A Novel Technique for the Repair of Anterior Tibial Tendon Ruptures with a Major Defect of Greater than 10 cm.

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My disclosure is in the Final AOFAS Mobile App.
I have no potential conflicts with this presentation.
Introduction

- Anterior tibial tendon rupture uncommon yet debilitating
  - Drop foot
  - Claw toe formation
  - Progressive flattening of the arch

- Failure of conservative measures warrants surgical intervention
Methods

- 2009-2013
  - 3 patients, average age 63
  - Average delayed diagnosis 9 weeks

- All ruptures at tendon insertion
  - Average tendon defect 12 centimeters
Surgical Technique

- Tib ant reconstruction using Gracilis allograft and double bundle technique
  - Proximal allograft connection to proximal stump tendon using pulvertaft weave technique
  - Distal allograft passed through 5 mm bone tunnel on dorsal aspect of medial cuneiform
  - Distal allograft passed through proximal stump creating double bundle repair
Postoperative Care

- Immobilization for 6 weeks
- Aggressive physical therapy
- Pain evaluation by visual analog score (VAS) score
- Functional capacity by pre and post operative foot and ankle ability measure (FAAM) score
## Results

<table>
<thead>
<tr>
<th></th>
<th>Patient 1</th>
<th>Patient 2</th>
<th>Patient 3</th>
<th>Averages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operation Location</strong></td>
<td>Turkey</td>
<td>USA</td>
<td>USA</td>
<td></td>
</tr>
<tr>
<td><strong>Age at time of surgery</strong></td>
<td>81</td>
<td>57</td>
<td>63</td>
<td>50.25</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td><strong>Diagnosis After Injury (Weeks)</strong></td>
<td>3</td>
<td>8</td>
<td>12</td>
<td>5.75</td>
</tr>
<tr>
<td><strong>Surgery Date</strong></td>
<td>2/14/2013</td>
<td>5/1/2010</td>
<td>9/1/2009</td>
<td></td>
</tr>
<tr>
<td><strong>Defect Size</strong></td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>12.00</td>
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<tr>
<td><strong>Pre-Op FAAM Score</strong></td>
<td>28</td>
<td>34</td>
<td>30</td>
<td>30.67</td>
</tr>
<tr>
<td><strong>Post-OP FAAM Score</strong></td>
<td>98</td>
<td>88</td>
<td>84</td>
<td>90.00</td>
</tr>
<tr>
<td><strong>Follow up (Months)</strong></td>
<td>10</td>
<td>24</td>
<td>24</td>
<td>19.33</td>
</tr>
</tbody>
</table>
Results

- Mean follow up 2.5 years
- All patients satisfied with results
  - Indicated they would have surgery again
- 5/5 dorsiflexion muscle strength at last post op visit
- 3/3 returned to pre-injury activity level
Conclusion

- To our knowledge...
  - First study describing technique for repair
    - Delayed tendon repair with a >10cm defect
    - Use of gracillis allograft
- No interference screw fixation
- Decreased cost of procedure
- Viable treatment option
References