Does Sesamoid Reduction affect Patient Related Outcome Measures in Hallux Valgus Surgery?

RS Ahluwalia, C Elliott, P Weller, GE Jackson, NP Geary, SR Platt, MS Hennessy

Wirral University Teaching Hospital NHS Foundation Trust, UK
Disclosures

RS Ahluwalia

My disclosure is in the Final AOFAS Mobile App. I have no potential conflicts with this presentation.
• Okuda et al, 2009 found postoperative incomplete reduction of the sesamoids was a risk factor for recurrence of hallux valgus following surgery.

• It is not known whether incomplete reduction of the sesamoids is also a risk factor for poor patient reported outcome following hallux valgus surgery.
The aim of this study was to determine whether a relationship exists between the postoperative sesamoid position and the patient related outcome measures following hallux valgus surgery.
Methods

• Adult patients who underwent a scarf osteotomy and distal soft tissue release +/- akin osteotomy for hallux valgus in our unit were included.

• Dorsoplantar weight-bearing radiographs at 6 weeks post op were assessed for
  – Sesamoid position
  – Hallux valgus angle

• Assessment was by a surgeon (CE) not involved in the decision to operate or surgical procedure.
Methods

- Seasmoid reduction was classified using the Hardy and Clapham classification also used by Okuda et al (2009).

- We graded the position of the medial sesamoid in the postoperative images from I through VII.

- We defined a grade of IV or less as anatomical reduced position of the medial sesamoid.

- Grade V or greater as continued lateral displacement of the sesamoid.
Methods

• All patients completed pre-operative patient related outcome measures in the form of the Manchester-Oxford foot questionnaire (MOXFQ) which assesses 3 domains
  – Walking and standing
  – Pain
  – Social Interaction

• Follow up questionnaires were completed at 12 (10-15) months.

• Improvement in MOXFQ scores at 12 months were compared to post operative sesamoid reduction & hallux valgus angle.

• Statistical analysis was performed
  – t-test and regression analysis.
Results

• 129 feet had a scarf osteotomy and distal soft tissue release +/- akin osteotomy

• 94 patients had completed preoperative and 12 month post op MOXFQ questionnaires.

• Evaluation of sesamoid position on weight bearing radiographs at 6 weeks post-op indicated
  
  – 70.2% (n=64) were classified as grade IV or less (adequate reduction)

  – 29.8% (n=28) as grade V or VI
Results

• All patients showed an improvement in their mean MOXFQ scores in all domains at 12 months post op.

• Regression analysis did not correlate pre-operative and post-operative hallux valgus angle or greater mean correction of hallux valgus angle with improved MOXFQ results.

• In total there were 3 revisions at 1 year, one in the anatomically reduced and two in the displaced sesamoid group.
### Mean Score Improvement in MOXFQ Domains

<table>
<thead>
<tr>
<th></th>
<th>Adequate Sesamoid Reduction (I-IV)</th>
<th>Continued Sesamoid Displacement (V-VII)</th>
<th>P</th>
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</thead>
<tbody>
<tr>
<td>Walking and standing</td>
<td>17.4</td>
<td>14.07</td>
<td>&lt; 0.02</td>
</tr>
<tr>
<td>Pain</td>
<td>10.03</td>
<td>8.23</td>
<td>&lt; 0.04</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>8.3</td>
<td>6.8</td>
<td>&lt; 0.07</td>
</tr>
</tbody>
</table>
Discussion

- Scarf osteotomy with distal soft tissue release +/- akin osteotomy resulted in improvements in all 3 domains of the MOXFQ at 12 months post op in our unit.

- Patients with an adequate operative sesamoid reduction had a greater improvement in walking and standing and pain domains than those with incomplete reduction in our series.

- There are many potential factors which contribute to a successful outcome following hallux valgus surgery.

- Our results suggest that adequate sesamoid reduction may contribute to improved patient related outcome scores.
References: