

Better Functional Results of Conservative Treatment in Fresh Lateral Ligament Injuries of the Ankle with Additional Deep Oscillation

Bessere funktionelle Ergebnisse der konservativen Behandlung bei frischen Außenbandrupturen des oberen Sprunggelenks mit Tiefenoszillation

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Abstract

Background and Aim:

25% of all injuries of musculoskeletal injuries involve the ankle. 85% concern the lateral ligament structures, 10% the anterior syndesmosis and 5% the medial ligament structures, accompanied by edema and hematoma in the respective regions. Very good results were already achieved with deep oscillation therapy for several indications, including trauma. The aim of this study was the evaluation of conservative treatment with the Aircast[®] brace for fresh exterior ligament injuries with an additional electro-mechanical treatment, i. e. deep oscillation, and optimisation of this novel combination of treatments.

Methods:

43 patients were treated for acute ligament injuries of the fibular ankle with distorsion or laceration of the medial ligament, hematoma and contusion. They received a complex functional conservative treatment with the Aircast[®] brace with additional deep oscillation therapy. 25 of these injuries of the ankle occurred during sports and 18 during everyday activities. A questionnaire, a clinical and radiological examination of the upper ankle joint were used for evaluation. At the beginning and end of treatment, symptoms were assessed subjectively by the patients with the numerical rating scale (NRS) and by the physician with a modified 4-step rating scale. The study compares the effect of additional deep oscillation with a control group of 25 patients receiving standard treatment.

Results:

30 (70%) of the 43 patients were female and 13 (30%) male. The average age was 26 years. 14 (33%) patients had a very good, 22 (51%) good, 3 (7%) satisfactory, and 4 (9%), insufficient outcome. Thus, 39 (91%) were satisfied and 4 (9%) dissatisfied. The subjective assessment of symptoms (NRS) improved significantly ($p < 0.001$) from 9.1 (baseline) to 2.1 points after treatment. Objective assessment by the attending physician based on various clinical parameters was good or very good in 80% of the cases.

Conclusions:

The study shows that the conservative functional treatment described here with an Aircast® brace with the integration of deep oscillation is a very good treatment for fresh lateral ligament injuries. Based on this study, an additional positive effect of deep oscillation is observed in terms of reduction of edema and hematoma, detumescence, pain and inflammation. Also, the high patient satisfaction supports this conclusion. The treatment is gentle and thus, unlike other electrical and mechanical therapies, not contraindicated in the acute phase. It is effective, easy to apply and patients perceive it consistently as positive.