The use of a fibular nail to treat fibular fractures in patients with diabetes: A prospective cohort study with CT analysis of healing

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Conflict of interest

- Alastair Younger consults with Acumed.
- Consultant Wright medical, Acumed, Cartiva, Zimmer
- Institutional support from Acumed, Zimmer, Bioventus, Bioset, Wright medical, Cartiva, Amniox.
- Educational support from Synthes, Conmed Linvatec
- Reviewer JBJS A, BJJ, FAI, KSST
- Committees for COA, COFAS, AOFAS
Introduction

• Ankle fractures in patients with diabetes have a higher rate of wound infection, wound breakdown and infection.

• Because of these complications a prospective series of 10 ankle fractures in patients with underwent review.
The clinical problem and the solution
Methods

• Prospective review of 10 patients
• Demographics
• Outcomes – wound complications, reoperation rates
• outcome scores of SF 36 and AOS
• CT assessment of healing of the fracture at 12 and 24 weeks
• Analysis of the CT healing in Sagital and Coronal planes
CT healing on Sagittal views – 12 weeks.
CT healing on Coronal views – 12 weeks
Results

• No patient had a below-knee amputation.

• One patient was excluded because of mortality before the 12 week visit. A second patient survived the 12 week follow up and died before 24 weeks.

• Successful bone bridging was seen in all patients by 12 weeks. The bone bridging was estimated to be 70  +/- 16\% (SD) on the sagittal view and 75 +/- 10\% on the coronal view at 12 weeks and was on the 82\% sagittal view and 80\% on the coronal view at 24 weeks.

• No hardware failure was seen. No fracture failed to unite. There were no mal-unions or non-unions either clinically or radiographically. There was one proximal locking screw wound treated with debridement and antibiotics with successful outcome. This patient developed a charcot arthropathy and underwent ankle fusion.
• CONCLUSIONS
  • CT scan assessment indicates that successful bone bridging can be achieved with a fibular nail in patients with diabetes
  • An RCT would be required to determine how this compares to plate fixation within this patient population
  • CT scan assessment appears to be a reliable method to determine bone healing for fractures on Sagittal and coronal views.
  • The Coronal view had a lower standard of deviation compared to the sagittal view and was lower at 24 weeks compared to 12 weeks
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References


References (cont)


