Correction of Severe Flexible Pes Planovalgus Deformity Using Trabecular Metallic Wedges

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Disclosures

• Our disclosures are in the AOFAS final mobile app

• We have no potential conflicts in this presentation.
Background

• Lateral column lengthening and Cotton osteotomy are two procedures used to correct flexible pes planovalgus.

• Traditionally, autograft or allograft have been used to fill these osteotomy sites.

• Hypothesis: Trabecular metal wedges provide long-term correction and high rate of union while avoiding pitfalls seen with autograft or allograft.
Methods

• **Subjects**
  – Patients who underwent lateral column lengthening and/or Cotton osteotomy with metal wedge
  – Minimum of 2 year follow up

• **Evaluation pre and postop**
  – VAS pain score
  – Radiographic evaluation
  – Complications
Radiographic measurements

- AP radiograph
  - Talo-1st metatarsal angle *(Yellow)*
  - Talar head uncoverage *(Red)*
- Lateral radiograph
  - Talo-1st metatarsal angle *(Brown)*
  - Talocalcaneal angle *(Blue)*
  - Calcaneal pitch *(Green)*
Results

• 94 feet in 84 patients

• Mean follow up 45 months

• All radiographic parameters and VAS pain score significantly improved
Results

- Overall complication rate = 6.4%
- 3 nonunions
  - 1 asymptomatic
  - 1 successful revision
  - 1 lost to follow up
- No loss of correction or collapse in any patients
### Results

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>p-value (paired t-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VAS</strong></td>
<td>59.7</td>
<td>35.1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>AP Talo-1&lt;sup&gt;st&lt;/sup&gt; metatarsal angle</strong></td>
<td>18.3</td>
<td>5.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Calcaneal pitch angle</strong></td>
<td>14.6</td>
<td>19.1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Lateral talo-1&lt;sup&gt;st&lt;/sup&gt; metatarsal angle</strong></td>
<td>21.4</td>
<td>7.1</td>
<td>&lt;0.001</td>
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<tr>
<td><strong>Lateral talocalcaneal angle</strong></td>
<td>51.2</td>
<td>46.9</td>
<td>&lt;0.001</td>
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<tr>
<td><strong>Talonavicular uncoverage angle</strong></td>
<td>32.7</td>
<td>15.3</td>
<td>&lt;0.001</td>
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</tbody>
</table>
Discussion

• Trabecular titanium wedges were found to be effective in improving radiographic parameters and pain.

• Union rate was similar or better than what has been described for allograft or autograft.

• Further studies need to be done to evaluate long-term functional outcome.
References


