Primary Hip Arthroscopy with Labral Reconstruction: Is there a difference between autograft and allograft?

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1. American Hip Institute
Disclosures

- American Orthopedic Foundation\(^a\), American Hip Foundation\(^a\), AANA Learning Center Committee\(^a\), Adventist Hinsdale Hospital\(^c\), Hinsdale Hospital Foundation\(^a\), Hinsdale Orthopedic Associates\(^e\), Hinsdale Orthopedic Imaging\(^e\), American Hip Institute\(^e\), Arthroscopy Journal\(^a\), SCD#3\(^e\), North Shore Surgical Suites\(^e\), Munster Specialty Surgery Center\(^e\), Amplitude\(^c\), Arthrex\(^b,c,d\), DJO Global\(^d\), Medacta\(^b,c\), Orthomerica\(^d\), Stryker\(^b,c\)

- a – boardmember; b – research support; c – consulting; d – royalty; e – ownership interest
Labral reconstruction has been described as a solution for the irreparable labrum. Initial techniques employed autografts, while more recent procedures have utilized allografts. No study, to our knowledge, has compared graft types.
Purpose & Hypothesis

• **Purpose:** To compare outcomes between patients who underwent primary labral reconstruction with hamstring allograft versus hamstring autograft.

• **Hypothesis:** No significant differences in outcomes will be found between patients who underwent primary labral reconstruction with allograft versus autograft.
Methods

- Registry data retrospectively reviewed from prospectively collected databases at the involved institutions (September 2010 to March 2015)
- Patients eligible if they underwent hip arthroscopy

- **Inclusion Criteria**
  1. Primary hip arthroscopy with labral reconstruction using either a hamstring allograft or autograft
  2. Tönnis grade ≤1
  3. Minimum 2-year follow-up

- **Exclusion Criteria**
  1. Tönnis ≥ grade 2,
  2. Ipsilateral hip procedures or conditions
  3. Workers’ compensation claims
Two groups were created
- Hamstring allograft group (ALLO) or autograft
- Hamstring autograft group (AUTO)

- Outcomes Collected
  - mHHS
  - NAHS
  - Patient satisfaction
  - VAS
  - HOS-SSS

- Documented
  - Revision surgeries
  - Conversions to total hip arthroplasty
Results

• 29 patients (29 hips) were included (85.3% follow-up)
  ➢ 17 ALLO patients (17 hips)
  ➢ 12 AUTO patients (12 hips)

1689 primary hip arthroscopies
62 primary labral reconstructions
21 primary labral reconstructions excluded: 13 capsular autograft; 1 rectus autograft; 7 others
28 primary hamstring allograft labral reconstructions
13 primary hamstring autograft labral reconstructions
21 primary hamstring allograft labral reconstructions were eligible
13 primary hamstring autograft labral reconstructions were eligible
17 primary hamstring allograft labral reconstructions with confirmed two year follow-up
12 primary hamstring autograft labral reconstructions with confirmed two year follow-up
### Results

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Allograft (n = 17)</th>
<th>Autograft (n = 12)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, n (%)</td>
<td>-</td>
<td>-</td>
<td>0.77</td>
</tr>
<tr>
<td>Male</td>
<td>9 (52.9)</td>
<td>7 (58.3)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>8 (47.1)</td>
<td>5 (41.7)</td>
<td></td>
</tr>
<tr>
<td>Age at surgery, years</td>
<td>37.4 ± 11.4 (18.7 - 56.1)</td>
<td>34.8 ± 12.2 (17.9 - 49.9)</td>
<td>0.56</td>
</tr>
<tr>
<td>BMI</td>
<td>28.4 ± 5.4 (17.3 - 38.2)</td>
<td>26.7 ± 4.8 (19.3 - 38.7)</td>
<td>0.39</td>
</tr>
<tr>
<td>Preoperative Tönnis grade, n (%)</td>
<td>-</td>
<td>-</td>
<td>1.0</td>
</tr>
<tr>
<td>0</td>
<td>13 (76.5)</td>
<td>9 (75)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4 (23.5)</td>
<td>3 (25)</td>
<td></td>
</tr>
<tr>
<td>LCEA, degree</td>
<td>34.6 ± 6.9 (24 - 52)</td>
<td>32.8 ± 9.2 (14 - 50)</td>
<td>0.549</td>
</tr>
<tr>
<td>ACEA, degree</td>
<td>34.5 ± 6.8 (24 - 49)</td>
<td>36.8 ± 7.8 (26 - 50)</td>
<td>0.412</td>
</tr>
<tr>
<td>Alpha angle, degree</td>
<td>66.1 ± 9.5 (52 - 89)</td>
<td>57.9 ± 11.7 (46 - 81)</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Follow-up time, months</td>
<td>29.9 ± 5.5 (24 - 37.5)</td>
<td>50.7 ± 16.6 (25.7 - 72)</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Follow-up percentage</td>
<td>81.0</td>
<td>92.3</td>
<td></td>
</tr>
</tbody>
</table>
Results

Modified Harris Hip Score (mHHS), Non-Arthritic Hip Score (NAHS), Hip Outcome Score – Sports Specific Subscale (HOS-SSS), International Hip Outcome Tool (iHOT-12), and Visual Analogue Scale (VAS)
• The current study found no significant differences in PRO scores between patients who underwent labral reconstruction using an allograft and autograft at 2-year follow-up after primary arthroscopic surgery.

• There is a paucity of literature comparing patient outcomes between allograft and autograft for labral reconstruction in primary or revision hip arthroscopy.

• Combined with the benefit of avoiding donor site morbidity and the comparable clinical outcomes, improved in patient satisfaction may suggest that ALLO is the preferred hamstring graft choice.
Limitations

• Nonrandomized and retrospective in design
• AUTO group had longer follow-up than the ALLO group
• Small sample may limit generalizability
• Preoperative alpha angle was significantly different between groups
• Longer follow-up needed
• ALLO group was performed further out on the "learning curve"
Conclusions

• Primary arthroscopic hip labral reconstruction yielded improvements in PROs and high patient satisfaction
• No differences were found in clinical outcomes.
• May be considered comparable graft choices.
References


