Category: Ankle/Foot/Calf

Second-Look Arthroscopy After Surgery For Osteochondral Lesions of the Talus: A Systematic Review and Meta-Analysis

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Summary:
Concerning treatment for osteochondral lesions of the talus, bone marrow stimulation yields inferior cartilage quality as assessed with second-look arthroscopy in comparison to fixation, osteochondral transplantation and cartilage implantation.

Data:
Purpose: The primary aim was to assess and compare cartilage quality after different surgical interventions evaluated by second-look arthroscopy. Secondary aims were to report concomitant diagnoses found during SLA, and to correlate the cartilage quality with clinical and radiological outcomes. Methods: A literature search was performed through PubMed, Embase (Ovid), and Cochrane Library. The primary outcome was the difference of cartilage quality as assessed with SLA between different surgical interventions. The Moderator analysis was used to calculate differences between treatment groups. Associations 95% confidence intervals (CI) were calculated with the Clopper-Pearson interval. Additionally, correlations between the cartilage quality and clinical- or radiological outcomes were calculated and percentages of concomitant diagnoses per treatment group were reported. Results: Nineteen studies comprising 447 ankles having undergone SLA 14 months after the initial surgery were included. The cartilage quality success rate for bone marrow stimulation (BMS) was 53% (95% CI 38-68%), for Retrograde Drilling (RD) 100% (95% CI 66-100%), for fixation (FIX) 92% (95% CI 70-89%), for Osteochondral Transplantation (OCT) 94% (95% CI 69-99%) and Chondrogenesis-Inducing Techniques (CT) this was 81% (95% CI 70-89%). The success rate of BMS was significantly lower than FIX, OCT and CT. There were no significant differences in success rates between the other treatment options. The incidence of concomitant diagnoses found during second-look arthroscopy differed among different treatment strategies. For BMS, a positive correlation was found between the International Cartilage Repair Society score (ICRS) and AOFAS-scores \((r_c = .67, p < .01)\). For OCT, no significant correlation was found between the MOCArT score and the ICRS \((r_c = .36, p = .23)\).

Conclusions: Concerning treatment for osteochondral lesions of the talus, bone marrow stimulation yields inferior cartilage quality as assessed with SLA in comparison to fixation, osteochondral transplantation and cartilage implantation. The role of the quality of the subchondral bone and its repair must be highlighted concerning correlation with clinical outcomes and long-term success as well as prevention of development of osteo-arthritis.

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Achilles Tendon Gait Dynamics After Rupture: A Three-Armed Randomized Controlled Trial Comparing An Individualized Treatment Algorithm Vs. Operative Or Non-Operative Treatment

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Summary:
This study presents the first evaluation of an ultrasound-based individualized treatment algorithm for patients with an Achilles tendon rupture, in a randomized controlled set up with valid functional outcomes.

Data:
Introduction: Individual treatment selection has been proposed as the key to optimized treatment for patients with an Achilles tendon rupture. The purpose was to determine if walking pattern, Achilles tendon elongation and patient reported outcome measure differ between patients having their treatment selected using the individualized treatment algorithm Copenhagen Achilles Rupture Treatment Algorithm (CARTA) and patients treated as usual (operative or non-operative by default). Materials and Methods: The trial was performed as a three-armed randomized controlled trial with the patients randomized in a 1:1:1 order to one of three parallel groups; 1) Intervention group: Participants treated according to the individualized ultrasound based treatment algorithm CARTA, 2) Control group: Participants treated non-operatively, 3) Control group: Participants treated operatively. The present study evaluates the newly developed CARTA, an individualized treatment algorithm based on an ultrasonographic examination. Firstly, the degree of overlap at the site of rupture was examined by looking at the cross-sectional area. If the investigator could identify a transverse picture with less than 25% fibers of the cross-sectional area, the rupture was evaluated not to overlap. If more than 25%, the tendon was evaluated to overlap. If no overlap was present operation was indicated. Secondly, the tendon elongation was measured by using the Copenhagen Achilles Length Measure. Both legs were examined and the difference between the sides was calculated as the elongation and was given in percent of the length of the non-injured tendon. Patients with up to 7% elongation were treated non-operatively and patients with 7% or more were treated operatively. Patients aged 18-65 years were eligible for inclusion. The primary outcome was peak ankle plantarflexor power during push when walking at 12 months measured in a 3D gait laboratory. Secondary outcomes were peak ankle plantarflexor moment, peak ankle dorsiflexion during stance phase, tendon elongation and Achilles tendon Total Rupture Score (ATRS). Analysis was conducted as intention-to-treat. Results: 156 patients were assessed for eligibility, 21 were allocated to the intervention group and 20 and 19 to the control groups. The results indicated no statistically significant differences between the intervention group and the control groups at 6- and 12-months follow-up for the primary or any of the secondary outcomes. Conclusion: Individualized treatment selection for operative vs non-operative treatment based on CARTA did not seem to result in less affected gait dynamics or less tendon elongation than usual care.