Chondrolabral Preservation with Labral Cuff Refixation in the Arthroscopic Management of Pincer Deformity

One Year Outcome and Comparison with an Existing Technique

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Financial Disclosure

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I have no financial relationships to disclose
Introduction

- Labral ‘takedown’ is required to adequately visualise the acetabular rim prior to bone recession for pincer deformity.

- Existing labral takedown techniques may result in surgical disruption of the important chondrolabral junction; while refixation techniques may result in anchor penetration, elevation and bunching of the labrum with suboptimal sealing\(^1\-^3\).

- A new operative technique - labral reflection and ‘cuff’ refixation preserves the chondrolabral junction and provides a more anatomical labral refixation, optimising chondrolabral function\(^4\).

- A prospective case series was undertaken examining the clinical outcome following arthroscopic bony correction and labral repair for pincer and mixed femoro-acetabular impingement using the cuff repair technique and compared with traditional repair techniques.
Patients and Methods

Operative Technique:

- Standard anterolateral and modified mid anterior portals
- Labral reflection technique
- Inspection of chondrolabral junction
  - Group 1: Intact
  - Group 2: Separation (partial or complete)
- Pincer deformity correction
- Labral refixation
  - Group 1: Labral Cuff repair
  - Group 2: Simple Loop repair
- CAM deformity correction
Operative Technique

Labral Reflection

Cuff Repair

Articular Cartilage
Labrum
Cuff

Labral Cuff Stitch
Labrum
Femoral Head
Loop Repair versus Cuff Repair

Acetabulum

Simple Loop Stitch

Cuff Stitch

Bunching and elevation

Femoral Head

Arthroscopic photo post-labral repair
Patients and Methods

• All patients had pre-operative assessment using internationally validated outcome measures including the Harris Hip score, SF 36 Health questionnaire, WOMAC osteoarthritic index and UCLA activity scale

• Patients subsequently underwent further postoperative clinical review and outcome assessment at 3 months and 1 year from surgery

• Non-parametric statistical analysis was utilised to assess the significance of improvement in outcome from surgery for each group and to examine any difference between groups 1 and 2

  • Median values and interquartile range
  • Wilcoxon signed rank test (repeated measures)
  • Mann-Whitney U test (independent samples)
Results

- Both groups were similar with respect to male female ratio, average age and range, radiological parameters, Tonnis grade (0 or 1) and level of sporting activity.

- **Group 1:**
  - 75 male (86 cases) and 14 female (14 cases)
  - Male to female ratio (6.1:1)
  - Ave age 30 (17-60) years

- **Group 2:**
  - 73 male (84 cases) and 16 female (16 cases)
  - Male to female ratio (5.3:1)
  - Ave age 35 (17-67) years
## Results

**Group 1: Labral Cuff repair n=100 (median values with IQR)**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre-op</th>
<th>1 year Post Op</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harris Hip Score</td>
<td>70 (73-93)</td>
<td>100 (96-100)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>SF36</td>
<td>73.6 (61-85)</td>
<td>91.8 (82-100)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>WOMAC</td>
<td>18 (13-8)</td>
<td>1 (6-0)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>UCLA</td>
<td>7 (5-10)</td>
<td>10 (7-10)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

**Group 2: Simple Loop repair n=100**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre-op</th>
<th>1 year Post Op</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harris Hip Score</td>
<td>76 (66-86)</td>
<td>96 (86-100)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>SF36</td>
<td>74.5 (62-84)</td>
<td>90.1 (83.8-94.8)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>WOMAC</td>
<td>22.5 (37-8)</td>
<td>3 (10-0)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>UCLA</td>
<td>6 (5-9)</td>
<td>8 (6-10)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
Results

• Satisfaction survey:
  
  Group 1:
  Good to excellent improvement (82%); Fair (12.2%)
  2.6% of patients would not repeat surgery again

  Group 2:
  Good to excellent improvement (80%); Fair (7.7%)
  4.3% of patients would not repeat surgery again

• Repeat hip arthroscopy:
  • Group 1: required in 5 cases (5%)
  • Group 2: required in 7 cases (7%)

• Conversion to THR
  • Group 1: 1 case (1%)
  • Group 2: 2 cases (2%)
Results

- Group 1 demonstrated a better HHS at 3 months post operation when compared with Group 2 (p<0.05)
- No difference in outcome was demonstrated for HHS, SF36 or WOMAC at one year post operation between groups
- Group 1 demonstrated better UCLA activity level at one year post operation when compared with group 2 (p<0.01)
Conclusion

• A chondrolabral preserving technique with labral cuff refixation (Group 1) demonstrates excellent clinical outcome and patient satisfaction at one year from surgery.

• Although median outcome scores for each test were better for group 1, the difference in UCLA activity level between the two groups reached statistical significance (p<0.01).

• Pathology of the chondrolabral junction may increase with age and may reduce the success of outcome from surgery.

• The improved results for group 1 may be as a result of preservation of the chondrolabral junction rather than the method of labral refixation.
References


