

New treatment alternatives in the ulnar neuropathy at the elbow: ultrasound and low-level laser therapy.

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Abstract

Ulnar nerve entrapment at the elbow (UNE) is the second most common entrapment neuropathy of the arm. Conservative treatment is the treatment of choice in mild to moderate cases. Elbow splints and avoiding flexion of the involved elbow constitute majority of the conservative treatment; indeed, there is no other non-invasive treatment modality. The aim of this study was to investigate the efficacy of ultrasound (US) and low-level laser therapy (LLLT) in the treatment of UNE to provide an alternative conservative treatment method. A randomized single-blind study was carried out in 32 patients diagnosed with UNE. Short-segment conduction study (SSCS) was performed for the localization of the entrapment site. Patients were randomized into US treatment (frequency of 1 MHz, intensity of 1.5 W/cm², continuous mode) and LLLT (0.8 J/cm²) with 905 nm wavelength), both applied five times a week for 2 weeks. Assessments were performed at baseline, at the end of the treatment, and at the first and third months by visual analog scale, hand grip strength, semmes weinstein monofilament test, latency change at SSCS, and patient satisfaction scale. Both treatment groups had significant improvements on clinical and electrophysiological parameters ($p < 0.05$) at first month with no statistically significant difference between them. Improvements in all parameters were sustained at the third month for the US group, while only changes in grip strength and latency were significant for the LLLT group at third month. The present study demonstrated that both US and LLLT provided improvements in clinical and electrophysiological parameters and have a satisfying short-term effectiveness in the treatment of UNE.

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