Comparison of Dynamic Versus Static Proximally Locked Retrograde TTC Intramedullary Nails

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Disclosure

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Our disclosures are in the Final AOFAS Program Book.
I have no potential conflicts with this presentation.
Purpose/Methods

• Compare union rate and time to fusion of static proximal lock retrograde TTC IM nail fixation vs. dynamic proximal lock fixation

• IRB approved study

• Retrospective comprehensive radiographic and chart review from RAIN database 2003-current

• Minimum inclusion criteria = 6 months follow up
Methods

• 60 Patients met criteria
  – **Inclusion Criteria** = Post-traumatic arthritis, primary osteoarthritis, deformity
  – **Exclusion Criteria** = Charcot, failed TAR, talar AVN

• **Definitions**
  – **Union** = Trabeculation across three cortices
  – **Non-Union** = Absence of trabeculation across three cortices, or visible gap at the arthrodesis site

• Radiographs reviewed by three fellowship trained surgeons
Results

• Mean Age:
  – Static proximal lock group 56.9 years
  – Dynamic proximal lock group 54.1 years
- Unpaired T test P=0.493
  • No statistically significant difference in age

Mean BMI:
  – Static proximal lock group 34.03
  – Dynamic proximal lock group 33.43
  • No statistically significant difference in BMI
Results

• Time to Fusion Ankle Joint
  – Static proximal lock group 111.6 days
  – Dynamic proximal lock group 97.2 days
  – Non parametric two tailed Mann-Whitney test $P=0.39$. TTF was not statistically significant

• Radiographic Union of Ankle Joint
  – Static proximal lock group 91.6% union
  – Dynamic proximal lock group 93.3% union
  – No statistical significance
Results - Union Rate Ankle

- Dynamic Proximal Locking Group: 93.3%
- Static Proximal Locking Group: 91.6%
Results - Time to Union Ankle

Fusion Time (Days)

<table>
<thead>
<tr>
<th>Group</th>
<th>Fusion Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Proximal Locking Group</td>
<td>97.2</td>
</tr>
<tr>
<td>Static Proximal Locking Group</td>
<td>116.6</td>
</tr>
</tbody>
</table>

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Conclusion

- *Union rate of the Ankle joint* of dynamic proximal locking vs. static group
  - No statistically significant difference
- *Time to fusion* of dynamic group vs. static group
  - No statistically significant difference
- Both Dynamic and Static proximal lock constructs are highly reliable with greater than 90% successful union of the ankle in this series
References


