Foot pain, status post talus ORIF

Vincent Paul, MD
Fellow, Musculoskeletal Radiology
History

• MVA, October 2015.
  – “Highway speeds with feet on dashboard”
• ORIF of talar neck fracture at an outside facility
Hawkins Sign

- Subchondral radiolucent band in the dome of the talus
- Typically seen 6-8 wks after a vertical fx of the talar neck
- Related to hyperemia of bone
- -Correlates with an intact blood supply
- -Development of AVN is doubtful
- Lucency typically progresses medial to lateral side of dome
- Its absence does not indicate inevitable AVN
Prognostic Reliability of the Hawkins Sign in Fractures of the Talus

Mohammad Tezval, MD, Clemens Dumont, MD, and Prof. Klaus Michael Stürmer

<table>
<thead>
<tr>
<th>Avascular Talar Necrosis</th>
<th>Positive</th>
<th>Partial Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>With (n = 5)</td>
<td>0</td>
<td>0</td>
<td>5 (100%)</td>
</tr>
<tr>
<td>Without (n = 26)</td>
<td>11 (42.3%)</td>
<td>4 (15.4%)</td>
<td>11 (42.3%)</td>
</tr>
</tbody>
</table>
Arterial supply to the talus

- **Body**
  - Deltoid branches
    - Medial neck and body
  - Artery of tarsal canal
    - Most of body
  - Dorsalis pedis and peroneal branches
    - Neck and lateral third

http://www.slideshare.net/harsimransidhu16/talar-fracture-47249300
Hawkins classification

- Hawkins classification of neck fractures type I-IV
- AVN risk increase with ↑ grade
  - Typically not diagnosed by radiographs until 6-8 months following injury

<table>
<thead>
<tr>
<th>Type I:</th>
<th>Type II:</th>
<th>Type III:</th>
<th>Type IV:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nondisplaced</td>
<td>Displaced</td>
<td>Displaced</td>
<td>Displaced</td>
</tr>
<tr>
<td>AVN Risk: 15%</td>
<td>Disruption of subtalar joint</td>
<td>Disruption of subtalar and ankle</td>
<td>Disruption of subtalar, ankle,</td>
</tr>
<tr>
<td></td>
<td>AVN Risk: 50%</td>
<td>joints</td>
<td>and talonavicular joints</td>
</tr>
<tr>
<td></td>
<td>AVN Risk: 85%</td>
<td>AVN Risk: 85%</td>
<td>AVN Risk: 100%</td>
</tr>
</tbody>
</table>

Hawkins classification of neck fractures type I-IV: AVN risk increase with ↑ grade. Typically not diagnosed by radiographs until 6-8 months following injury.