

Short-term Effects of 2 Different Orthoses in Pain Relief in Patient With Carpometacarpal Joint Osteoarthritis

A Prospective, Randomized, Controlled Trial

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Abstract

Introduction: Carpometacarpal (CMC) joint osteoarthritis critically impacts activities of daily living. Pain is the main reason for a consultation to the hand therapy clinic as described in the literature, and conservative treatment, typically an orthosis, is the first intervention of choice. A thumb orthosis is a specific nonoperative palliative treatment for CMC joint osteoarthritis for improving function and comfort. A variety of thumb orthoses are described in the literature, but there is no supporting evidence highlighting the use of a specific orthotic design for short-time effect on pain and function.

Purpose of the Study: The study was conducted to compare the short-term effect of 2 different thumb CMC orthoses on pain reduction as a primary outcome and improved hand function as a secondary outcome.

Methods: A total of 66 patients were included in the study. One group of 33 patients received a Hybrid orthosis, immobilizing only the CMC joint, and the other group of 33 patients received a thumb orthosis called the “whale,” which immobilizes the CMC and metacarpophalangeal (MP) joints. Both orthotic designs were custom fabricated for each patient. Outcomes measures included the visual analogue scale (VAS) for pain and the Quick Disabilities of the Arm, Shoulder and Hand (QuickDASH, Spanish version) for function.

Results: Differences in pain scores and functional scores were found in both groups after the one-week washout period compared with baseline, but did not differ significantly between the two groups. Outcome for functional score demonstrated both clinically and statistically significant differences between the baseline and 1 week for outcome score for the both groups ($p = .001$). With respect to pain intensity, the mean pain score decreased from 7.69 to 5.51 for the CMC orthosis ($p = .001$) and from 7.78 to 5.45 for the CMC/MP “whale orthosis” ($p = .001$).

Conclusion: The present study adds to our therapeutic knowledge base regarding the benefits of 2 different thumb orthotic designs on pain reduction and functional improvement in the first week using orthoses as an exclusive conservative treatment.