Rate of Subtalar Joint Degenerative Joint Disease Between Reamed and Unreamed Total Ankle Arthroplasty Systems

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Disclosure

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Our disclosures are in the Final AOFAS Program Book.

I have a potential conflict with this presentation due to:
Consultant relationship, WMT (GCB, CFH)
Perspectives

• Total Ankle Arthroplasty (TAA) has become a highly successful treatment for osteoarthritis, post-traumatic arthritis, & rheumatoid arthritis
• Provides pain relief and diminishes STJ DJD
• Prosthesis design and engineering has seen an evolution not only in componentry, but even more so in accuracy of implantation
• Guidance systems have evolved from external jigs to pre-operative CT-based cutting guides
Rationale

• Unlike ankle fusions, TAA has been designed to prevent progressive adjacent joint arthritis
• Unique TAA guidance system with a 6 mm drill placed from plantar heel through hindfoot, into tibia
• Proximity to posterior STJ raises question of joint involvement
Question

• Does the use of an intramedullary reamed guidance device increase the risk of STJ arthritis versus an unreamed prosthesis?

Hypothesis

• There is not a clinical difference in STJ arthritis over time between the use of an unreamed (e.g. Salto-Talaris) versus reamed TAA prosthesis (e.g. INBONE)
Study Design

• Retrospective Chart & Radiograph Review over 3 yr. period
• 40 Reamed Prostheses
• 36 Unreamed Prostheses
• Lateral Radiographs Analyzed
  – Pre-operative ➔ Final Post-operative film
  – Utilized 3-point Scoring System
STJ DJD Scoring System

Radiographic Grading System for Arthritis

0
No Narrowing, Osteophytes

1
>3 mm of joint space, minimum narrowing of joint space compared with contralateral side, osteophytes

2
1-3 mm of joint space, moderate narrowing of joint space compared with contralateral side, marked formation of osteophytes, bone sclerosis

3
Obliteration of joint space
Results

- Average Pre-op Score (p>0.05)
  - Reamed: 1.30
  - Unreamed: 1.39

- Average Post-op Score (p>0.05)
  - Reamed: 1.37
  - Unreamed: 1.76

- Follow-up (wks)
  - Reamed: 23 +/- 10.6
  - Unreamed: 39 +/- 16.2

- Revision Fusions
  - Reamed: 0 STJ
  - Unreamed: 2 STJ, 2 TTC

58 y.o. Female s/p 3 months

s/p 3 years
Clinical Relevance

- Limited data comparing prostheses head to head
- Slight increase in STJ disease in the Unreamed TAA system
- No clinically significant difference exists between the two systems regarding STJ arthritis, despite the anatomic proximity to the STJ
References
