Subpectoral Biceps Tenodesis for Failed Type II SLAP Tears

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Disclosures

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Background

- **Superior Labrum Anterior-Posterior (SLAP) Tear**
  - First described by Andrews et al (AJSM, 1985)
  - Classification by Snyder et al (Arthroscopy, 1990)
Purpose

• To evaluate the outcomes of patients undergoing subpectoral biceps tenodesis as treatment for failed type II SLAP repair
Hypothesis

• Patients would demonstrate an overall improvement in clinical outcomes at a mean two-year follow-up
Materials and Methods

• Prospective data collection
• IRB approved
• Enrollment 01/2008 – 12/2011

Inclusion criteria
• Prior Type II SLAP repair with persistent pain and dissatisfaction greater than one year post-op

Exclusion criteria
• Major concomitant procedures:
  • Revision SLAP repair
  • Rotator cuff repair
  • Arthroplasty
Materials and Methods

- Primary outcome variables
  - Pain (VAS)
  - American Shoulder and Elbow Score (ASES)
  - SF-12

- Secondary outcome variables
  - Simple Shoulder Test (SST)
  - SANE (Single Assessment Numeric Evaluation) Score
Materials and Methods

• Statistical Analysis
  • Paired 2-tailed $t$-test
  • Statistical significance was set at a $P$ value of .05
Surgical Technique

- Labrum assessed for integrity of repair and stability
- Biceps tenotomy at bicipito-labral junction

Images courtesy A Mozzocca and AA Romeo
Surgical Technique

- Incision in-line with anterior axillary fold
- Interval between pectoralis major and short-head biceps
- Identify bicipital groove
- Retrieval of tendon

Images courtesy A Mozzocca and AA Romeo
Surgical Technique

- ID musculotendinous junction (MT Jxn)
- Suture from MT Jxn proximally
- Resect residual tendon
- Fixation with 8x12mm PEEK screw

Images courtesy A Mozzocca and AA Romeo
Results

- 11 patients met inclusion criteria
- 9 completed post-operative surveys (82%)
- Mean 26-month follow-up, Mean age 40yo
- Pre-op to Post-op (Mean)
  - Pain (VAS): 4.1 to 2.5 (p=0.03)
  - ASES: 54.5 to 78.0 (p=0.002)
  - SST: 5.4 to 9.3 (p=0.005)
  - SANE: 42.5 to 70.4 (p=0.001)
  - SF-12 35.5 to 47.9 (p=0.018)
- No failures, perioperative, or postoperative complications
### Table 1

**Patient Demographics**

<table>
<thead>
<tr>
<th>Sex/Age, y</th>
<th>Occupation</th>
<th>Athletic Activity</th>
<th>Workman’s Compensation</th>
<th>Return to Play/Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/34</td>
<td>Computer programmer</td>
<td>Recreational volleyball, softball (nonpitcher)</td>
<td>No</td>
<td>Returned to play and work full-time</td>
</tr>
<tr>
<td>M/34</td>
<td>Electrician</td>
<td>None</td>
<td>No</td>
<td>Returned to work full-time</td>
</tr>
<tr>
<td>M/22</td>
<td>Student</td>
<td>College football (offensive line)</td>
<td>No</td>
<td>Returned to play</td>
</tr>
<tr>
<td>M/54</td>
<td>Police officer</td>
<td>None</td>
<td>Yes</td>
<td>MMI-no lifting more than 10 lb above shoulder, more than 50 lb below shoulder</td>
</tr>
<tr>
<td>M/34</td>
<td>None</td>
<td>None</td>
<td>No</td>
<td>NA</td>
</tr>
<tr>
<td>M/55</td>
<td>Surgeon</td>
<td>Recreational tennis and pilates</td>
<td>No</td>
<td>Returned to play and work full-time</td>
</tr>
<tr>
<td>F/52</td>
<td>Occupational therapist</td>
<td>None</td>
<td>No</td>
<td>Returned to work full-time</td>
</tr>
<tr>
<td>M/36</td>
<td>Construction</td>
<td>None</td>
<td>Yes</td>
<td>MMI-medium duty capacity</td>
</tr>
<tr>
<td>F/41</td>
<td>Accountant</td>
<td>None</td>
<td>Yes</td>
<td>MMI-partial permanent impairment</td>
</tr>
</tbody>
</table>

*Abbreviations: F, female; M, male; MMI, xx; NA, not available.*
## Results

Table 2: Appearance of Prior SLAP Repair Site and Associated Procedures Performed in Addition to Biceps Tenodesis

<table>
<thead>
<tr>
<th>Patient No.</th>
<th>Appearance of SLAP</th>
<th>Associated Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Healed</td>
<td>Labral debridement</td>
</tr>
<tr>
<td>2</td>
<td>Healed</td>
<td>Labral debridement, CA Ligament release, Acromioplasty</td>
</tr>
<tr>
<td>3</td>
<td>Healed, Degenerative Labrum</td>
<td>Labral debridement</td>
</tr>
<tr>
<td>4</td>
<td>Partially healed</td>
<td>Labral debridement</td>
</tr>
<tr>
<td>5</td>
<td>Healed</td>
<td>Labral debridement, loose suture removal</td>
</tr>
<tr>
<td>6</td>
<td>Partially healed</td>
<td>Labral debridement</td>
</tr>
<tr>
<td>7</td>
<td>Healed</td>
<td>Labral debridement, acromioplasty</td>
</tr>
<tr>
<td>8</td>
<td>Healed</td>
<td>Labral debridement, suture removal</td>
</tr>
<tr>
<td>9</td>
<td>Healed</td>
<td>Labral debridement, subacromial bursectomy</td>
</tr>
</tbody>
</table>

Abbreviations: CA, Coracoacromial ligament; SLAP, superior labrum anterior-posterior.
Conclusions

• Subpectoral biceps tenodesis may be an effective treatment option for patients with failed Type II SLAP tears

• Randomized controlled trials comparing debridement, revision repair, and biceps tenodesis are required
Strengths/ Limitations

• Strengths
  • Limited data in the literature on biceps tenodesis for failed SLAP repair
    • Boileau et al (AJSM, 2009) – Improved outcomes with arthroscopic tenodesis for primary SLAP
  • Validated outcome measures
  • Prospective data collection, independent observer

• Limitations
  • Small cohort
  • Older patient population
  • Limited number of throwing athletes


References


