Extensile Lateral Approach Versus Sinus Tarsi Approach For Intra-Articular Calcaneal Fractures Comparative Study

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Extensile Lateral Approach Versus Sinus Tarsi Approach For Intra-Articular Calcaneal Fracture: Comparative Study

Presenter: Christian Urbina

My disclosure is in the Final AOFAS Mobile App.

I have no potential conflicts with this presentation.
Introduction

- Classically, intra-articular calcaneal fractures were treated using a extensile lateral approach
  - Kikuchi et al. FAI 2013
  - Makki et al. JBJS Br 2010

- In recent years, the sinus tarsi approach has gained popularity because it is less invasive and could avoid complications related to larger approaches
  - Ebraheim et al. FAI 2000
  - Nosewicz et al. FAI 2013
Objective

- To compare intra-articular calcaneal fractures treated with extensile lateral approach versus sinus tarsi approach
Methods

• Retrospective comparative study (level III)
• 2011-2014 (level - one trauma center)
• Worker’s compensation context
• 95 intra-articular calcaneal fractures in 87 patients
  43 using extensile lateral approach
  52 using sinus tarsi approach
• Based on surgeon preference
• Reduction evaluated using pre- and post-operative Bölher’s angle
Major and minor complications related to the surgical wound were analyzed

- Minor complications: minimal wound breakdown, superficial infection (local wound care, no admission)
- Major complications: extensive wound necrosis, deep infection (admission)
## Results

### Demographic Data

<table>
<thead>
<tr>
<th></th>
<th>Extensile Lateral</th>
<th>Sinus Tarsi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>40.7</td>
<td>42.7</td>
</tr>
<tr>
<td>Gender (M/F)</td>
<td>42/1</td>
<td>45/7</td>
</tr>
<tr>
<td>Time to surgery (days)</td>
<td>12.6</td>
<td>11.8</td>
</tr>
</tbody>
</table>

### Sanders Classification

<table>
<thead>
<tr>
<th></th>
<th>Extensile Lateral</th>
<th>Sinus Tarsi</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>42.5%</td>
<td>68.6%</td>
</tr>
<tr>
<td>III</td>
<td>50%</td>
<td>27.4%</td>
</tr>
<tr>
<td>IV</td>
<td>7.5%</td>
<td>4%</td>
</tr>
</tbody>
</table>
# Results

<table>
<thead>
<tr>
<th>Wound Complications</th>
<th>Total (n:95)</th>
<th>Extensile Lateral (n:43)</th>
<th>Sinus Tarsi (n:52)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor</td>
<td>19</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Major</td>
<td>9</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>17</td>
<td>11</td>
</tr>
</tbody>
</table>

No statistically significant differences
## Results

<table>
<thead>
<tr>
<th>Mean Böhler’s angle</th>
<th>Extensile Lateral</th>
<th>Sinus Tarsi</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-operative</strong></td>
<td>-0.1º</td>
<td>4.5º</td>
</tr>
<tr>
<td><strong>Post-operative</strong></td>
<td>25.9º</td>
<td>24.1º</td>
</tr>
</tbody>
</table>
Discussion

- Our rate of major complications (8%) is similar to literature reports.
- The rate of minor complications could be due to our strict definition of wound healing complications.
- We achieved a good Böhler’s angle correction, but is necessary the use of CT scan to evaluate articular reduction.

Limitations:
- Retrospective and non-randomized study
- Different surgeons
- No data collection in relation to tobacco and comorbidities
Conclusions

- There is a tendency to have less wound complications using the sinus tarsi approach.

- Both approaches can achieve similar postoperative Bohler’s angle.
References

- Kikuchi C, Charlton TP, Thordarson DB. Limited sinus tarsi approach for intra-articular calcaneus fractures. Foot Ankle Int. 2013