Does the Femoral CAM Lesion Regrow After Osteoplasty for FAI? Two-Year Follow-Up

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Background

• There are currently no studies that have looked at the recurrence of the cam lesion after femoral neck osteoplasty for femoroacetabular impingement (FAI).

• While Patient Related Outcome (PRO) scores at mid-term follow-up have shown continued success, maintenance of a normalized alpha-angle has not been shown radiographically.
Purpose and Hypothesis

• Assess the radiographic recurrence of cam deformity at two-year follow-up after adequate decompression during the index hip arthroscopy and correlate with PRO scores.

• Hypothesis - That there is no recurrence or regrowth of the cam deformity at the two-year postoperative time-point following adequate cam decompression during hip arthroscopy.
Methods

• Between March 2009 and January 2011 data was prospectively collected on all patients undergoing hip arthroscopy with femoral neck osteoplasty.

• Minimum follow-up was two years with radiographic images for review.

• Patient-reported outcome scores were recorded before surgery, at 3 months, and at 2 years using the modified Harris Hip Score (mHHS), Hip Outcome Score – Activity of Daily Living (HOS-ADL), Hip Outcome Score – Sports Specific Scale (HOS-SSS), and Non-Arthritic Hip Score (NAHS). Pain was recorded on a visual analog scale (VAS), and satisfaction was recorded on a scale from 0 to 10.
## Inclusion and Exclusion Criteria

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preop Alpha Angle &gt; 60 degrees</td>
<td>Lack of Dunn profile radiographs at any time point measured</td>
</tr>
<tr>
<td>Postop Alpha Angle &lt; 50 degrees</td>
<td>No 2-year follow up</td>
</tr>
<tr>
<td>at 2-weeks</td>
<td></td>
</tr>
<tr>
<td>Femoroplasty performed</td>
<td></td>
</tr>
<tr>
<td>2-year follow up</td>
<td></td>
</tr>
</tbody>
</table>
# Results - Demographics

- A total of 47 patients met inclusion criteria.

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>37.18 (31.7-47.43)</td>
</tr>
<tr>
<td>Gender (% of Male)</td>
<td>28 (59.57%)</td>
</tr>
<tr>
<td>Side (% of Right)</td>
<td>28 (59.57%)</td>
</tr>
<tr>
<td>Work Comp (% of Yes)</td>
<td>7 (14.89%)</td>
</tr>
<tr>
<td>Duration of Symptoms (Months)</td>
<td>100 (2-482)</td>
</tr>
<tr>
<td>Acute Injury (% of Yes)</td>
<td>17 (36.17%)</td>
</tr>
<tr>
<td>Height Total (inches)</td>
<td>68.77 (63-74)</td>
</tr>
<tr>
<td>Weight (lbs)</td>
<td>171.63 (102-260)</td>
</tr>
<tr>
<td>BMI (calculated)</td>
<td>26.1 (18.1 – 33.4)</td>
</tr>
</tbody>
</table>
Results - Radiographic

- Mean follow-up was 28.32 months.

Alpha Angle:
- Mean preoperative alpha angle (Dunn view) was 70 degrees, and mean 2-week postoperative alpha angle was 42.79 degrees (p<0.0001), indicative of adequate decompression.
- Mean 2-year postoperative alpha angle was 42.72 degrees (p=0.93) when compared to 2-week postoperative data).

Femoral Offset:
- Mean preoperative femoral offset was 3.7 mm, and mean 2-week postoperative femoral offset was 7.8 mm (p<0.0001), indicative of adequate decompression.
- Mean 2-year post-operative femoral offset was 8.0 mm (p=0.63 when compared to 2-week postoperative data).

<table>
<thead>
<tr>
<th></th>
<th>Preoperative</th>
<th>2-week Postoperative</th>
<th>P-value</th>
<th>2-year Postoperative</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Angle</td>
<td>70 (60-97)</td>
<td>42.79 (32-50)</td>
<td>&lt;.0001</td>
<td>42.72 (32-54)</td>
<td>0.93</td>
</tr>
<tr>
<td>(Degrees)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Femoral Offset</td>
<td>3.7 (0-9.9)</td>
<td>7.8 (3-13.9)</td>
<td>&lt;.0001</td>
<td>8.0 (2.4-12.8)</td>
<td>0.63</td>
</tr>
<tr>
<td>(mm)</td>
<td></td>
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</tbody>
</table>
Results - Outcomes

- All PRO scores were significantly improved at 3 months compared to preoperative scores.
- All PRO scores remained about the same from 3 months to 2 years except for VAS, which increased significantly from 3 months to 2 years.

<table>
<thead>
<tr>
<th>PRO</th>
<th>Pre-op</th>
<th>3 month</th>
<th>P value (pre-op to 3 month)</th>
<th>2 years</th>
<th>P value (3 month to 2 year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>mHHS</td>
<td>58.43</td>
<td>78.92</td>
<td>p&lt;.05</td>
<td>79.55</td>
<td>p&gt;.05</td>
</tr>
<tr>
<td>HOS-ADL</td>
<td>61.15</td>
<td>80.48</td>
<td>p&lt;.05</td>
<td>80.65</td>
<td>p&gt;.05</td>
</tr>
<tr>
<td>HOS-SSS</td>
<td>37.38</td>
<td>61.84</td>
<td>p&lt;.05</td>
<td>62.54</td>
<td>p&gt;.05</td>
</tr>
<tr>
<td>NAHS</td>
<td>54.38</td>
<td>78.47</td>
<td>p&lt;.05</td>
<td>78.70</td>
<td>p&gt;.05</td>
</tr>
<tr>
<td>VAS</td>
<td>5.85</td>
<td>2.79</td>
<td>p&lt;.05</td>
<td>2.85</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>7.85</td>
<td></td>
<td></td>
<td>7.91</td>
<td></td>
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</table>
Conclusion

• There is no recurrence of cam deformity at two-years following femoral neck osteoplasty for FAI with improved PRO scores at the 3-month and two-year postoperative time-points.
References


References continued


