Return to Active Duty Lifestyle after Modified Brostrom

CPT Thomas Melton, MD
CPT Joseph Dannenbaum, MD
MAJ Justin Robbins, MD
LTC Paul Ryan, MD

1 Madigan Army Medical Center
Tacoma, WA

2 Tripler Army Medical Center
Honolulu, HI
Disclaimer

No financial disclosures to report

The opinions or assertions contained herein are the private views of the author(s) and are not to be construed as official or as reflecting the views of the Department of Defense
Introduction

- Ankle sprains are common sports related injuries.
- While most respond well to conservative measures, chronic instability occurs in 10-20% of patients following acute injury.
- Conservative therapy is the first line treatment for chronic instability, but surgery may be indicated when non-operative treatment fails.
- Concomitant disease may also contribute to or result from chronic ankle instability, including:
  - Osteochondral lesions of the talus (OLT)
  - Chronic peroneal tendinopathy
  - Varus malalignment
  - Risk of early tibiotalar osteoarthritis
Introduction

- Several surgical options exist for the treatment of chronic ankle instability.
- The Brostrom procedure involves repair of the native anterior talofibular ligament (ATFL) and calcaneofibular ligament (CFL), and the Gould modification includes augmentation with a mobilized portion of the extensor retinaculum.
- This is the most frequently employed procedure for chronic ankle instability, with good to excellent outcomes reported by several authors.
Study Design

- Retrospective review of active duty patients who underwent modified Brostrom at Madigan Army Medical Center from January 2010 through April 2014.
- All patients were treated by a single surgeon with a minimum of one year follow-up.
- Clinical outcomes measured in terms of retention on active duty and lower extremity profile status*.

*Profiles are written for soldiers to provide them with physical activity limitations while allowing them to remain on active duty status.
Surgical Technique

• Curvilinear incision over anterolateral ankle.
• The ATFL, CFL, and capsule are repaired in a “vests over pants” fashion with non-absorbable suture.

• The repair is reinforced with the extensor retinaculum using absorbable suture.
Results

• 127 patients met inclusion criteria (117 males and 10 females). Ages ranged from 19-44 with an average age of 30.4 years.
• 23 of the 127 patients (18.1%) were unable to be retained on active duty for reasons related to their ankle.
• An additional 11 patients were unable to meet retention standards for reasons unrelated to their ankle for a total of 34 patients (26.8%) who did not remain on active duty status.
Results

- 73% (93/127) patients were able to remain on active duty following surgery.
- Of those patients, 40% (38/93) required activity modifications and 60% (55/93) were able to return to full duty.
- Only 2 patients out of 93 who have remained on active duty have changed their military occupational specialty (MOS).
Results

- A total of 63 patients underwent concomitant procedures at the time of surgery.
- 14 of these patients (22%) underwent MEB.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Total Number</th>
<th>Number and % MEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peroneal debridement/repair</td>
<td>24</td>
<td>6/24 (25%)</td>
</tr>
<tr>
<td>Microfracture</td>
<td>19</td>
<td>3/19 (16%)</td>
</tr>
<tr>
<td>Calcaneal osteotomy</td>
<td>7</td>
<td>1/7 (14%)</td>
</tr>
<tr>
<td>Loose body removal</td>
<td>7</td>
<td>2/7 (29%)</td>
</tr>
<tr>
<td>Peroneal debridement/repair + calcaneal osteotomy</td>
<td>3</td>
<td>1/3 (33%)</td>
</tr>
<tr>
<td>Microfracture + calcaneal osteotomy</td>
<td>1</td>
<td>0/1 (0%)</td>
</tr>
<tr>
<td>Microfracture + loose body removal</td>
<td>1</td>
<td>1/1 (100%)</td>
</tr>
<tr>
<td>Microfracture + peroneal debridement/repair</td>
<td>1</td>
<td>0/1 (0%)</td>
</tr>
</tbody>
</table>
Discussion

• Our patient population is an inherently high demand cohort of patients who require a stable ankle to perform various active duty tasks (regular physical fitness tests, ruck marches, combat training, actual combat, etc).

• We found that 18% of our patients were unable to meet active duty retention standards due to their ankle function in our post-operative follow-up period.

• This seems compatible with the published literature which quotes satisfactory results in 80-90% of patients following Brostrom procedure with Gould modification.

• Our sample of 127 patients treated by a single surgeon is larger than many of the other outcome studies on operative management of chronic ankle instability.

• This is the only study to our knowledge to address clinical outcomes in an active duty population.
Conclusion

• Brostrom procedure with Gould modification can provide symptomatic improvement and allow patients to remain on active duty status.

• In our high demand population, approximately 73% of patients were able to return to active duty status after their surgery.
  – 60% of those patients returned to their previous level of duty without any physical restrictions.
References