Arthroscopic Hip Revision Surgery for Residual FAI: Surgical Outcomes

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Introduction

Femoroacetabular impingement (FAI) corrective procedures are being performed with increased frequency. There is a steep surgical learning curve and residual FAI can lead to continued pain and disability. There is very limited data reporting outcomes after revision arthroscopy for residual FAI.

Our objective was to evaluate outcomes after arthroscopic hip revision surgery and to identify predictors of outcomes. Our hypothesis was that outcomes after revision arthroscopic preservation would be inferior to reported outcomes after primary arthroscopic hip preservation surgery for FAI.

Methods

The records of patients between 2007 to 2011 that underwent arthroscopic hip revision surgery for residual FAI based on plain radiographs and 3D CT scans were reviewed (Figures 1 & 2). Pre and post-operative structural pathomorphology, intra-operative findings, and pre and post-operative outcomes measures using Modified Harris Hip Scoring (MHHS), SF-12 scoring, and pain on a visual analogue scale (VAS) were evaluated. Outcomes after revision arthroscopic FAI correction were compared to a cohort that underwent primary arthroscopic FAI correction.

We looked at demographic factors including age, gender, time from original surgery, and types and numbers of prior hip surgeries.

Results

49 patients (54 hips) underwent arthroscopic revision FAI correction (mean 19.7 months follow-up). There were 63 previous arthroscopic surgeries and 4 previous surgical dislocations. There were 26 males and 28 females with a mean age of 30.0 years (range 18 - 59). 49 hips had residual cam-type FAI, and 41 hips had residual pincer-type FAI and underwent femoral and rim resections, respectively. The labrum was debrided in 27 hips, repaired in 24 hips, and reconstructed with allograft in 2 hips. Adhesions were excised for 36 hips. The results of revision arthroscopic FAI correction were compared to 154 patients (169 hips) that underwent primary arthroscopic FAI correction (mean 25.2 months follow-up). The mean improvement for outcomes scores after revision FAI correction is shown in Table 1. Most recent outcomes scores and mean improvement in outcome measures were significantly better after primary (81% good/excellent results) compared to revision (64% good/excellent results) FAI correction (MHHS (p=.018), SF-12 (p<.01), VAS (p<.01)).

Increasing femoral head-neck offset post-operatively was predictive of better MHHS and greater improvement in MHHS after revision FAI correction (p < 0.05). Head neck offset of 6-9mm resulted in an improvement in MHHS of 13 points compared to 31 points with 13mm head-neck offset. There was a trend for improved scores for lower post-operative alpha angle (p = 0.052). Age and gender were not predictive of improved scores post-operatively.

Discussion

There have been two prior studies that reporting arthroscopic revision surgery (1,2). Both studies found that the most prevalent finding was residual deformity (FAI) in 79 to 95% of hips. One study reported improvements in MHHS from 56 to 77 points at 12.7 month follow-up (1). The current study showed improved outcomes after revision arthroscopic FAI correction that was inferior to outcomes after primary arthroscopic FAI correction (64% vs. 81% good/excellent outcomes).

Table 1. Outcomes for Revision vs. Primary FAI Correction

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Revision</th>
<th>Primary</th>
<th>P value</th>
</tr>
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<tbody>
<tr>
<td>MHHS improvement</td>
<td>14 pts</td>
<td>24 pts</td>
<td>0.018</td>
</tr>
<tr>
<td>Mean MHHS Last F/U</td>
<td>84 pts</td>
<td>89 pts</td>
<td></td>
</tr>
<tr>
<td>SF-12 improvement</td>
<td>9 pts</td>
<td>22 pts</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>VAS improvement</td>
<td>2.7 pts</td>
<td>4.6 pts</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Good / Excellent</td>
<td>64%</td>
<td>81%</td>
<td>&lt;0.01</td>
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Conclusion

With appropriate indications and expectations, arthroscopic hip revision surgery for residual FAI led to significantly improved outcome measures. Outcomes, however, were inferior to those after primary arthroscopic FAI corrective surgery.

References: