the use of NSAID's and analgesics to temporarily diminish pain sensation. Low Intensity Laser Therapy (LILT) properly applied can significantly reduce the pain and swelling associated with acute outbreaks of gout immediately, with concomitant elimination of the requirement for pharmaceuticals. LILT acts rapidly to reduce the inflammation surrounding the joint capsule in addition to relieving the debilitating pain. At our clinics generally there is a total relief of pain following 1 to 3 treatments on sequential days. A recent publication on the use of laser therapy in treating the acute stage of gout demonstrated that "both laser therapy and diclofenac (NSAID) achieved rapid pain relief in patients with acute gouty arthritis, similar in efficacy. Laser therapy was more effective than diclofenac in patients with chronic pyrophosphate arthropathy and in patients with chronic apatite deposition disease".¹⁴ This article supports the clinical results achieved at Meditech indicating that Low Intensity Laser Therapy should be

selected as the treatment of choice in acute gout.

Following the reduction of these initial symptoms the conventional therapy is to administer colchicine which reduces the serum concentration of uric acid in the blood. As with most pharmaceuticals, colchicine produces undesirable side effects including GI tract symptoms. Avoiding purine rich foods such as meat, fish, dry beans, mushrooms, alcohol, in addition to consuming purine-neutralizing foods (i.e. fresh fruits and vegetables) could help reduce the concentration of uric acid. Even with a change in diet the success of this approach is limited in reducing the symptoms of gout. In addition to changes in diet, increasing the volume of liquids ingested, particularly water, aids in the body's ability to excrete uric acid.

Recently Allopurinol has been developed as a long term treatment of gout. This treatment is useful in reducing the serum uric acid levels with concomitant reductions in the outbreaks of gout. Again there are obstacles with this approach as this treatment cannot be administered until after the attack has subsided. Other side effects include GI tract distress, hepatitis and a potentially harmful eczema. An additional negative aspect of this treatment is

that it is a lifelong decision; ceasing treatment with Allopurinol causes an almost immediate relapse of gout due to the sudden rise in serum uric acid levels.

During the past month at the Meditech clinic, we had 2 complex cases of gout in rapid succession. Routinely, we treat 30-40 cases of gout per annum and in all cases we obtain rapid resolution of symptoms without early recurrence. The majority of patients on initial presentation have been on medications including Indomethacin, Colchicine, Allopurinol, etc. Most patients had continued to have persistent pain and presented in order to obtain more effective alternative therapy. Rapid resolution of pain and inflammation are infallible indicators of change in the affected joints. These two patients noted nearly 100% reduction in pain following their first treatment. Whereas this approach is highly effective, patients should also be cautioned to alter their dietary habits in order to maintain low uric acid levels. Our experience at Meditech indicates that LILT instituted at the onset of pain is the treatment of choice in both acute and chronic gout.

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Initial



Intermediate

Patient 1: Male 59 years;
Gout of the 1st toe (metatarsal-phalangeal joint).
5 treatments over 16 days.

Presented 2 months after initial symptoms with severe pain and the inability to bear weight.
Following treatment; normal ROM and pain totally relieved.



Initial



Final

Patient 2: Male 53 years;
Gout of the 1st toe (metatarsal-phalangeal joint).
3 treatments over 5 days.
Erythema and edema were reduced rapidly.
Complete elimination of pain following two treatment sessions.

4th International Low Intensity Laser Therapy Conference: A Review of the Events



Saturday afternoon panel discussion (S. Rochkind, G. Gillis, M. Dyson, T. Karu and P. Bradley)



Dr. Kahn introducing our keynote speaker, Dr. Tiina Karu



Sunday afternoon panel discussion (A. Kurukgy, L. Rudnick, M. Dyson, T. Karu, S. Kim and J. Tafur)

From April 21st - 23rd, Meditech International hosted a conference on Low Intensity Laser Therapy (LILT) in order to promote education in this rapidly developing field. Scientists, researchers and clinicians from around the world gave presentations. Delegates from many countries were in attendance, including Russia, Israel, Egypt, Saudi Arabia, Iran, United States and Canada to name only a few. What follows is a brief outline of the weekend...

