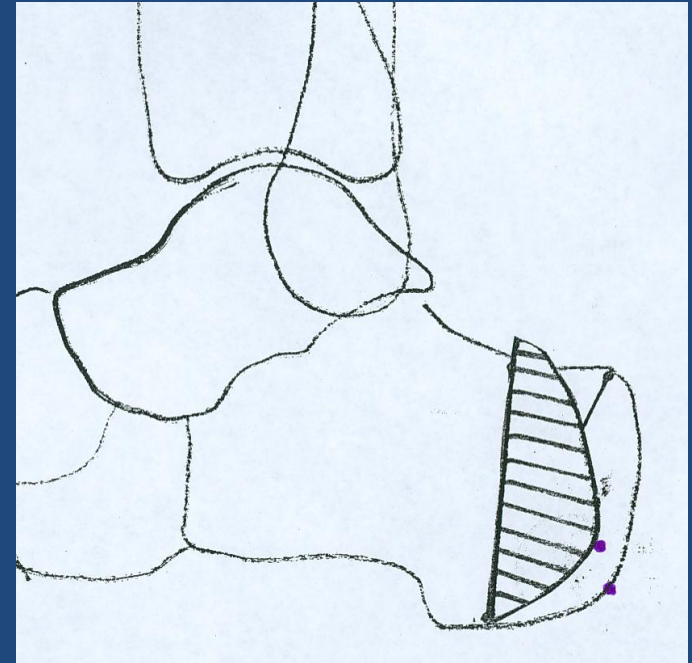


Keck and Kelly Heel Osteotomy for Haglunds Deformity: When and how?

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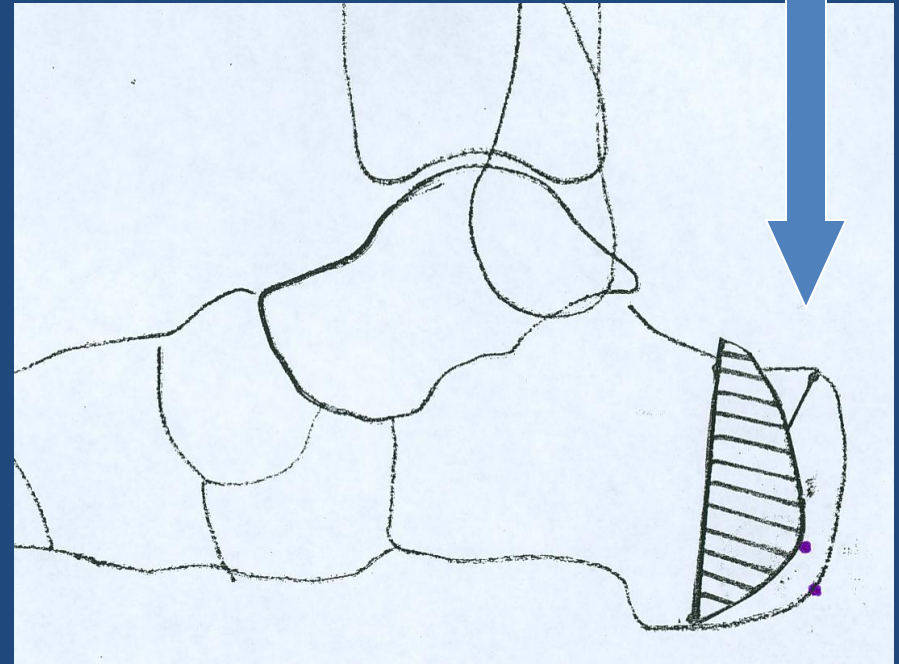
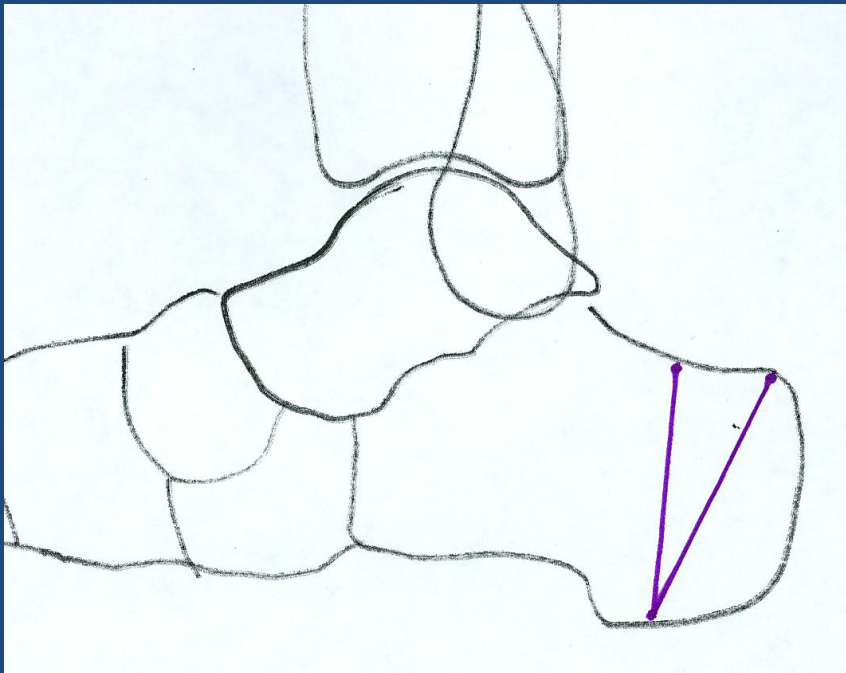
April 25-26, 2014



