Functional Outcomes after Ankle Arthrodesis in Elderly Patients

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Summary:
This is a retrospective case-series evaluating the outcomes of ankle arthrodesis in patients over the age of 70. Thirty patients (30 ankles) were identified with 22 patients available for functional follow up. The average follow up time was 8.5 years for those patients living. The rate of fusion was 90%. The average AOFAS hindfoot score was 73.0, the average FAAM outcome score was 81.47 and patients evaluated their average function at follow up at 75.1% compared to their pre-arthritic state.

ABSTRACT:
Ankle arthrodesis has long been the gold standard of operative treatment for ankle arthritis refractory to nonoperative treatment. While multiple studies have documented outcomes after ankle fusion, none have looked specifically at outcomes in elderly patients. Our purpose was to evaluate the outcome of ankle fusion in patients over the age of 70. We focused on the rates of fusion, postoperative complications and overall subjective functional outcomes. Our hypothesis is that patients over the age of 70 who undergo ankle fusions have similar outcomes to those previously cited in the literature in regard to fusion rate, functionality and postoperative complications.

We retrospectively identified 30 consecutive patients over the age of 70 treated with isolated ankle fusion between January 1st 1999 and December 31st 2004. Medical records were studied paying attention to the diagnosis, type of fixation, medical comorbidities, and postoperative complications. Radiographs were used to grade the degree of ankle and subtalar arthritis, time to fusion and formation of adjacent joint arthritis. The patients were contacted and the Foot and Ankle Ability Measure (FAAM) and American Foot and Ankle Society Hindfoot Score (AOFAS) were used to assess functional outcomes.

We identified 30 patients (30 ankles) over the age of 70 who had undergone ankle fusion. Average age at the time of surgery was 74.5 years (+/- 3.7). Seven patients were deceased at final follow-up. The preoperative diagnosis was post-traumatic in 17 patients, osteoarthritis in 10, infected fibular nonunion with ankle arthritis in 2, and rheumatoid arthritis in 1. Radiographs were followed until union with an average follow up of 2.17 years. Union was achieved in 27 of 30 ankles (90%) with an average time to union of 17.81 +/- 8.08 weeks. Two patients had a delayed union (>6 months) but were united by 1 year after surgery. Postoperative radiographs showed 11 (36.6%) patients who had progression of their subtalar arthritis.

The FAAM was obtained postoperatively in 22 of the 23 patients still living. The average postoperative FAAM score was 81.47 (+/- 18.3) with an average follow up of 8.5 years (+/-1.7). Subjectively, when asked to compare present function to their pre-arthritic state the average response was 75.1% (+/- 19.6). The average AOFAS hindfoot score was 73.0 (+/- 11.5).

Complications included nonunion, deep infection and adjacent joint arthritis. Two nonunions went on to require revision fusion. One patient remained asymptomatic and elected to avoid any further surgery. There was 1 deep infection which required irrigation and debridement with subsequent hardware removal. Two patients went on to have a subtalar fusion at a later date due to symptomatic subtalar arthritis.

In our clinical cohort, we found ankle fusion to be effective in the treatment of ankle arthritis. Functional outcome was satisfactory in our patients and the rate of union was comparable to that previously reported in the literature for younger patients. While total ankle arthroplasty is becoming increasingly popular, ankle arthrodesis is an effective surgical treatment option in an elderly patient population.