Keck and Kelly Heel Osteotomy for Haglunds Deformity: When and how?

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Des Moines University
Foot & Ankle Surgical Symposium
April 25-26, 2014
Anatomic Effect of Keck & Kelly Osteotomy

1. Tilts heel prominence forward away from the shoe
2. Elevates insertion of Achilles (reduces equinus stress)
3. Straight orientation of Achilles fibers at the calcaneal insertion
Indications for Keck & Kelly Osteotomy

1. Haglund’s Deformity
2. Combined Haglunds & Retrocalcaneal exostosis?
Indications for Keck & Kelly Osteotomy

1. Haglund’s Deformity
2. Combined Haglunds & Retrocalcaneal exostosis?
Local vs. Global Haglunds (Haglunds resection vs. Keck osteotomy)
Localized vs. Global Posterior Heel Bump
Preop vs. Postop Layover Comparison
Heel Views for Haglunds
Lateral Oblique Heel View for Haglunds
Ideal Keck and Kelly osteotomy technique?

• “Angle of osteotomy is important, if the angle is incorrect, the amount of shortening will be insufficient”

*Perlman, J Foot Surg 1992*
1. Invert Contrast and Print Lateral View
2. Determine Posterior Superior Exit Point (anterior to the Achilles)
3. Determine Plantar Apex (posterior to WB area of tuberosity)
4. Draw Posterior Osteotomy
5. Draw Anterior Osteotomy (vertical to the WB surface)
6. Photocopy Template and Cut out Posterior Fragment
7. Tape Posterior Fragment in Place to Demonstrate Impact of Wedge
8. Reproduce Osteotomy in the OR
Draw Outline of Calcaneus
(flatfoot vs. cavus foot)
Identify Sural Nerve
Mark Lateral Edge of Achilles
Mark Incision
Layover Technique Can be Misleading due to Thick Soft Tissue
Identify Plantar Apex of Osteotomy
Identify Dorsal Exit Point of Anterior Osteotomy
Proposed Osteotomy
Full Depth Incision (Like calc fracture)
Blunt Dissection By Achilles
Isolated Periosteal Elevation
(at wedge, no need to touch Achilles)
Expose Dorsal Cortex of Calcaneus
Confirm Plantar Apex and Exit Point of Posterior Osteotomy
Free Dorsal Periosteum
Free Medial Periosteum
Insert Osteotomy Guide Pin
2nd Parallel Osteotomy Guide Pin
Image Osteotomy Guide for Posterior Cut
Align Saw with Osteotomy Guide and Guide Pin
Switch to Long Saw (mark at 3cm)
Use Existing Cut to Maintain Angle
Carefully Finish Plantar Medial Apex
Posterior Osteotomy Completed
Location of Anterior Cut for 7mm Wedge
Osteotomies Completed
Remove Wedge in One Piece (V8351)
Size of Wedge
(7-9 mm)
Finish Distal Apex
Dorsiflex Foot to Compress
(note intact plantar hinge)
Reduce Osteotomy  (9187, B3)
Reduction of Osteotomy (v8352)
Insert Guide Pins
Countersink Issues Thru the Achilles
6 Weeks Postop
(return to WBAT)
Preop vs. Postop Comparison

- Global remodeling without touching the Achilles
Alternative Posterior Pin Fixation
Questions / Comments?