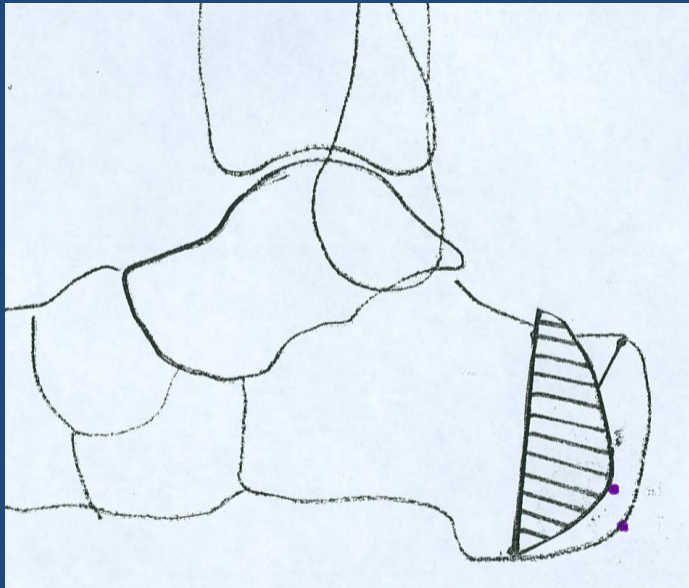
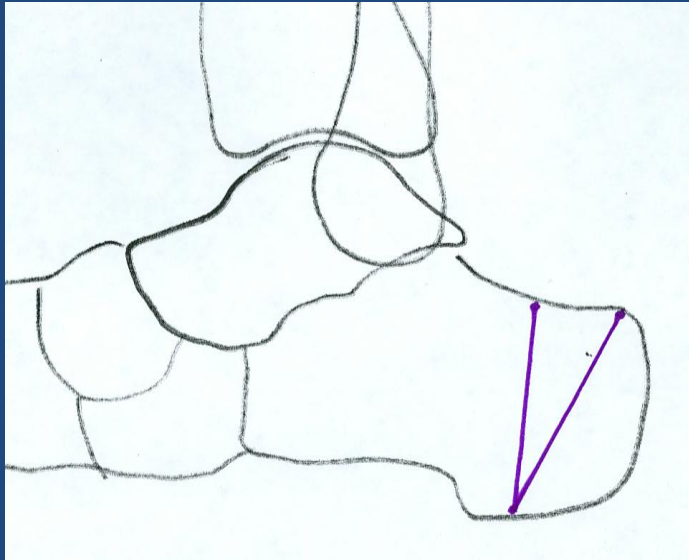
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Anatomic Effect of Keck & Kelly Osteotomy

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

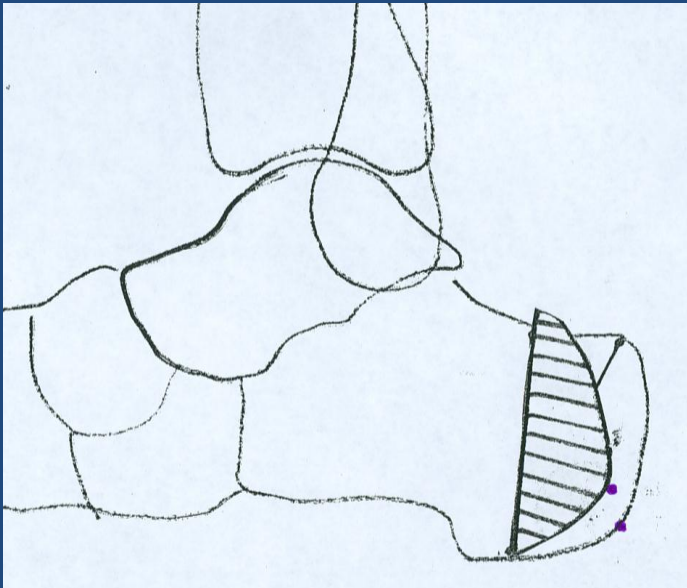
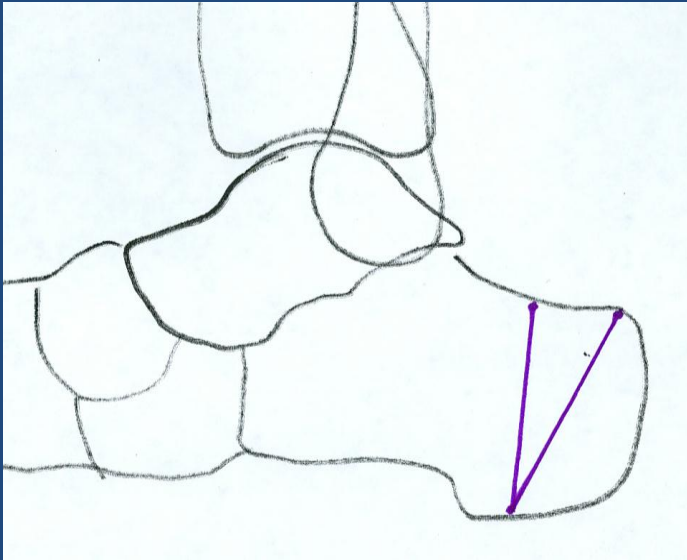


1. Haglund's Deformity
2. Combined Haglunds & Retrocalcaneal exostosis?



Indications for Keck & Kelly Osteotomy

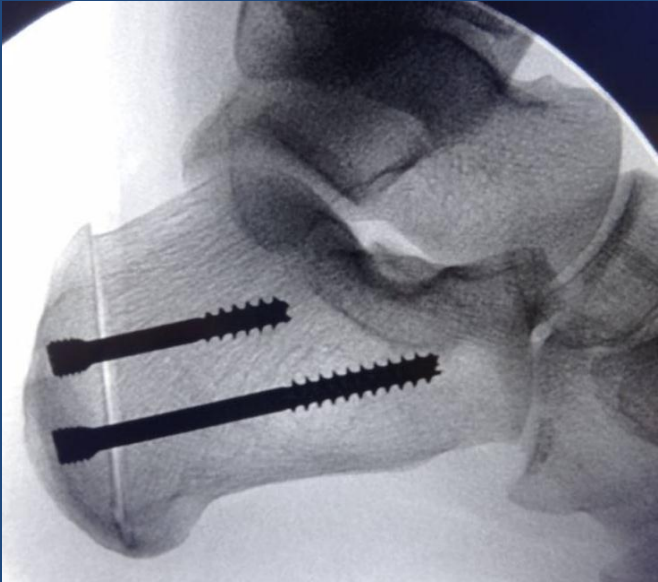
1. Haglund's Deformity
- ~~2. Combined Haglunds & Retrocalcaneal exostosis?~~



