Flatfoot Surgery in Teenage Athletes

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I have no financial disclosures and will not discuss off label or investigative use of products or devices

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Elective Surgery on a 15 y/o sprinter?
Sprinter but had to quit track due to foot pain
Barely made it through football as a running back
Can not be on his feet for more than 2 hours
Pain is a 10 both during and after sports
Can surgery fix this?
Rearfoot Procedure Selection
Corrected View Helps with Procedure Selection
R/O Subtle Coalition
(LLA view for standard flatfoot workup)
Medial Column Procedure Selection
Flatfoot with Hallux Valgus
Gastroc Procedure Selection for Young Athletes
Location of Scar on Calf
Gastroc recession or gastroc and soleus lengthening?
Surgical Plan

1. Intramuscular gastroc lengthening
2. Double heel osteotomy (Evans & Kouts)
3. Cotton osteotomy
Rearfoot Incisions

- Draw calcaneus and fibula
- Span Sural nerve
- Confirm location of posterior osteotomy before skin incision
Posterior Incision Down to Bone
Minimal Periosteal Elevation

- Provided that the incision is properly placed
Crego Elevator for Dorsal, Medial and Plantar Periosteal Elevation
Location of Kouts osteotomy?
“Posterior” Calcaneal Osteotomy (vs. Dwyer or Keck and Kelly)
Posterior Osteotomy Pearls

- Avoid medial soft tissues
- Mark 3 cm depth on saw blade
- Perpendicular to the lateral wall of the calcaneus
- Follow guide pin
Osteotomy Guide Pin
90 Degrees to Lateral Wall
Osteotomy Guide Technique
Medial Displacement

- 1 cm of medial displacement
- Do not elevate or plantarly displace the posterior fragment
Mark Osteotomy to Avoid Elevation
Stretch Medial Soft Tissues
Medial Displacement Technique
Medial Displacement with Joystick
Does every patient need 1 cm?

- Soft tissue limitations
- Less with Evans?
- Risk of a varus heel?
Fixation Pearls

- Pin vs. screw fixation
- Orientation of fixation (aim medial to lateral, high and low)
- Stop at the far cortex
- Fixation of double osteotomy
Start Midline & Aim Lateral
Fixation Plan Posterior Osteotomy Only
Fixation Plan for Combined Kouts / Evans
Poke Thru, Back up, Insert Graft, Advance Pins
Advance Pins to CC Joint
Screw Fixation
(note elevation)
Location & Angle of Cotton Osteotomy (insert guide pin)
Start with Saw & Finish with Osteotome
Allograft Wedge

- 7 mm x 22 mm wedge
- Cotton and Evans wedges from one allograft
Fixation of Cotton Osteotomy
(2 Threaded 0.062” k-wires)
Pediatric Cotton Osteotomy
3 Year Postop Exam
Preop and 3 Years Postop
Preop & 3 Year Postop Lateral
Can he sprint and play football?
Three Years Postop: Captain of High School Football Team
Procedure Selection in Pre-teen Athlete (AP xray)
Preop and Postop
Preop and Postop
Caution with Isolated Kidner
Deformity Correction Along with CN Bar Resection
Questions / Comments?

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