they may be eligible for nonoperative treatment. It remains unclear whether it is necessary to distinguish between weightbearing stable fractures with (SER4a) and without (SER4a) concomitant stress instability and treat them differently. We undertook this study to evaluate outcome non-inferiority of weightbearing stable Weber B fractures with concomitant gravity stress radiographs considered unstable (SER4a) and stable (SER2) after a consistent treatment protocol using functional orthoses and weightbearing allowed. Methods We performed a prospective, non-inferiority study on 149 patients with stable weightbearing radiographs. Gravity stress radiographs were used to classify fractures as stable (SER2, n=88) or partially unstable (SER4a, n=61). All participants were treated with a functional orthosis and weightbearing allowed and were followed for two years. The primary outcome was the Manchester-Oxford foot and ankle questionnaire (MOxFQ: range 0-100; lower scores indicate fewer symptoms). A non-inferiority margin was prospectively defined as 7.5 points. Secondary outcomes included the Olerud-Molander Ankle Score, assessment of ankle congruence of injured ankles versus uninjured side, treatment-related adverse events, and thromboembolic events. Results Primary outcome data were available from 144 out of 149 (96.6%) participants at two years. The between-group difference was 1.0 MOxFQ points in favour of the SER2 group (95% confidence interval -1.4 through 3.4, P = .397). These findings were consistent with non-inferiority. We found no appreciable between-group differences for any other outcome. Conclusions In Weber B fractures that are stable on weightbearing radiographs, nonoperative treatment using functional orthoses and weightbearing allowed leads to excellent and non-inferior outcomes comparing patients with concomitant stress test instability (SER4a) and with stress test stability (SER2). These findings suggest that all weightbearing stable Weber B fractures may be treated functionally with orthoses, and identification of gravity stress instability seem redundant.

Category: Ankle/Foot/Calf

Long-Term Patient Outcomes For Treatment Of Difficult Osteochondral Lesions Of The Talus With Particulated Juvenile Allograft Cartilage Implantation ± Calcaneal Autograft

Abstract ID# 23310
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Summary:
While patients with and without calcaneal bone graft showed improvement, patients without calcaneal bone graft incorporation had significantly greater improvement in functional outcome scores. Whether these differences are due to graft incorporation or larger lesion size is unclear.

Data:
INTRODUCTION: Osteochondral lesions of the talus (OCLT) are common traumatic injuries that can be difficult to treat. To date, long-term patient reported outcome measures (PROMs) of patients with particulated juvenile allograft cartilage implantation with or without calcaneal autograft have not been compared. METHODS: From 2010-2012, thirteen patients with difficult to treat OCLTs underwent arthroscopic-assisted implantation of particulated juvenile allograft cartilage (DeNovo NT®) with or without autogenous calcaneal bone grafting by a single surgeon. Inclusion criteria included at least two of the following: 1) shoulder lesions, 2) lesion size >107mm2 and/or deeper than 5mm. Patients were fully evaluated using physical examination, patient interviews, and PROMs. Pre-operative and post-operative PROMs were compared with a Mann Whitney test. RESULTS: When comparing patients in regard to calcaneal bone graft implantation, no difference in age (43.8±14.0 vs. 48.9±10.0yrs. respectively; p-value=0.667), BMI (28.4±6.7 vs. 29.5±4.5kg/m2 respectively; p-value=0.834), pre-operative PROMs (pmin=0.110) or follow-up (100.8±14.6 vs. 107.7±11.3months respectively; p-value=0.153) was noted, however, calcaneal bone graft patients did have a significantly larger lesion size (188.5±50.9 vs. 118.7±29.4mm2 respectively; p-value = 0.027). VAS score final follow-up improvement did not significantly differ between cohorts (p-value=0.889), nor did the FAAM ADL score (p-value=0.522). The FAAM Sports score improved significantly more for the DeNovo alone group compared to the bone graft cohort (p-value=0.032). The AOFAS score improvement did not differ between cohorts (p-value=0.944), however, the SF-36 PCS improved significantly more for the DeNovo alone group compared to the bone graft cohort (p-value=0.038). No intraoperative/perioperative complications were observed with calcaneal bone grafting. DISCUSSION AND CONCLUSION: This is the first reported study to compare patient reported outcomes of particulated juvenile allograft cartilage alone compared to particulated juvenile allograft cartilage with calcaneal bone autograft, demonstrating positive post-operative, self-reported functional outcomes. While patients with and without calcaneal bone graft showed improvement, patients without calcaneal bone graft incorporation had significantly greater improvement in functional outcome scores. Whether these differences are due to graft incorporation or larger lesion size is unclear.

Category: Ankle/Foot/Calf

Sustained Clinical Success at 7 Years Follow-Up After Arthroscopic Lift-Drill-Fill-Fix (LDDF) Of Primary Osteochondral Lesions of the Talus

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Summary:
Arthroscopic LDDF for fixable chronic primary OLTs results in excellent pain reduction and improved functional outcome, with sustained results at long-term follow-up. These results indicate surgeons may consider arthroscopic LDDF as treatment of choice for fragmenat OLT.

Data:
Introduction: The purpose of this study is to describe the long-term clinical results of arthroscopic fragment fixation for chronic primary osteochondral lesions of the talus (OLT), using the Lift-Drill-Fill-Fix (LDDF) technique. Methods: 18 Patients (20 ankles) underwent fixation for a primary OLT with an osteochondral fragment by means of arthroscopic LDDF and were evaluated at a mean final follow-up of 7 years. Pre- and postoperative clinical assessment was prospectively performed by measuring the Numeric Rating Scale (NRS) of pain at rest, during walking and when running. Additionally, the change in Foot and Ankle Outcome Score (FAOS) and the procedure survival (i.e., no reoperation for the OLT) at final follow-up and complications were assessed. A Wilcoxon signed-rank test was used to compare clinical outcomes preoperatively and postoperatively. A two-sided level of P < .05 was considered significant. Results: The median NRS during walking significantly improved from 7 (IQR: 5 - 8) pre-operatively to 0 (IQR: 0 - 1.5) post-operatively (p < .001). The NRS during running significantly improved from 8 (IQR: 6 - 10) to 2 (IQR: 0 - 4.5) (p < .001) and the NRS in rest from 2.5 (IQR: 1 - 3) to 0 (IQR: 0 - 0) (p < .001). The median FAOS at final follow-up was 94 out of 100 for pain, 71 for other symptoms, 99 for activities of daily living, 80 for sport and 56 for quality of life. The FOAS remained significantly improved post-operatively on all subscales, except for the symptoms subscale. The procedure survival rate is 87% at final follow-up. No complications were reported. Conclusion: Arthroscopic LDDF for fixable chronic primary OLTs results in excellent pain reduction and improved functional outcome, with sustained results at long-term follow-up. These results indicate surgeons may consider arthroscopic LDDF as treatment of choice for fragmentary OLT.

Category: Ankle/Foot/Calf

Synostotic Malreduction Assessment Using Three-Dimensional Distance Mapping: A Cadaveric Weight Bearing CT Study

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