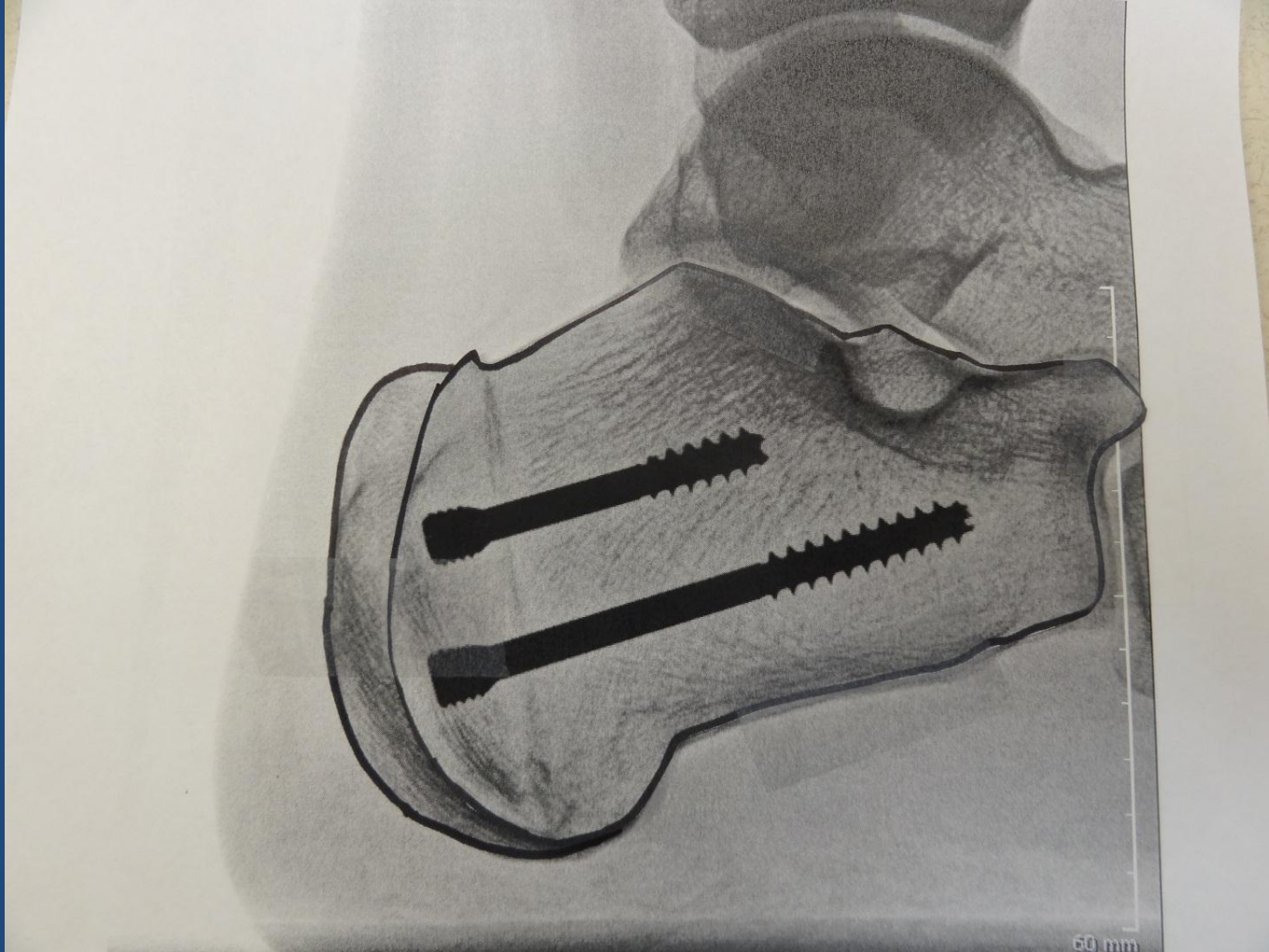
Local vs. Global Haglunds (Haglunds resection vs. Keck osteotomy)



Localized vs. Global Posterior Heel Bump



Preop vs. Postop Layover Comparison



Heel Views for Haglunds



Lateral Oblique Heel View for Haglunds

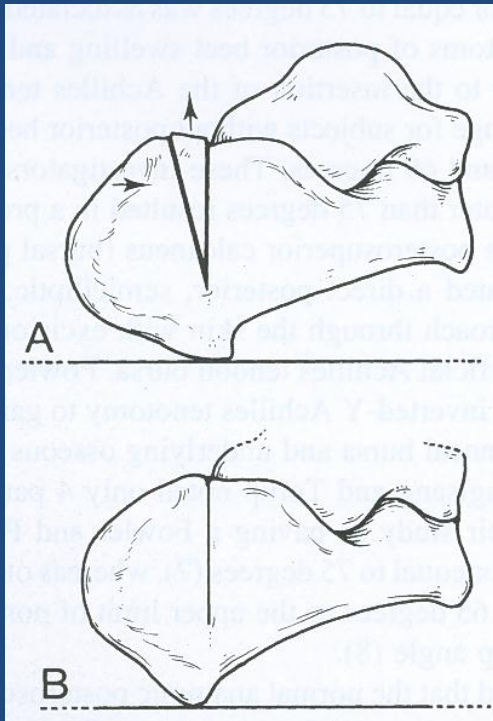


Ideal Keck and Kelly osteotomy technique?

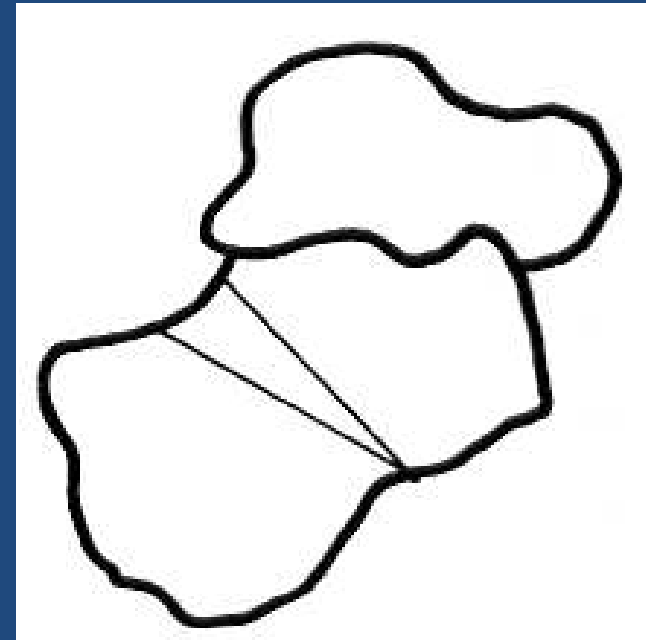
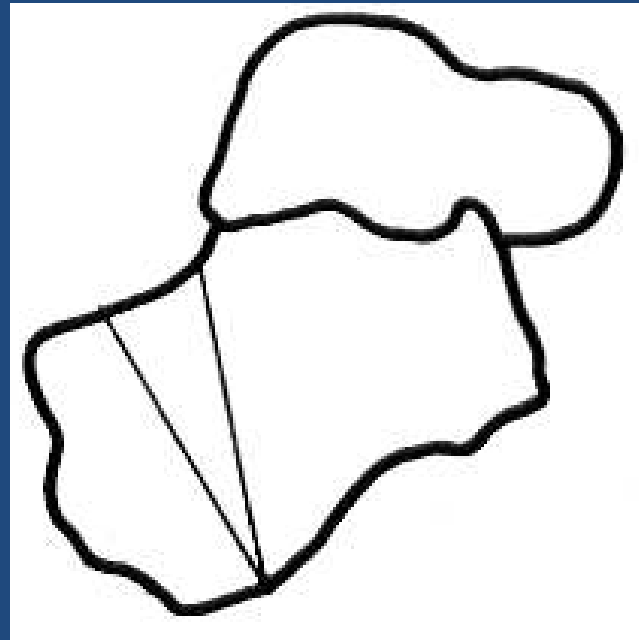
- “Angle of osteotomy is important, if the angle is incorrect, the amount of shortening will be insufficient”

