Risk Factors and Outcomes of Revision Arthroscopic Posterior Capsulolabral Reconstruction in Contact Athletes

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DISCLOSURES

James Bradley, MD
receives royalties from Arthrex
Introduction

Literature endorses arthroscopic posterior capsulolabral repair in athletes

- Contact / collision athletes
- Overhead athletes


Risk Factors for Posterior Instability

- **Owens B, et al AJSM 2013**
  - Most sig risk factor for developing posterior instability is increased glenoid retroversion
  - 1 deg of inc retroversion is 17% risk of subsequent post shoulder instability

- **Mauro C, McClincy M, Bradley JP AJSM 2016**
  - 200 post repairs decreased bony width was predictive of poorer outcomes not bone version

- **Hines A, Tokish J AJSM 2018**
  - Decreased return to full duty if <13.5% bone loss (RR 1.8) (22% of pts) BUT outcome scores & revision rates were NO different
Hypothesis

- Contact athletes who require revision arthroscopic posterior unidirectional capsulolabral repair will have:
  - Poorer outcomes and return to play at 2 yr min f/u

- Risk factors for revision will include:
  - Younger age, decreased glenoid bone width, and fewer anchors
Methods

● Risk factors evaluated:
  ● Age, gender, intra-op severity of injury, level of sport

● MRI:
  ● Bone width
  ● Labral width
  ● Cartilage version
  ● Labral version
  ● Bone version

● Post op outcomes evaluated:
  ● Return to sport
    ● Any level vs. same level
  ● Worthwhileness of original surgery
  ● Revision rate
## Results

<table>
<thead>
<tr>
<th></th>
<th>Revisions</th>
<th>Non-revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>11</td>
<td>111</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>18.7</td>
<td>17.4</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>102</td>
</tr>
<tr>
<td>Female</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td><strong>Mean f/u (yrs)</strong></td>
<td></td>
<td>12.0</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>College</td>
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<td>29</td>
</tr>
<tr>
<td>High school</td>
<td>10</td>
<td>71</td>
</tr>
<tr>
<td>Recreational</td>
<td>0</td>
<td>7</td>
</tr>
</tbody>
</table>
Results: Revision Rate

Revision rate for posterior shoulder instability in contact athletes = 5.9%
Results

Not risk factors for requiring revision surgery:

- Age (p = 0.10)
- Gender (p = 0.326)
- Level of sport (p = 0.381)
- Isolated labral injury (p = 0.349)
- Isolated capsular injury (p = 0.683)
## MRI Results

<table>
<thead>
<tr>
<th></th>
<th>Revision</th>
<th>Non-revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone width*</td>
<td>26.4</td>
<td>29.2</td>
</tr>
<tr>
<td>Labral width</td>
<td>31.9</td>
<td>31.6</td>
</tr>
<tr>
<td>Cartilage version</td>
<td>10.4</td>
<td>11.1</td>
</tr>
<tr>
<td>Labral version</td>
<td>10.6</td>
<td>11.7</td>
</tr>
<tr>
<td>Bone version</td>
<td>9.9</td>
<td>10.4</td>
</tr>
</tbody>
</table>

*Significant difference (p = 0.005)
Return to Play

- Same level: $p < 0.001$
  - Revision = 16.7%
  - Non-revision = 72.1%

- Overall: $p < 0.001$
  - Revision = 50%
  - Non-revision = 93.7%
Conclusions

- Revision rate = 5.9%

- The only significant risk factor for requiring revision surgery in contact athletes was smaller glenoid bone width.

- Return to play was significantly worse in those who required revision surgery.
References