Minimum 5-Year Outcomes of Arthroscopic Hip Labral Reconstruction with Nested Matched-Pair Benchmarking Against a Labral Repair Control Group

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Disclosures

I (and/or my co-authors) have something to disclose.

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Labrum

- Joint stability
- Suction seal
- Maintain fluid film
- Load bearing
- Chondroprotective
Segmental Reconstruction
Circumferential Reconstruction
Labral Reconstruction: The Knotless Pull-Through Technique

- Prepare rim
- Place knotless anchors
- Insert tendon graft
- Fixate with preplaced anchors from anterior to posterior
- Amputate excess graft
• Labral reconstruction has demonstrated short-term benefit for the treatment of irreparable labral tears.
• Evidence for mid-term outcomes?

Purpose

I. Report 5-year outcomes in patients who underwent segmental labral reconstruction.

II. Compared 5-year outcomes of patients who underwent primary labral reconstruction with a matched-pair control group that underwent primary labral repair.
Hypothesis

1. Labral reconstruction, in the setting of irreparable labral tears, would show improvement PROs and high patient satisfaction at minimum 5-Y FU.

2. Primary reconstruction would experience similar improvement in PROs at minimum 5-Y FU compared to a matched-pair primary repair.
Methods

• February 2009 and April 2013.

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patients that underwent hip arthroscopy for labral reconstruction in the setting FAI &amp; irreparable labral tear. 2. Minimum 5-year postoperative measures mHHS, NAHS, HOS-SSS, VAS.</td>
<td>1. Tönnis osteoarthritis grade &gt; 1. 2. Previous hip conditions. 3. Worker’s Compensation claims. 4. Frank dysplasia LCEA &lt;18°.</td>
</tr>
</tbody>
</table>

Primary reconstruction Sub-analysis, matching process:

➢ Primary reconstructions matched in a 1:3 ratio to primary repairs: age ±5 years, gender, and BMI ±5.

Modified Harris Hip Score (mHHS), Non-Arthritic Hip Score (NAHS), Hip Outcome Score – Sports Specific Subscale (HOS-SSS), Visual Analogue Scale (VAS).
• 28 patients satisfied the inclusion and exclusion criteria
• 23 (84.1%) had minimum 5-Y FU
Demographics of patients who underwent segmental labral reconstruction with minimum 5-year follow-up.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Reconstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hips included in study</td>
<td>23</td>
</tr>
<tr>
<td>Left</td>
<td>11 (47.8%)</td>
</tr>
<tr>
<td>Right</td>
<td>12 (52.2%)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11 (47.8%)</td>
</tr>
<tr>
<td>Female</td>
<td>12 (52.2%)</td>
</tr>
<tr>
<td>Age at surgery (years, mean, SD, range)</td>
<td>35.2 ± 1.9 (15.5 – 61.9)</td>
</tr>
<tr>
<td>BMI (kg/m², mean, SD, range)</td>
<td>24.8 ± 4 (18.1 – 32.5)</td>
</tr>
<tr>
<td>Follow-up time (months, mean, SD, range)</td>
<td>67.2 ± 7.7 (60 – 89.3)</td>
</tr>
</tbody>
</table>

SD, Standard deviation; BMI, body mass index.
Improvements in patient-reported outcomes for patients with segmental labral reconstruction with minimum 5-year follow-up.
Nested Matched Comparison: Groups Well Matched.

Demographics of primary labral segmental reconstruction and primary labral repair patients with minimum 5-year follow-up.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Primary Reconstruction (n=17)</th>
<th>Primary Repair (n=51)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hips included in study</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left</td>
<td>13 (76.5%)</td>
<td>27 (52.9%)</td>
<td>0.1536</td>
</tr>
<tr>
<td>Right</td>
<td>4 (23.5%)</td>
<td>24 (47.1%)</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9 (52.9%)</td>
<td>27 (52.9%)</td>
<td>&gt; 0.999</td>
</tr>
<tr>
<td>Female</td>
<td>8 (47.1%)</td>
<td>24 (47.1%)</td>
<td></td>
</tr>
<tr>
<td><strong>Age at surgery</strong> (years, mean, SD, range)</td>
<td>36.1 ± 12.9 (15.5 – 61.9)</td>
<td>36 ± 12.8 (15 – 63.9)</td>
<td>0.9605</td>
</tr>
<tr>
<td><strong>BMI (kg/m², mean, SD, range)</strong></td>
<td>25.7 ± 4.1 (19.3 – 32.5)</td>
<td>25.3 ± 4.1 (18.1 – 34.4)</td>
<td>0.7687</td>
</tr>
</tbody>
</table>
Improvements in PROS for primaries labral repairs with minimum 5-Y FU.

- Significant Improvements in both groups.
- Reconstruction achieved PRO improvement comparable to control group.
- Patient Satisfaction favored repair, $P = 0.0402$. 
Discussion

• Reconstruction for irreparable tears results in durable and improved PROs at minimum 5-Y FU.

• **Primary** reconstruction had similar improvement in PROs at minimum 5-Y FU compared to a primary repair pair-matched group.

• Patient satisfaction still favored primary repair.

• In cases of reparable tears – primary repair remains a stronger treatment option.
Primary repair remains our Gold Standard.

Labral tear

Good viable tissue

Repair

Defect, calcified, irreparable tear, nonviable tissue, no “sealing” effect, previous failed repair

Circumferential Reconstruction
Limitations

- Reconstruction technique from >5 years ago.
- Non-randomized study: confounding variables may have influenced our results.
- Single, high-volume surgeon: limits results generalizability.
- Longer follow-up needed.
- Recon vs repair based on senior author’s expertise (bias).
- Sample size.
Conclusions

1. Reconstruction resulted in significant improvement in PROs at minimum 5-YFU.
2. Primary reconstruction reached comparable functional outcomes when compared to a benchmark primary repair, but lower patient satisfaction at latest follow-up.
References


18. Domb BG, Martin TJ, Gui C, Chandrasekaran S, Suarez-Aheco C, Lodhia P. Predictors of Clinical Outcomes After Hip Arthroscopy: A Prospective Analysis of