Perlman, J Foot Surg 1992

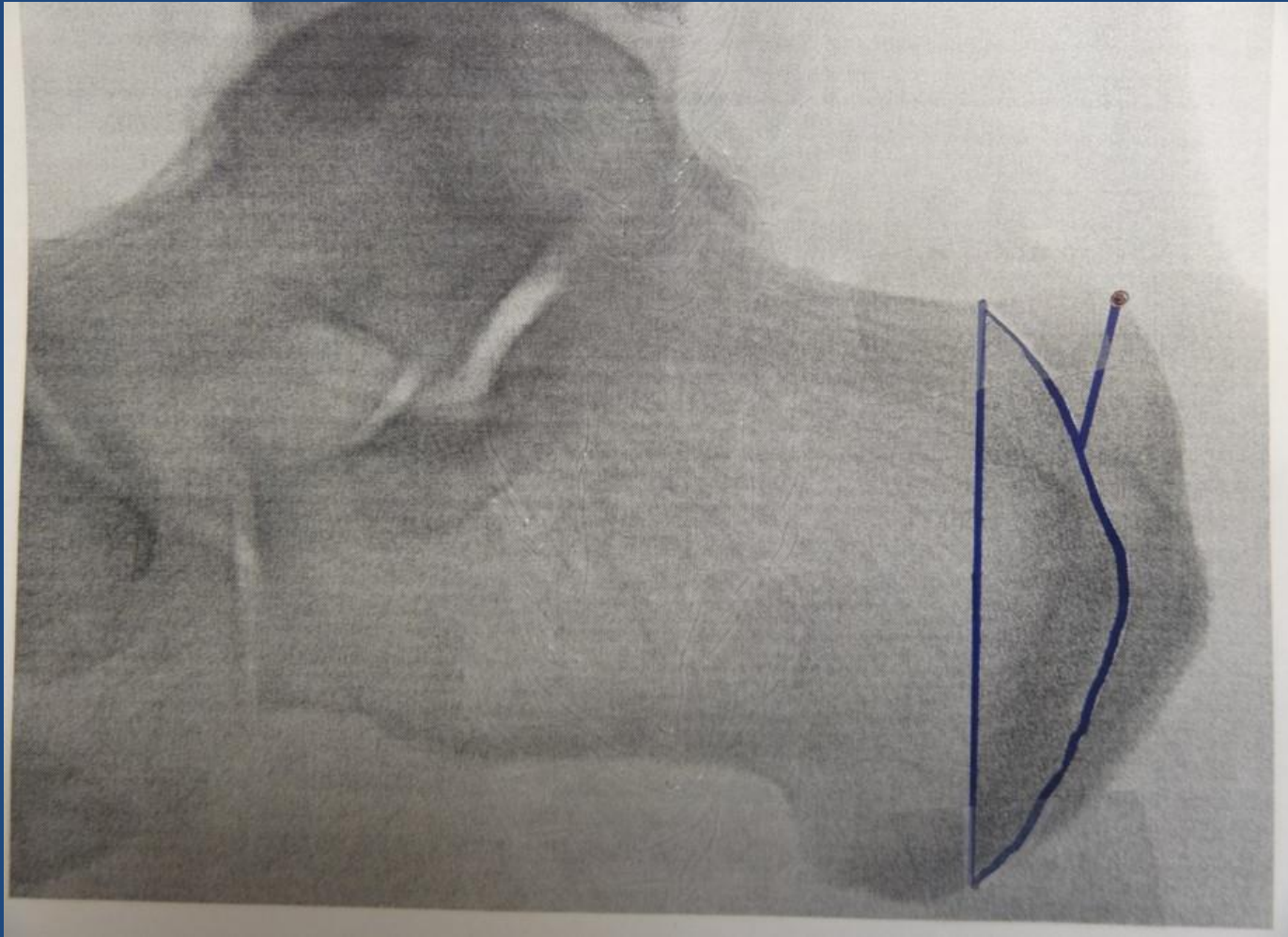
McGlamry



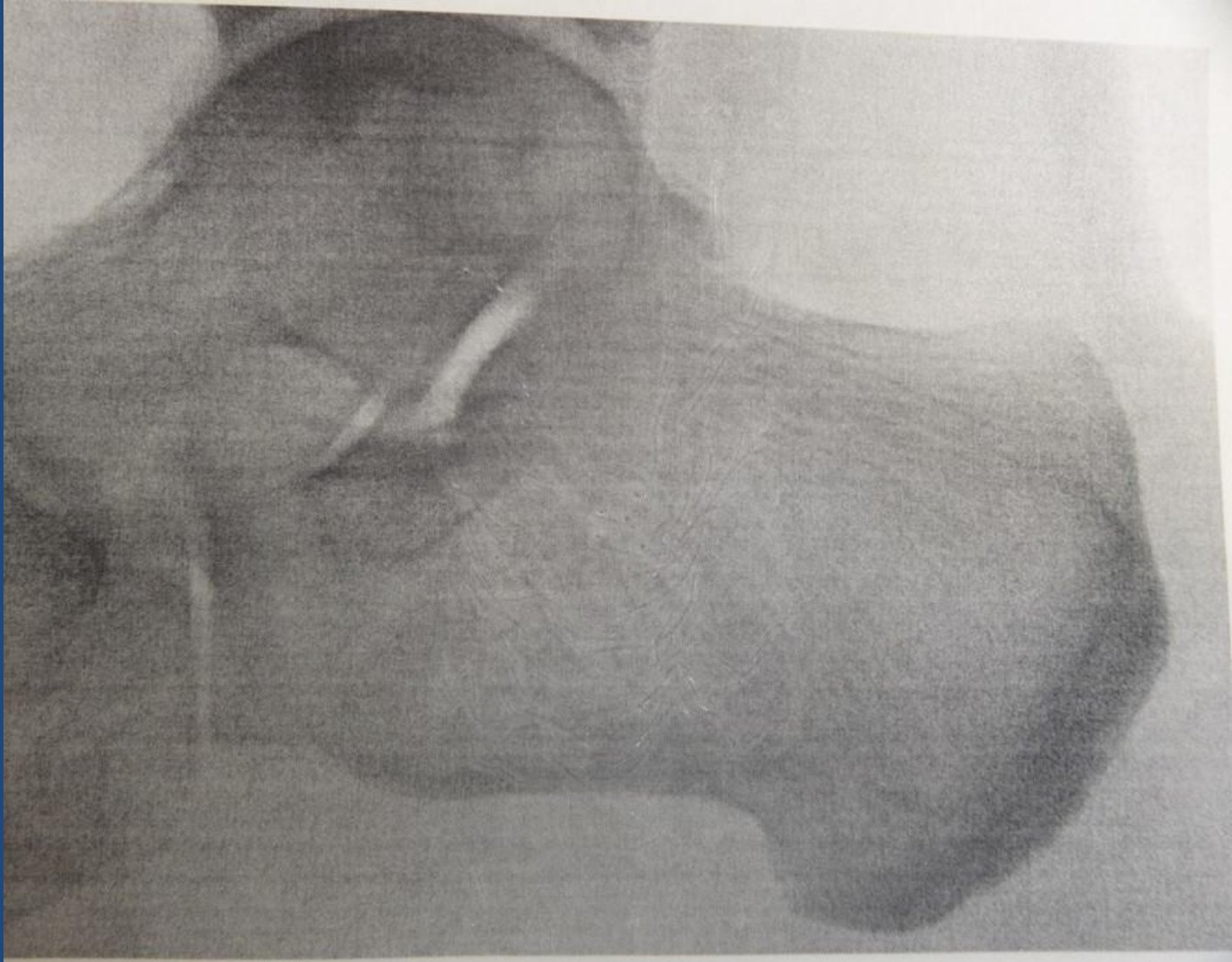
Perlman



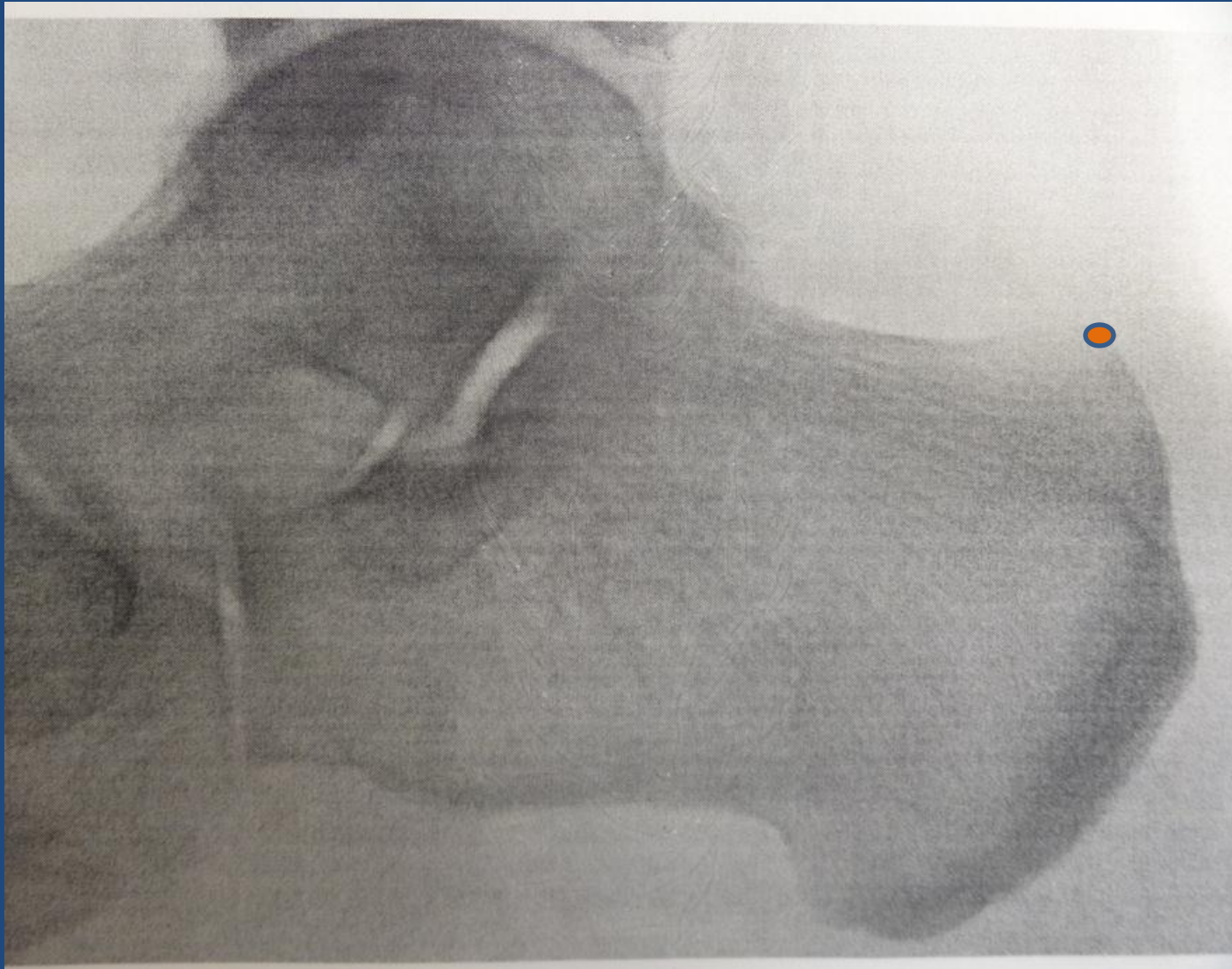
