Introduction

Adult acquired flatfoot deformity (AAFD) is characterized by flattening of the medial longitudinal arch and dysfunction of the posteromedial soft tissues. The original classification was developed by Johnson and Strom and described four stages of deformity based on physical and radiographic findings.

For patients in whom conservative management fails or who are diagnosed with higher grade deformities, surgical flatfoot reconstruction is considered.

For members of the U.S. military for whom flatfoot reconstruction is indicated, the rates of successful return to duty after the procedure are currently unknown. The purpose of this study was to determine the return to duty rates for service members who have undergone surgical reconstruction for adult acquired flatfoot deformity.

Methods

To answer this question, we performed a 15-year retrospective chart review for all patients who underwent flatfoot reconstruction at Tripler Army Medical Center between 2001 and 2015.

Results

- 50 patients met inclusion criteria.
- 20 of the 50 (40%) of surgically treated patients faced a Medical Evaluation Board (MEB) or separation from the military for medical reasons.
- 30 patients or 60% were able to return to duty (RTD).
- Only 2 patients were able to return to full duty without restrictions.
- We found no difference when the MEB and RTD cohorts were compared in terms of the soft tissue procedures performed, isolated forefoot or hindfoot fusions, or in terms of age or rank.
- Regarding hindfoot alignment surgery, we found that patients who underwent a lateral column lengthening (LCL) were much more likely to undergo an MEB than those with a medializing calcaneal osteotomy (MCO) with an odds ratio of 0.77:1 versus 0.23:1.

<table>
<thead>
<tr>
<th></th>
<th>MEB (%)</th>
<th>MCO (%)</th>
<th>LCL (%)</th>
<th>Gastroc</th>
<th>FDL</th>
<th>Cotton</th>
<th>Fusion</th>
<th>Age</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 (40%)</td>
<td>35%</td>
<td>35%</td>
<td>30%</td>
<td>65%</td>
<td>30%</td>
<td>5%</td>
<td>30.0</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>RTD (30%)</td>
<td>50%</td>
<td>40%</td>
<td>60%</td>
<td>50%</td>
<td>60%</td>
<td>25%</td>
<td>7%</td>
<td>33.2</td>
<td>5%</td>
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Discussion

- As we can see from Bolt’s paper, lateral column lengthening demonstrated superior radiographic realignment of the arch.
- However, the medializing calcaneal osteotomy group had lower incidence of degenerative changes, and lower rates of nonunion and stiffness.
- These clinical results are consistent with the occupational results found in our study since we noted that there was a higher association with retention on active duty in patients who had an medializing calcaneal osteotomy rather than a lateral column lengthening.

Conclusions

- The operative management of adult acquired flatfoot deformity results in 60% chance of active duty retention.
- Patients treated with a medializing calcaneal osteotomy had a higher rate of retention on active duty when compared to patients treated with a lateral column lengthening.

References