

The effectiveness of thermography with certain physiotherapeutic methods

by Béla Hegedűs, MD

Rehabilitation Institute&Spa, Visegrád, Hungary, arthrodent@freemail.hu

Introduction

Thermography has long been applied as a diagnostic imaging method in various areas of medicine. It has been used with a good degree of efficacy in diagnosing conditions with increased perfusion (renal and testicular cancers). It has also been compared to MR, CT, and myelography for locomotor and neurological diseases. In addition, the effectiveness of thermography has been compared with that of Doppler UH and angiography in examining patients with atherosclerosis obliterans.

Objective

We aimed to examine the effect of methods (soft laser and neck extension) applied in treating certain locomotor diseases in our work and to study potentially resulting microcirculatory changes.

Patients and methods

(1) Patients (27) with mild or moderate gonarthrosis were randomly treated and tested. The treatments involved a diode laser (wavelength 830nm, continuous wave, power 50mW) applied twice a week for four weeks using contact mode and a dose of 6J/cm² per point. The control group was treated with an ineffective placebo probe (power 0.5mW) of identical appearance. A bilateral comparative thermograph was obtained prior to our tests, immediately following the completion of the therapy, and two weeks later.

(2) Examinations were conducted in 15 cases of cervical disc hernia confirmed by MR. Extension treatment was applied in monotherapy 15 times (6kg [initial]-10kg [max], 5 min). Thermographic images of the upper limbs were obtained prior to treatment, following the 5th treatment, and following the 15th. Limbs on the opposite side which showed no symptoms served as controls.

The thermographic tests were conducted with an AGA infrared camera. Upper and lower limb circulation was measured by Doppler.

Results

(1) Thermographic measurements on the treated and control sides showed a (significant) rise in temperature of at least 0.5°C or more over the initial value, i.e. an improvement in circulation. These changes did not appear in the group treated with the placebo (ineffective probe).

(2) Thermography showed a (significant) rise in temperature of at least 0.5°C or more, i.e. an improvement in circulation was demonstrated in the dermatome of the affected root. These changes did not appear on the control side.

Conclusion

Our results show that thermography would appear to be an objective means to determining the effectiveness of the therapeutic methods under examination and in demonstrating resultant microcirculatory changes.