Keck and Kelly Template Technique



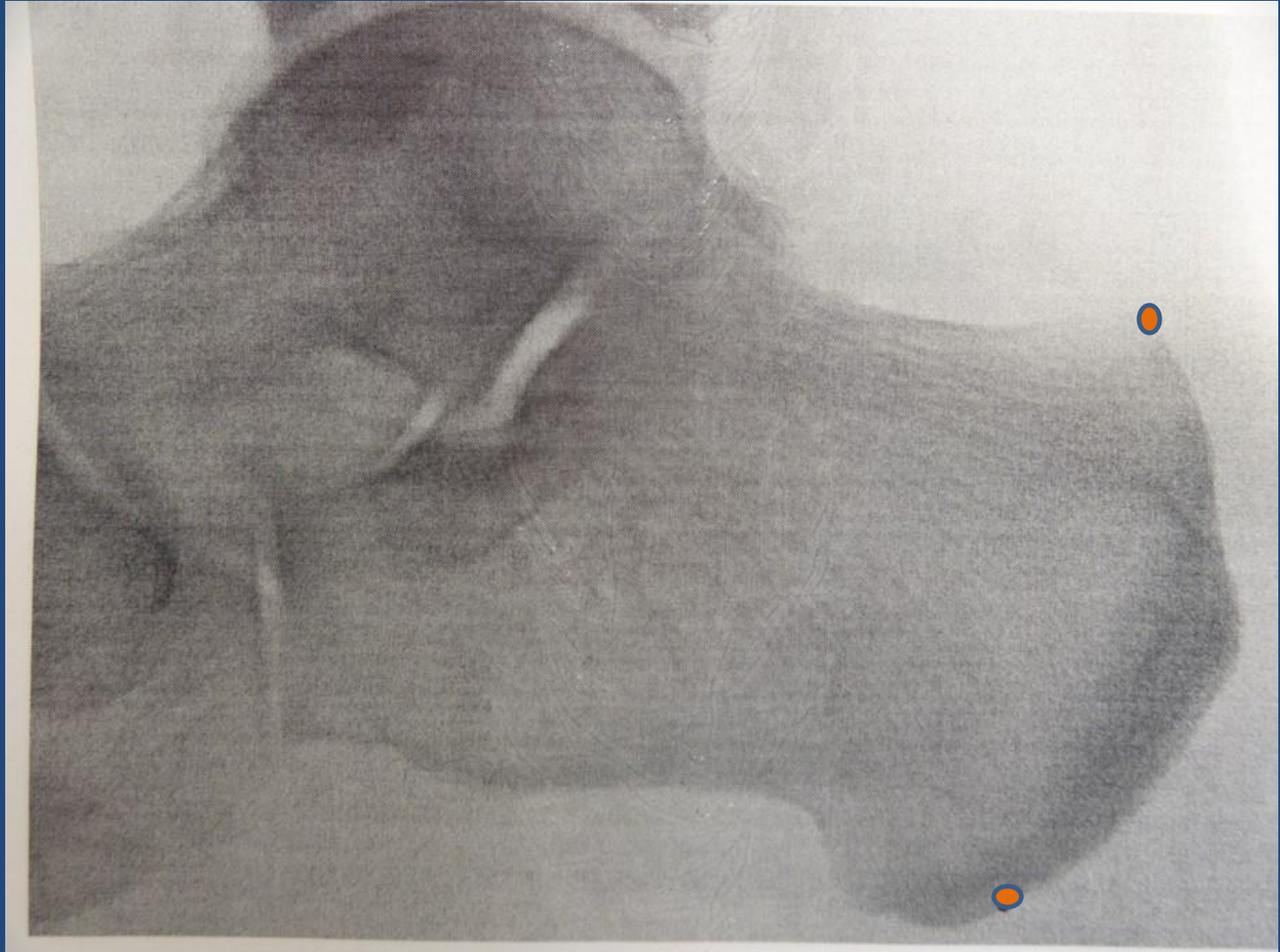
1. Invert Contrast and Print Lateral View



