The Evans Osteotomy and Risk to Subtalar Joint Articular Facets and Sustentaculum Tali: A Cadaver Study

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Disclosure

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Our disclosures are in the Final AOFAS Program Book.
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Background

- Dillwyn Evans (1)
  - Parallel to CC
  - 1.5 cm to CC
- Correction of pes planovalgus
Study Goal

- Determine violation of the talocalcaneal facets and sustentaculum tali (ST) via the Evans osteotomy in cadavers
Methods

- SanDiego Cadaver Anatomy Research Symposium (SCARS)
- 10 fresh frozen adult BK cadaver limbs
- Demographics collected
  - race, side
Methods

- Incised the floor of the sinus tarsi
- EDB was reflected and the peroneal tendons were mobilized plantarly
- The CC joint identified
- Sagittal saw osteotomy through-and-through 1.3 cm from CC and perpendicular to ground²
- Calcaneus was then disarticulated, dorsal soft tissue removed
Methods (cont.)

- Distinct Ant/Mid facets versus those with conjoined facets
- ST violation
- Anterior, middle, or posterior facet violation was recorded
Methods

- Measurements were taken from the superior aspect of the calcaneus.
- Distance Anterior calcaneus to the osteotomy at the sagittal midline of the calcaneal body (DTO).
- Width of anterior and middle facet separation at the narrowest margin (WFS).
- Distance osteotomy to anterior margin of posterior facet at the sagittal midline of the calcaneus (DOP).
Results

• 10/10 Caucasians
• 6 left specimen
  – 4 right
• 4/10 = no facet or ST violations
• 2 = conjoined anterior and middle facet
  – The continuous joint was violated by the osteotomy
• 4 = ST violated
  – 2/4 cuts traversed posterior to the middle facet and exited on the arm of the ST and two violated the middle facet in addition to the ST
Results

- DTO = 13.2 mm
- WFS = 1.74 mm
- DOP = 7.88 mm
Osteotomy split Ant and Mid facets
Osteotomy violates the ST, crossing posterior to the middle facet.
Osteotomy violates the middle facet and the ST
Conclusion

- Anterior/Middle Facets and ST at risk during Evans osteotomy at 1.3 cm from CC and remaining parallel to CC

References

THANK YOU