Arthroscopic Capsular Plication in Patients With Labral Tears and Borderline Dysplasia of the Hip

Analysis of Risk Factors for Failure

David R. Maldonado, MD1; Rafael Walker-Santiago1, Brian Mu, BA1; Victor Ortiz-Declet1, Austin W Chen1, Itay Perets, MD2; Ajay C. Lall, MD, MS1; Benjamin G. Domb, MD1

1. American Hip Institute; 2. Hadassah Hebrew University Hospital, Jerusalem, Israel
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
Background

• Hip arthroscopy for the treatment of instability in the setting of borderline dysplasia is controversial. Capsular management in such cases is an important consideration, and plication has been described as a reliable technique, reporting good midterm outcomes when indications are appropriate.
Purpose

- Patients with borderline dysplasia who have a lower lateral center-edge angle (LCEA) and greater age will be at a higher risk of failure after arthroscopic capsular plication.

- **Purpose:** To assess the indications for isolated arthroscopic treatment of patients with borderline dysplasia and to identify clinical and radiographic risk factors for failure with this approach.
Methods

• Registry data retrospectively reviewed from prospectively collected databases at the involved institutions (November 2008 - January 2015)

• Patients eligible if they underwent hip arthroscopy

  o Inclusion Criteria
    1. LCEA ≥ 18 and ≤25
    2. Tönnis grade ≤1
    3. Age between 15 and 40 years,
    4. Primary case with capsular plication
    5. Minimum 2-year follow-up

  o Exclusion Criteria
    1. Tönnis ≥ grade 2,
    2. Ipsilateral hip procedures or conditions
    3. Workers’ compensation claims
Two groups were created

- **Group A, “Success”**: Reached PASS for mHHS

- **Group B, “Failure”**: below PASS at minimum 2-year follow-up, required secondary arthroscopy or conversion to total hip arthroplasty

**Methods**

- **Outcomes Collected**
  - mHHS
  - NAHS
  - HOS-SSS
  - iHOT-12
  - VAS
  - Patient satisfaction

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

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)
### Results

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Success</th>
<th>Failure</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients</td>
<td>90</td>
<td>25</td>
<td>--</td>
</tr>
<tr>
<td>Hips</td>
<td>97</td>
<td>25</td>
<td>--</td>
</tr>
<tr>
<td>Age (years, mean ± SD)</td>
<td>23.5 ± 7.5</td>
<td>28.5 ± 7.8</td>
<td>0.005</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td>0.403</td>
</tr>
<tr>
<td>Female</td>
<td>77 (79.4%)</td>
<td>22 (88.0%)</td>
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</tr>
<tr>
<td>Male</td>
<td>20 (20.6%)</td>
<td>3 (12.0%)</td>
<td></td>
</tr>
<tr>
<td>BMI (kg/m², mean ± SD)</td>
<td>23.8 ± 4.8</td>
<td>25.0 ± 5.3</td>
<td>0.303</td>
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<tr>
<td>Follow-up time (months mean ± SD)</td>
<td>39.2 ± 17.3</td>
<td>42.8 ± 20.4</td>
<td>0.564</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)
Discussion

• At a minimum 2-year follow-up, this study found that increased age was the only significant variable related with failure in patients with borderline dysplasia between 15 and 40 years.

• “Success” group was found to be significantly younger than the “Failure” group (23.5 ± 7.5 years versus 28.5 ± 7.8 years).

• 79.5% of success rate after arthroscopic capsular plication in the setting of borderline dysplasia.
Limitations

• Non-randomized and has no control group.

• Retrospective design.

• Small sample size.
Conclusions

• Stringent criteria for patient selection and meticulous repair or augmentation of the static stabilizers of the hip yielded favorable clinical outcomes in this study cohort with borderline dysplasia. Within this carefully selected group, the analysis revealed that increased age was the main risk factor for failure in the management of borderline hip dysplasia via isolated primary arthroscopic hip surgery with capsular plication.
References


