**7:15 – 7:20 am**
The Evans Osteotomy
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**Background:**
- First described by Dillwyn Evans (1975) for pediatric flatfoot
- Lengthening osteotomy of the calcaneus through the anterior process
- Later extended to use in the adult population

**Surgical Procedure:**
- A vertical osteotomy of the calcaneus approximately 1.5 cm proximal to the calcaneocuboid joint
- Although not specified by Evans, often described as between the anterior and middle faces
- Filled with graft

**Outcomes:**
- Excellent medium-term outcomes for adolescent flat foot (reported at 7 years by Phillips on Evans’ original patients)
- Concern raised for asymptomatic calcaneocuboid arthritis at follow-up
- Increased pressures in the c-c joint noted biomechanically (Cooper et al)
- Radiographic c-c joint subluxation may occur
- More limited clinical data on adults

**Alternatives for Lateral Column Lengthening:**
- **Calcaneocuboid distraction arthrodesis**
  - Proposed as a solution for potential late c-c joint arthritis
  - High reported rate of nonunion
  - Greater potential for lateral column overload than the Evans

  **“Modified” Evans**
  - Osteotomy through the interval between posterior and middle facets
  - This nonarticular interval is more reliably present; the anterior and middle facets are confluent in nearly half of specimens
  - More proximal dissection places the distraction underneath the peroneals
  - Clinically significant arthritis and pain around the anterior/middle facet osteotomy site has not been reported as a problem
**Pearls:**

- The osteotomy distracts in a quadrangular fashion; it opens more dorsally than plantarly as well as more laterally than medially. Grafts may be cut from iliac crest or the calcar portion of a femoral head allograft.
- Avoiding excessive distraction is key to avoiding complications including c-c joint overload/subluxation and excessive lateral forefoot pressures. Smaller grafts than originally described (typically 6-10 mm) in conjunction with additional medial column procedures allow correction with a seemingly lower risk of complication.
- Hardware is rarely necessary with appropriate carpentry.
- Biologic adjuncts (e.g. bone marrow concentrate) may improve allograft incorporation if chosen.

**References:**

Toolan BC, Sangeorzan BJ, Hansen ST. Complex reconstruction for the treatment of dorsolateral peritalar subluxation of the foot. Early results after distraction arthrodesis of the calcaneocuboid joint in conjunction with stabilization of, and transfer of the flexor digitorum longus tendon to, the midfoot to treat acquired pes planovalgus in adults. JBJS-A 81:1545-1560, 1999.
Tien TR, Parks BG, Guyton GP. Plantar pressures in the forefoot after lateral column lengthening: a cadaver study comparing the Evans osteotomy and calcaneocuboid fusion. FAI 26:520-525, 2005