Ankle Arthroplasty with Subtalar Fusion or Tibiotalocalcaneal Fusion for Patients with Concomitant Tibiotalar and Subtalar Arthritis

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Disclosures

My disclosure is in the final AOFAS Mobile App. I have no potential conflicts with this presentation.
The majority of tibiotalar arthritis is post-traumatic in origin.

Fusion remains the gold standard treatment but arthroplasty is increasing in popularity.

Comparative data remains sparse.
Background

- Arthritis may affect both tibiotalar and subtalar joint concomitantly
- No arthroplasty yet available for subtalar joint
- In patients with tibiotalar and concomitant subtalar arthritis even less comparative data exists
Methods

• Eight patients who had undergone a TTC fusion for end-stage arthritis of both the tibiotalar and subtalar joints at least 12 months previously were analyzed.

• Subjects wore a StepWatch3™ Activity Monitor for 14 days and completed a Musculoskeletal Functional Assessment (MFA) and Short Form 36 (SF-36).

• These patients were then compared to 11 subjects from a previous study who had a tibiotalar arthroplasty and a subtalar fusion performed during a single anesthesia who had similar measures taken at either 24 or 36 months following surgery.

• These two groups were then compared with outcome measures including step counts, MFA, and SF 36.

• The demographics of these groups including age, sex, BMI, and time from operation were also compared.
Results
Demographics

• The Two Groups were not significantly different:
  – Sex (4m/4F vs 8M/4F),
  – Age (60.1 vs 54 years),
  – BMI (28.22 vs 28.71)
  – Time from surgery (26 vs 33 months).

• Arthroplasty group
  – 8 DePuy Agility implants,
  – 3 Tornier Salto-Talaris implants.
TTC Fusion Patients had significantly Higher = Worse MFA scores
Arthroplasty patients had significantly better scores in Physical Function, Bodily pain, and Role Emotional.
Arthroplasty patients had significantly higher step counts across all measurements.
Conclusions

• Despite the small numbers in this study, arthroplasty patients still had significantly better clinical and functional outcomes than TTC fusion patients.

• Further study with larger numbers are needed to draw further conclusions.
References

• Acosta R, Ushiba J, Cracchiolo A. The results of a primary and staged pantalar arthrodesis and tibiotalocalcaneal arthrodesis in adult patients. FAI 2000 Mar; 21(3):182-94.


• Russotti GM, Johnson KA, Cass JR. Tibiotalocalcaneal arthrodesis for arthritis and deformity of the hind part of the foot. JBJS AM 1988 Oct; 70(9):1304-7.

• Saltzman et al. Prospective controlled trial of STAR total ankle replacement versus ankle fusion: initial results. FAI 2009 Jul 30(7):579-96.