The Ball and Socket Ankle

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Disclosures

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Our disclosures are in the Final AOFAS Program Book.
We have no potential conflicts with this presentation.
Introduction

- The ball and socket ankle is a rare variant defined by a hemispheric tibiotalar articulation.

- Associated with congenital anomalies
  - tarsal coalition, short limb
  - fibular hypoplasia/deletion, absent, hemimelia
  - Syndactyly, flat foot
  - club foot, spinal deformities

- Presents with instability, pain, gait dysfunction

- No published treatment series for this condition.
Materials and Methods

- Retrospective review of 7 patients
  - avg. age 48.4 yrs  Avg FU 50.6 months

- Chart review included:
  - associated diagnoses
  - procedures
  - follow-up intervals
  - complications
  - Scoring: preoperative and postoperative
    - VAS pain scores,
    - AOFAS hindfoot scores, and
    - FAAM scores. (only available post op)
## Results

<table>
<thead>
<tr>
<th></th>
<th>Preop</th>
<th>Postop</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VAS</strong></td>
<td>7.7</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>AOFAS – AH</strong></td>
<td>39.6</td>
<td>82.3</td>
</tr>
<tr>
<td><strong>FAAM – ADL</strong></td>
<td>n/a</td>
<td>85.6</td>
</tr>
<tr>
<td><strong>FAAM - Sports</strong></td>
<td>n/a</td>
<td>67.7</td>
</tr>
</tbody>
</table>

- **Underlying condition**
  - Fibular hemimelia: 4
  - Tarsal coalition: 3

- **Associated findings**
  - Hindfoot valgus, pes planus, contracted gastrocsoleus, instability, subtalar arthritis, subfibular impingement, dislocated peroneal tendons, deficient spring ligament

- **Other noted conditions**
  - Ulnar agenesis, leg length discrepancy, fibular hemimelia, lateral ray deficiency
21 yr male – Fibular Hemimelia

Multiple prior fib lengthenings

- Complaint
  - Pain
  - Instability
  - Subfib. Impingement
  - Dx peroneal tendons

- Treatment
  - Spramalleolar osteotomy
  - Medial. calc. osteotomy
  - TN fusion
  - FDL transfer
  - Strayer
  - Peroneal groove deepen.
Procedures

- Supramalleolar medial closing osteotomy 6
- Calcaneal osteotomy 4
- Subtalar fusion 2
- Triple 1
- Deltoid reconstruction 3
- Peroneal groove deepening (for dislocation) 2
- FDL transfer 3
- Strayer 7
- Cotton medial cuneiform osteotomy 2
Ball and Socket ankle is a rare congenital anomaly.

Patients present with pain, gait dysfunction, valgus deformity and instability of the ankle.

Selection of surgical procedure should be tailored based on the deformity algorithm to correct patient specific conditions.
References