2. Determine Posterior Superior Exit Point (anterior to the Achilles)



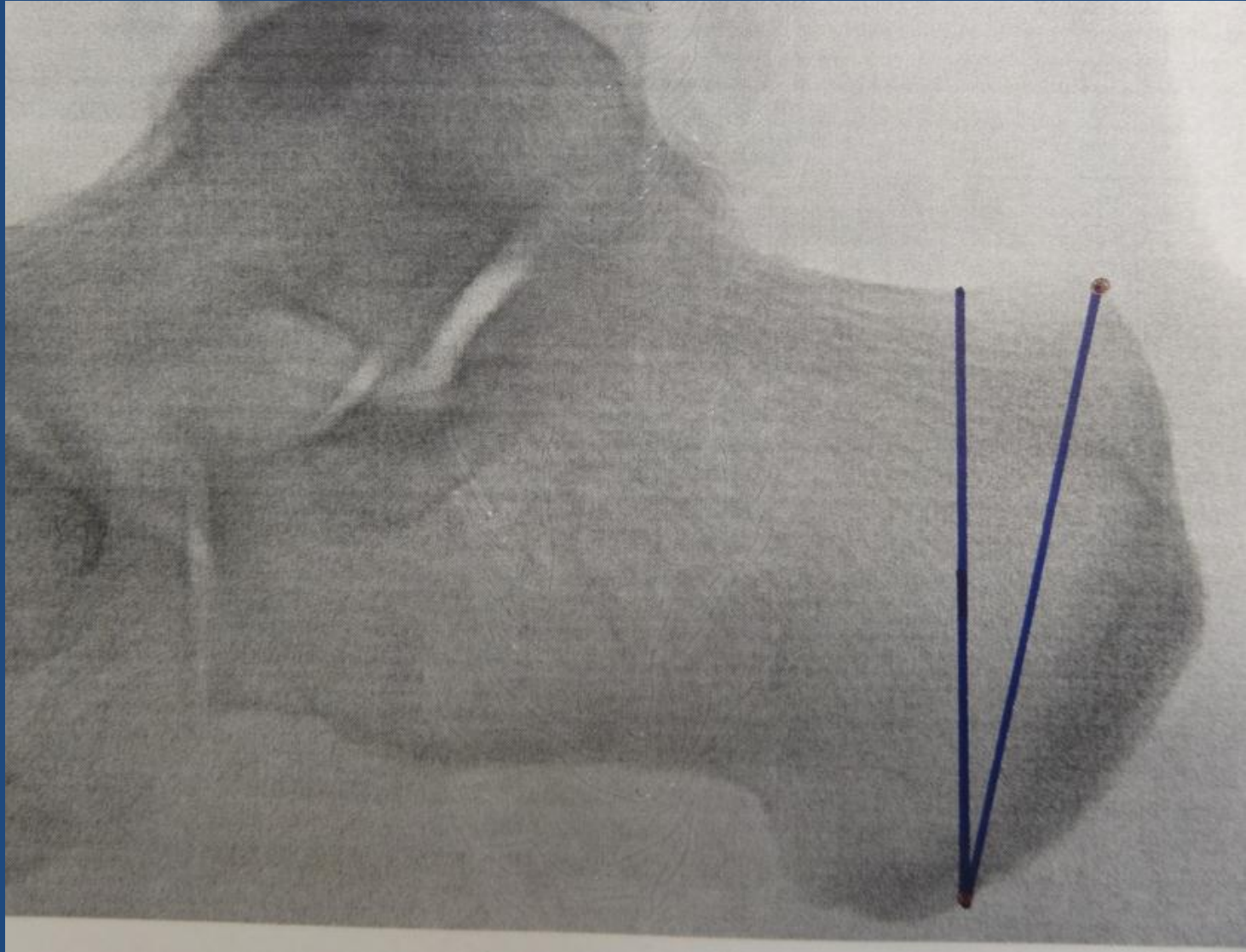
3. Determine Plantar Apex (posterior to WB area of tuberosity)



