Outcomes after Isolated Acetabular Osteoplasty for Combined-Type Femoroacetabular Impingement

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Disclosures

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I have no financial relationships to disclose.
Background

The arthroscopic treatment of FAI involves adequate decompression of the underlying osseous abnormalities\(^1\)\(^-\)\(^5\).

While each lesion is typically separately addressed, femoral osteochondroplasty carries a theoretical risk of avascular necrosis, heterotopic ossification, and femoral neck fracture\(^6\)\(^-\)\(^8\).
Purpose

The purpose of this study was to evaluate whether acetabular rim resection may allow for adequate decompression in combined-type FAI.
Methods

Flow of Patients Included in the Study

- Hip arthroscopy patients assessed for eligibility (n=101)
- Excluded (n=58)
  - No CAM lesion (n=33)
  - Preoperative x-rays unavailable (n=21)
  - Femoral osteochondroplasty (n=4)
- Patients eligible for inclusion (n=43)
- Unavailable for follow-up (n=18)
- Patients included in final analysis (n=25)

29 hips (25 patients) with combined-type FAI that underwent arthroscopic isolated acetabular osteoplasty were identified
Methods

Preoperative information was recorded

\textit{Alpha-angle}

\textit{Tönnis Grade}

Clinical outcomes were assessed at a minimum 2-year follow-up

\textit{Modified Harris Hip Score (MHHS)}

\textit{Patient Satisfaction Score (on a scale from 1-10)}

\textit{Revision Surgery}

\textit{Conversion to Arthroplasty}

\textit{Complications}
# Results

## Demographics

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age</td>
<td>28.5 years (range, 17-54)</td>
</tr>
<tr>
<td>Mean Follow-up</td>
<td>33.1 months (range, 24.4-54.9)</td>
</tr>
<tr>
<td>Mean α-angle</td>
<td>64.0° (range, 55-77)</td>
</tr>
</tbody>
</table>

## Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Mean Post-op MHHS</td>
<td>81</td>
</tr>
<tr>
<td>95% CI:</td>
<td>71.2 - 89.9</td>
</tr>
<tr>
<td>Mean Post-op Satisfaction Score</td>
<td>7.9</td>
</tr>
<tr>
<td>95% CI:</td>
<td>6.7 - 9.3</td>
</tr>
</tbody>
</table>
Results

Outcomes Compared by Radiographic Findings of Degenerative Changes

<table>
<thead>
<tr>
<th>Tönnis Grade</th>
<th>n</th>
<th>Modified Harris Hip Score</th>
<th>Patient Satisfaction Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Variance</td>
</tr>
<tr>
<td>0</td>
<td>6</td>
<td>97</td>
<td>15.7</td>
</tr>
<tr>
<td>I</td>
<td>14</td>
<td>97</td>
<td>13.7</td>
</tr>
<tr>
<td>II</td>
<td>9</td>
<td>45</td>
<td>14.0</td>
</tr>
</tbody>
</table>

Patients with Tönnis grade 0 and I findings had higher MHHS and satisfaction scores than patients with Tönnis grade II changes.
Results

Figure 2: Age vs. MHHS and Satisfaction

- MHHS, $r^2 = 0.836$, $p < 0.001$
- Satisfaction, $r^2 = 0.767$, $p < 0.001$

Patient age correlated with MHHS and satisfaction scores
No significant correlation was noted between the preoperative alpha-angle and either MHHS or satisfaction scores.
## Conclusions

Comparison of Our Findings to Previously Published Reports

<table>
<thead>
<tr>
<th>Study</th>
<th>“N” of hips included</th>
<th>Procedure</th>
<th>Mean Follow-up</th>
<th>Mean Post-op MHHS</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>This Study</td>
<td>29</td>
<td>Isolated acetabular osteoplasty</td>
<td>33.1 months</td>
<td>81 in all (97 in Tönnis Grade 0 and I)</td>
<td>No major complications</td>
</tr>
<tr>
<td>Larson and Giveans</td>
<td>100</td>
<td>Femoral +/- acetabular osteoplasty</td>
<td>9.9 months</td>
<td>82.7</td>
<td>6 patients had HO, 3 went on to THA</td>
</tr>
<tr>
<td>Philippon et al</td>
<td>112</td>
<td>Femoral +/- acetabular osteoplasty</td>
<td>2.3 years</td>
<td>84</td>
<td>10 patients to THA</td>
</tr>
<tr>
<td>Byrd and Jones</td>
<td>200 (athletes)</td>
<td>Femoral +/- acetabular osteoplasty</td>
<td>19 months</td>
<td>96 (median score)</td>
<td>1 HO, 1 to THA, 4 repeat arthroscopies</td>
</tr>
<tr>
<td>Park et al</td>
<td>200</td>
<td>Femoral +/- acetabular osteoplasty</td>
<td>28.2 months</td>
<td>80.45</td>
<td>1 HO, 5 second look surgeries</td>
</tr>
</tbody>
</table>
Conclusion

Good-to-excellent outcomes and a high degree of patient satisfaction were noted, especially in younger patients without degenerative changes.

The preoperative alpha-angle had no effect on postoperative outcomes.

Further investigation, including prospective studies, are needed to better understand the potential role of acetabular osteoplasty in this population.
References


