Symptomatic Hardware Removal of First Tarsometatarsal Joint Arthrodesis

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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: Stryker, WMT (CFH)
Premise

• Indications for plate fixation are commonplace in many foot and ankle surgeries
  – Including first tarsometatarsal (TMT) Joint Arthrodesis
• Complications regarding painful, irritating hardware must be addressed
• Thin dorsal skin may increase risk for problems
Hypothesis

• First tarsometatarsal joint arthrodesis by author’s technique:
  – First Metatarsal → Intermediate Cuneiform Interfragmentary Screw
  – Dorsomedial First TMT Locking Neutralization Plate
• Preferred technique will have an equal or lower hardware removal rate than historical controls
Methodology

• Retrospective chart review
• 277 patients over 7 years
• Preferred technique
• Outcome measures included complications, removal of hardware and time to radiographic fusion
• Exclusion criteria included Charcot neuroarthropathy, revisions and malunions/nonunions
Results

- 277 Charts Reviewed
  – Age 52.5 y.o. (28-77)
  – F/U 32 mo (5-85)
  – Time to Fusion
    • 13 weeks (4-70)
  – 8% (22) required HWR due to irritation
Literature Review

• Sorenson and Hyer reported a 4.76% hardware removal rate as a secondary outcome\(^1\)
• Coetzee and Wickum required a 8.7% hardware removal\(^2\)
  – Did not discern HWR for nonunions vs. irritation
Conclusions

- Our results are consistent with previously reported rates
- Considerations for medial versus dorsomedial plate placement
Clinical Relevance

• Hardware placement in foot and ankle surgery is precarious
• One must be diligent about using low-profile, contoured plates
• This allows surgeons to safely quote an 8% hardware removal rate due to irritation in first tarsometatarsal joint arthrodesis