Anatomic Modified Chrisman-Snook Reconstruction

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Disclosure

Anatomic Modified Chrisman-Snook Reconstruction

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Our disclosures are in the Final AOFAS Program Book. We have no potential conflicts with this presentation.
Surgical Options for Chronic Instability

- Anatomic (Brostrom) reconstruction\(^1\)
  - Pitfalls\(^2\)
    - Failure rates of up to 10%
    - Depends on local tissue quality

- Non-anatomic (i.e., Chrisman Snook) reconstruction with autogenous peroneal tendon\(^3,4\)
  - Pitfalls\(^5\)
    - Subtalar stiffness
    - Non anatomic
    - Decreased peroneal strength
    - Wound complications
Modified Anatomic Tendon Allograft Technique

- Talar footprint of the ATFL prepared and bone tunnel created (1)

- Fibular bone tunnel from ATFL insertion - exiting between the PTFL & CFL insertion (2)

- Calcaneal bone tunnel between PTFL & CFL attachment (3)
Surgical Technique

- Semitendinosus Allograft passed through talar tunnel and fixed with interference screw.
- Allograft passed through fibular bone tunnel (without fixation)
- Allograft pulled from lateral to medial into calcaneal tunnel and pulled to optimal tension.
- Graft anchored into calcaneal with interference screw under tension.
- Peroneal tendons were left intact
Methods

- 38 patients underwent an Anatomic Modified CS Reconstruction
  - 2 Surgeon series (JA & SMR) between 2001 - 2011
  - 31 available for follow-up

Outcome Scores
- Foot and Ankle Ability Measure (FAAM)\(^6\)
- Visual Analog Scale (VAS) for Pain
- Satisfaction ratings

<table>
<thead>
<tr>
<th>Total Patients</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age* (yr)</td>
<td>50 (16-81)</td>
</tr>
<tr>
<td>Follow-up* (mo)</td>
<td>31 (6-78)</td>
</tr>
<tr>
<td>Female/Male</td>
<td>16/15</td>
</tr>
<tr>
<td>Previous Instability Surgery</td>
<td>12</td>
</tr>
<tr>
<td>Left/Right Ankle</td>
<td>12/19</td>
</tr>
<tr>
<td>Complications</td>
<td>7</td>
</tr>
</tbody>
</table>

* Mean and range reported
Indication in this study

- Recurrent deformity - previous
  - Brostrom
  - Per Brevis non anatomic reconstruction
  - Poor tissue quality
    - Ehlers Danlos syndrome
    - Severe deformity
      - >30° varus
  - Associated Varus deformity
Results

<table>
<thead>
<tr>
<th></th>
<th>VAS Pain Score*</th>
<th>FAAM*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Surgical</td>
<td>8</td>
<td>41.67</td>
</tr>
<tr>
<td>Post-Surgical</td>
<td>1</td>
<td>95.24</td>
</tr>
<tr>
<td>95% CI for Difference</td>
<td>5.00 - 7.99</td>
<td>40.48 - 55.95</td>
</tr>
<tr>
<td>P-Value</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*Mann-Whitney medians reported

- 91% success rates without recurrence of instability
- 28 out of 31 patients with good-excellent satisfaction
- No patients developed subtalar arthritis

Rothman Institute of Orthopaedics at Thomas Jefferson University
Complications

- 3 poor results (9%)
  - 3 with recurrent instability
  - 1 also developed complex regional pain syndrome (CRPS)

- Minor complications
  - 3 patients with incisional parathesias
An anatomic modification of the Chrisman-Snook reconstruction with tendon allograft is highly successful in treating severe and recurrent chronic lateral ankle ligament instability.

**REFERENCES**