Laser Therapy in the Treatment of Juvenile Rheumatoid Arthritis

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This clinical case profile will discuss a 17-year old female who presented with rheumatoid arthritis symptoms at the age of 13. Laser Therapy was initiated after a number of failed attempts at controlling the condition with pharmaceuticals with tremendous success.

History

Case Study is that of a 17-year-old female high school student who has had progressive rheumatoid arthritis diagnosed at age 13. The disease is generalized, but the most severe symptoms relate to the hands and most particularly the digits. The diagnosis was established by her pediatrician and she has been under the care of rheumatologists since age 14. A number of pharmaceutical regimes have been utilized including Tetracycline, Naprosyn, Plaquenil, and Voltaren, often in combination. The suggestion was made to add Methotrexate to the regimen in October 1999. The patient and her family resisted this approach and came to our clinic asking for evaluation and assistance in therapy

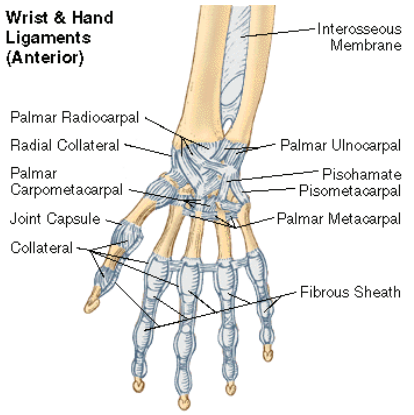
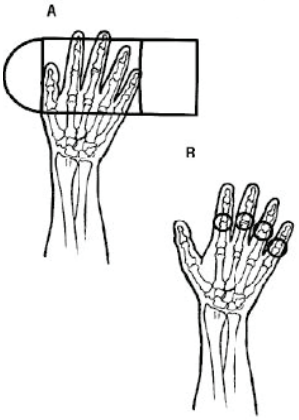


Figure a
Palmar View of Hand. Dorsal aspect presents better access to the joints for laser therapy. However palmar approach may also be useful.

Physical Examination

At the time of presentation in October 1999, the patient revealed significant edema of the digits particularly from digits 2 to 5 inclusive. The fingers had a "sausage like" appearance bilaterally. The metacarpal phalangeal joints and the interphalangeal joints were most severely affected. Strength bilaterally was substantially diminished from the expected norm and measured 12 Kg. on the right and 10.5 on the left using the Asimow dynamometer. She could barely touch her fingertips to her palm due to edema and pain



The Treatment Arrays (LS- R 750 & LS- I 1500) cover the entire hand and the Laser Probe (LD I 75) is directed specifically to the individual joints presenting the most severe pathology. Two stages (I &II) of treatment were applied dorsally and one stage (III) over the palmar aspect

Treatment

Low Intensity Laser Therapy was initiated on a three times per week basis and was adhered to with the exception of several week-long holidays and school examinations. The regimen utilized, incorporated a combination of BioFlex treatment arrays including the R-750, the IR-1500 and the IR-75 laser probe. This was consistently applied over a three month period. When noticeable improvement occurred, treatments were reduced to twice per week. Therapy was eventually cut back to once per week and the patient was discharged at the end of June. She will be observed periodically to determine whether she maintains her dramatic improvement. It should be noted that a total of 28 treatments were applied

Current Status

(6 month's post cessation of treatments) The patient's hands and fingers are relatively normal in appearance with only minimal thickening at the proximal interphalangeal joints. Strength on the right has improved to 16 Kg. on the right and

Head	Frequency	Duty Cycle	Time/Area	Energy Density
LS-R 750	CW		5 min/hand	3.00 J/cm^2
LS-I 1500	1000 Hz	70 %	6 min/hand	5.04 J/cm^2
LD-I 75	CW		15 sec for 3 points/joint	33.75 J/cm^2

Table 1. Treatment Regime Followed (Rheumatoid Arthritis) Areas: MP and IP, digits 2 to 5 inclusive.

14 Kg. on the left (the patient is right handed). She is able to make a fist without restriction of mobility and no pain exists. In January of this year, the patient's medications were reduced on a weekly basis and since April, she has not taken any medications whatsoever. At this time, the patient is asymptomatic, has full range of motion, has no discernable cosmetic deficit and requires no therapy.

Conclusion

Low Intensity Laser Therapy is highly effective in the treatment of Rheumatoid Arthritis. This has been substantiated by a study at the Department of Rehabilitative Sciences at the University of Ulster.