ANKLE VALGUS AFTER HINDFOOT ARTHRODESIS: A RADIOGRAPHIC & CHART COMPARISON OF THE MEDIAL DOUBLE & TRIPLE ARTHRODESES

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Disclosure

Ankle Valgus After Hindfoot Arthrodesis: A Radiographic & Chart Comparison of the Medial Double & Triple Arthrodeses

Ryan T. Scott, DPM, AACFAS

Our disclosures are in the Final AOFAS Program Book. There are no potential conflicts with this presentation.
Indications for Medial Double

• Severe valgus deformity
  – Stage 2B or 3

• Hindfoot arthrosis
  – Revision cases
Purpose

• Answer & Quantify
  – When compared to the triple,
    • more ankle valgus?
    • outcomes?
Methods

• IRB approval retro chart & x-ray review
  – Inclusion:
    • ≥ 6 months follow-up
    • Pre & Post WB foot & ankle x-rays
  – Exclusion:
    • Ankle valgus (>6°) pre-op
    • Revision of previous hindfoot fusion
    • S/P clubfoot reconstruction or NM correction
Endpoints

• Primary
  – Ankle valgus (>6°)
  – Alignment
    • TN coverage & calcaneocuboid angle
    • Lateral talar-1st metatarsal angle

• Secondary
  – Radiographic fusion
  – Complications
Group Demographics

<table>
<thead>
<tr>
<th></th>
<th># Pts</th>
<th>F/U</th>
<th>Age</th>
<th>Gender</th>
<th>Side</th>
<th>BMI</th>
<th>Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medial</td>
<td>16</td>
<td>8.8 ± 4.0 m</td>
<td>62.3 ± 9.2 yrs</td>
<td>12 females, 4 males</td>
<td>6 Left, 10 Right</td>
<td>34.8</td>
<td>2 current, 2 former</td>
</tr>
<tr>
<td>Triple</td>
<td>62</td>
<td>17.5±10.2 m</td>
<td>61.0±11.0 yrs</td>
<td>46 females, 16 males</td>
<td>28 Left, 34 Right</td>
<td>35.7</td>
<td>8 current, 7 former</td>
</tr>
</tbody>
</table>

- 275 pts identified with CPT codes
- No difference in co-morbidities
## Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Ankle Valgus</th>
<th>Mean % TN Coverage</th>
<th>Mean Talo-1st Angle</th>
<th>Mean CC Angle</th>
<th>Union</th>
<th>Complications *</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medial</strong></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><em>Pre</em></td>
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<td></td>
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<tr>
<td><em>Post</em></td>
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<tr>
<td></td>
<td></td>
<td>0.50°± 1.55 (0-6)</td>
<td>54.7%</td>
<td>20.4°</td>
<td>149.6°</td>
<td>1 TNJ Non</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.55°± 3.14 (0-10)</td>
<td>99.3%</td>
<td>6.3°</td>
<td>166.6°</td>
<td>1 TNJ Delayed</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 DVT 1 Revision</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1 ROH</td>
</tr>
<tr>
<td><strong>Triple</strong></td>
<td></td>
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<tr>
<td><em>Pre</em></td>
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<td></td>
</tr>
<tr>
<td><em>Post</em></td>
<td></td>
<td>1.44°± 2.09 (0-6)</td>
<td>61.7%</td>
<td>14.6°</td>
<td>152.5°</td>
<td>10 Non</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.40°± 3.55 (0-17)</td>
<td>90.8%</td>
<td>6.9°</td>
<td>159.3°</td>
<td>4 Delayed</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 Ankle Fx 9 Revisions</td>
</tr>
</tbody>
</table>

*no difference in the # of complications between the two groups p = 0.1649*
Medial Double Conclusions

- The odds of a patient having an increase in ankle valgus in the triple group is 4.047 times the odds for the double group.
- Significantly less ankle valgus post-operatively.
Thank you