

Takedown of Ankle Fusions and Conversion to Total Ankle Replacements: A Prospective Longitudinal Study

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Introduction/Purpose: With ankle replacements gaining credibility there is a small subset of patients that might benefit from a conversion of an ankle fusion to a replacement. There is not much in the literature about conversions and we began this study without having any specific data regarding success and expectations we could provide to the patients.

Our hypothesis was that for the correct indication a conversion of an ankle fusion to a total ankle replacement might do as well as a primary total ankle replacement.

Methods: Twenty five patients presented to the senior author with either ongoing ankle pain after a fusion, or increasing pain after a period of relative comfort after an ankle fusion. All patients came specifically with the desire to discuss a conversion to an ankle replacement. Exclusion criteria included a history of Diabetes, peripheral neuropathy, excision of either malleoli at the time of fusion, pantalar fusion and neurovascular compromise.

This study was conducted in compliance and approved with a local IRB. Outcomes were evaluated pre-operatively and post-operatively with the Veterans Rand Health Survey (VR-12), Ankle Osteoarthritis Scale (AOS), Visual Analog Scale (VAS) Pain scale and the American Orthopaedic Foot and Ankle Society (AOFAS) Ankle-Hindfoot Score forms. A patient satisfaction survey was distributed to all patients and results were tabulated. Average follow up for outcome scores 23.77 months (range 4 – 74.78 months).

Results: All ankle fusion conversions done at our center were included; no patients were lost to follow-up. Twenty-five patients(19 females) with the mean age of 63.7 months(36.55-75.83) were followed with a mean follow-up of 22.19 months(4–74.78 months). The mean AOFAS improved pre-operatively 26.25(8.0-56.0) to the latest follow-up of 78(77-100). VR-12 Mental improved from 52.24(34.81-72.46) to 56.13(28.4–72.31), and Physical 21.88(13.34-35.79) to 36.49(19.82-50.39) pre-operatively to post-operatively, respectively. The AOS Pain improved: 533.33(243-898) to the latest follow-up 215.86(15 -641); AOS Disability: 628.67(306-900) to the latest follow-up 221.64(2-612).

Given patients have minimal to no dorsiflexion(DF) and plantarflexion(PF) with an ankle fusion, the range of motion increased with the affected ankle. Patients have a DF of 9.47degrees(2-15) and PF of 21.53degrees(12-35). Overall patients were satisfied with their results: 76.81/100.

Conclusion: This is a small study with reasonable short follow-up, but the evidence show very satisfactory functional outcomes after a conversion of an ankle fusion to a total ankle replacement. Patient selection is extremely important. Long-term follow-up will show whether the longevity of these replacements compare to primary replacements.