The first complete day of the conference offered a seminar by Dr. Chukuka Enwemeka providing an outstanding overview of the field of LILT, including both scientific and clinical information. The presentation began with the history of light and laser therapy and ended with a discussion of the clinical application of LILT. The entire presentation was enthusiastically received.

The second and third full days of the conference again covered basic research and clinical application, including the role of laser therapy in cancer therapy, spinal cord and nerve regeneration, arterial insufficiency and many other medical problems. On Saturday morning Dr. Ken Walker, who is better known as Dr. Gifford-Jones, a world renowned medical journalist presented. Dr. Walker welcomed the delegates by relating his personal experience with laser therapy for a back problem. The address was entertaining and informative both from the journalistic and medical point of view.

Following this was an insightful presentation by Dr. Shimon Rochkind, a neurosurgeon, who discussed the results of his research involving nerve and spinal cord regeneration. Dr. Tiina Karu, the world's foremost authority in the field

of laser research presented an overview of her work. Dr. Karu, is commonly referred to as "the guru of laser science" and has produced an immense body of work in this area that has brought her international recognition. Dr. Karu outlined the basic cellular mechanisms of action on which the whole field of LILT is based. The Saturday morning session closed with presentations by both Dr. Paul Bradley and Dr. Fred Kahn. Dr. Bradley provided an entertaining seminar on the many methods of monitoring the effects of LILT. This high energy talk was enjoyed by the audience who in addition to the excellent information provided were charmed by Dr. Bradley's British wit. Dr. Kahn ended the morning session with a lecture titled "The Clinical Approach" that summarized a study of over 1000 patients who received LILT at the Meditech clinics. This presentation outlined a number of challenging cases effectively treated with LILT, a dramatic testimonial to the efficacy LILT.

Lunch was followed by the familiar face of Dr. Mary Dyson. "Dr. Mary", as she prefers to be called, discussed the effects of LILT on tissue regeneration and repair. This was followed by a number of clinical presentations from Dr. Rick Lambert, Dr. Greg Gillis, Dr. Moona Rahemtulla and Dr. Ken Mikkelsen that provided a clinical balance to the morning research focused section. The second day concluded with a lively panel discussion followed by an opportunity to mingle at the evening cocktail reception. The day was exceptional with the evening trend continuing the flawless conference organization planned and effectively orchestrated by the Meditech staff.

Sunday morning came early and again brought another day of outstanding presentations. The first lecture was provided by Dr. Kahn focusing on the extensive applications of LILT, including periphero-arterial occlusive disease, herpes zoster and lymphedema. Dr. Kahn also discussed cases where laser therapy had been effectively utilized in the treatment of dermatological conditions, cystic fibrosis, etc. The case studies presented certainly impressed the audience. Dr. Rochkind followed with a dissertation on recent clinical studies of nerve regeneration. Again, this had dramatic impact as Dr. Rochkind seamlessly transferred his laboratory work into the clinical setting. Both Dr. Mary and Dr. Bradley presented their second lectures to a receptive audience. Dr. Stuart Bisland engaged in the developmental stage of combining LILT with photodynamic therapy in the treatment of cancer ended the morning session with a stimulating dissertation.

Following lunch Dr. Joe Tafur spoke about the presence of photo communication between cells. This was followed by an insightful discussion relating to the treatment of pain by Dr. Leonard Rudnick. Dr. Rudnick captivated the crowd utilizing a mix of personal experience and sound clinical knowledge to share his methodologies in the treatment of pain using LILT. Further clinical presentations were delivered by Charles Mooney (former head trainer of the Toronto Raptors of the NBA), Dr. Slava Kim (Chief Therapist at the Meditech clinic) and Leslie Perrin (Director of Education at Meditech). The panel discussion concluded another superb day of education. Many of the attendees expressed the opinion that this was the best conference that they had ever attended and looked forward to the next conference with a date soon to be announced.



Chukuka Enwemeka giving his presentation



Participants and speakers enjoying lunch together

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