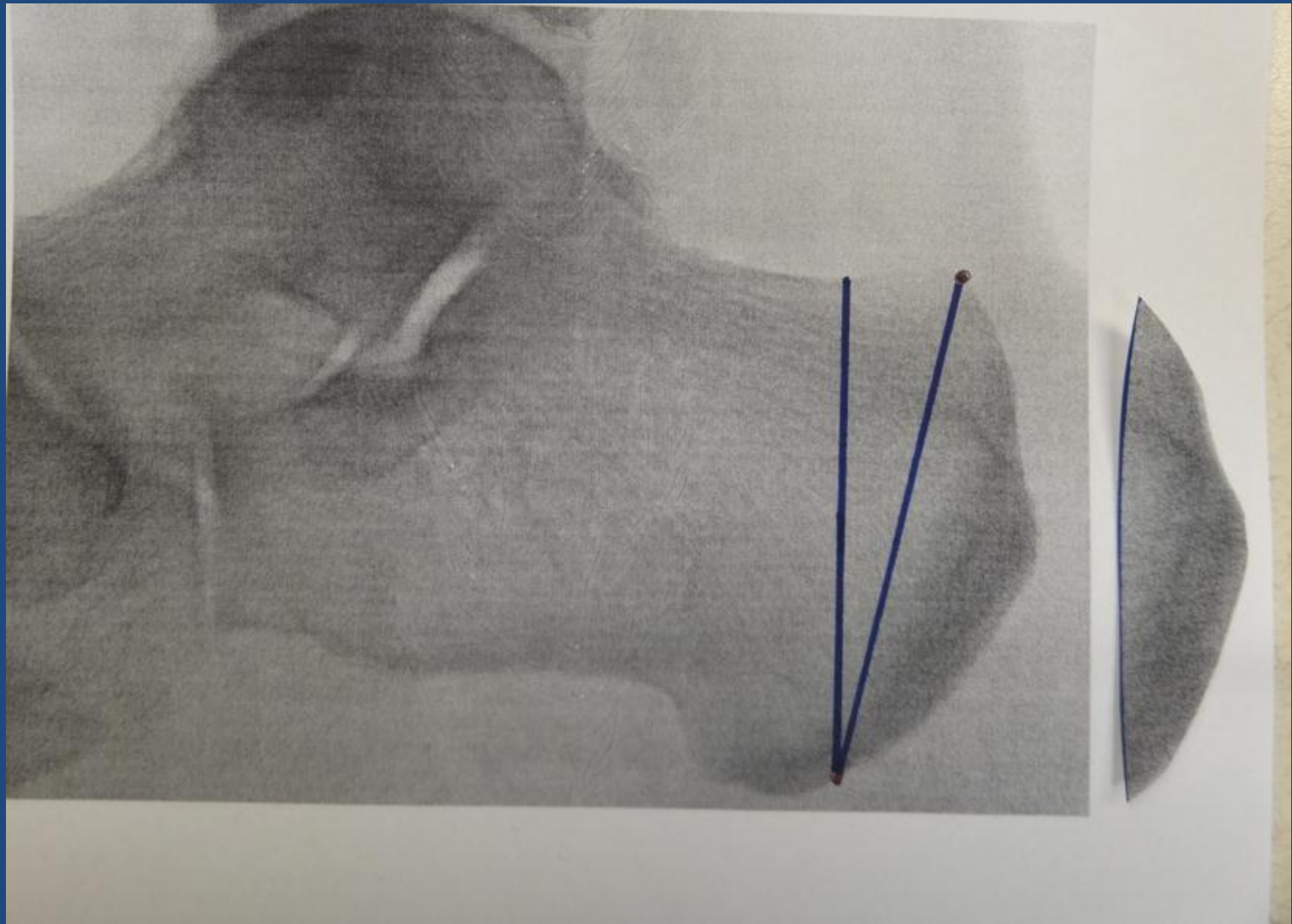
4. Draw Posterior Osteotomy



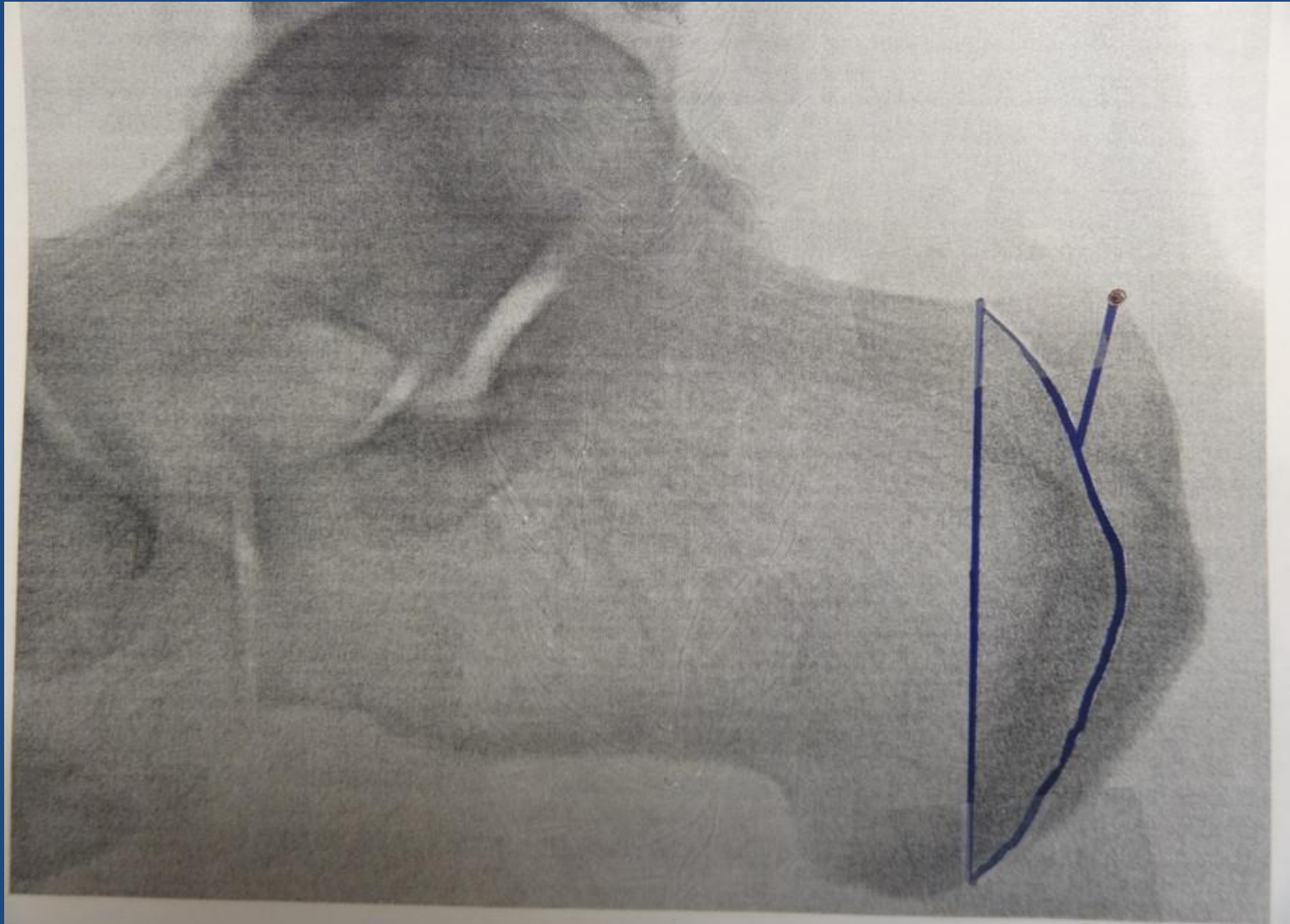
5. Draw Anterior Osteotomy (vertical to the WB surface)



