Intramedullary Nail Fixation of the Fibula as a Treatment Alternative of Ankle Fractures in a High Risk Patient Population

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Disclosure

No Conflict to Disclose

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Our disclosures are in the Final AOFAS Mobile App. We have no potential conflicts with this presentation.
Purpose

To identify high risk patients with multiple comorbidities who underwent fixation of unstable ankle fractures using an intramedullary fibular nail implant and present the clinical outcomes, complications, and Olerud and Molander scores.
Methods

• Retrospective review
  - High risk patients with fibular IMN
  - January 2011 and June 2015
• All surgeries were at the same institution by the senior author
• Attempts were made to contact all patients
  – Olerud and Molander Score
  – Satisfaction questionnaire
High Risk

- Uncontrolled Diabetes
- Neuropathy
- Peripheral Vascular Disease
- Alcoholic abuse
- Drug abuse
- Drugs impairing wound healing (steroids, biologics, chemo)
- Non-compliant patients (mental illness, incarceration)
- Poor skin quality
- Excessive soft tissue edema
22 high risk patients with 23 ankle fractures were included

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<tbody>
<tr>
<td>Average age (range)</td>
<td>64.3 years (41-82)</td>
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<td>Male / Female</td>
<td>11/11</td>
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<td>Average tourniquet time (range)</td>
<td>35.6 minutes (0-72)</td>
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<td>Average operative time (range)</td>
<td>49.5 minutes (25-70)</td>
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<td>Average time until WBAT (range)</td>
<td>6.0 weeks (0-30)</td>
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<td>Average follow-up (range)</td>
<td>5.7 months (2-30)</td>
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<tr>
<td>Fracture Pattern</td>
<td>18 bimalleolar/ 5 trimalleolar</td>
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Results

• All fractures went on to heal with radiographic evidence of bony union
• 4 patients non-compliant → Began weight bearing immediately postoperatively
• 1 patient with a severe medial fracture blister pre-dating surgery required skin grafting and had delayed weightbearing due to skin healing (30 weeks)
Complications

• No surgical site infections, wound complications or non unions
• 2 patients required return to the OR for symptomatic screw removal
  – 1 syndesmotic screw backed out, 1 distal AP screw
  – Both patients non-compliant with weight bearing restrictions
• All nails were retained at last follow-up
• 14 of the 22 patients were reached for participation
• Average time from follow up to questionnaire: 24.8 months (8-35)
• Average Olerud and Molander score: 77.9 (40-100)
• Satisfaction survey
  – 64% very satisfied
  – 29% satisfied
  – 7% somewhat satisfied
Conclusion

The intramedullary fibular nail construct is a viable alternative method of fixation that allows for protection of soft tissue, stable fracture fixation and satisfactory outcomes in the high risk patient population.

Further Level 1 research is needed to determine the long term outcomes of intramedullary fibular nails compared to plate and screw fixation.
References