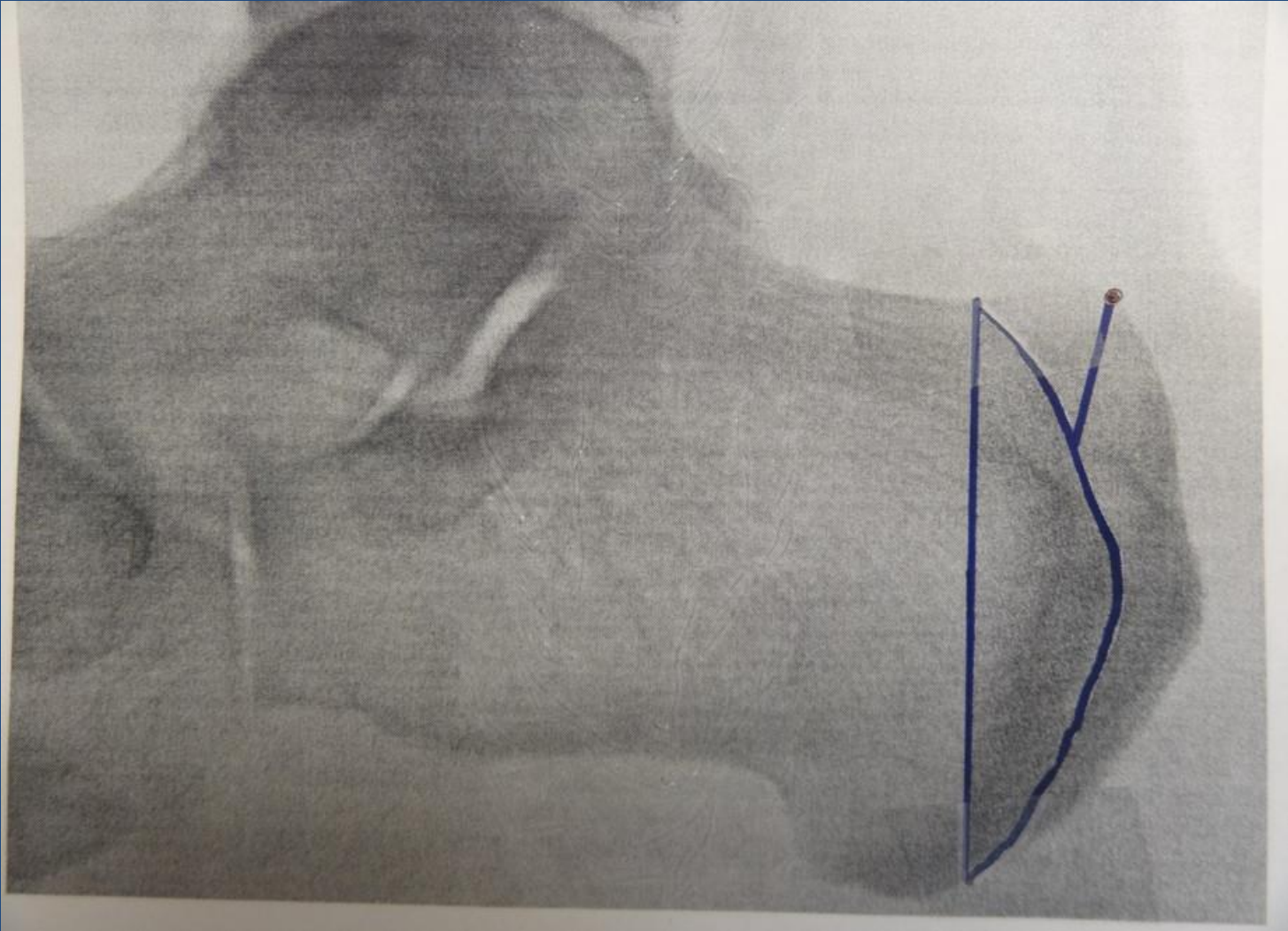
6. Photocopy Template and Cut out Posterior Fragment



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



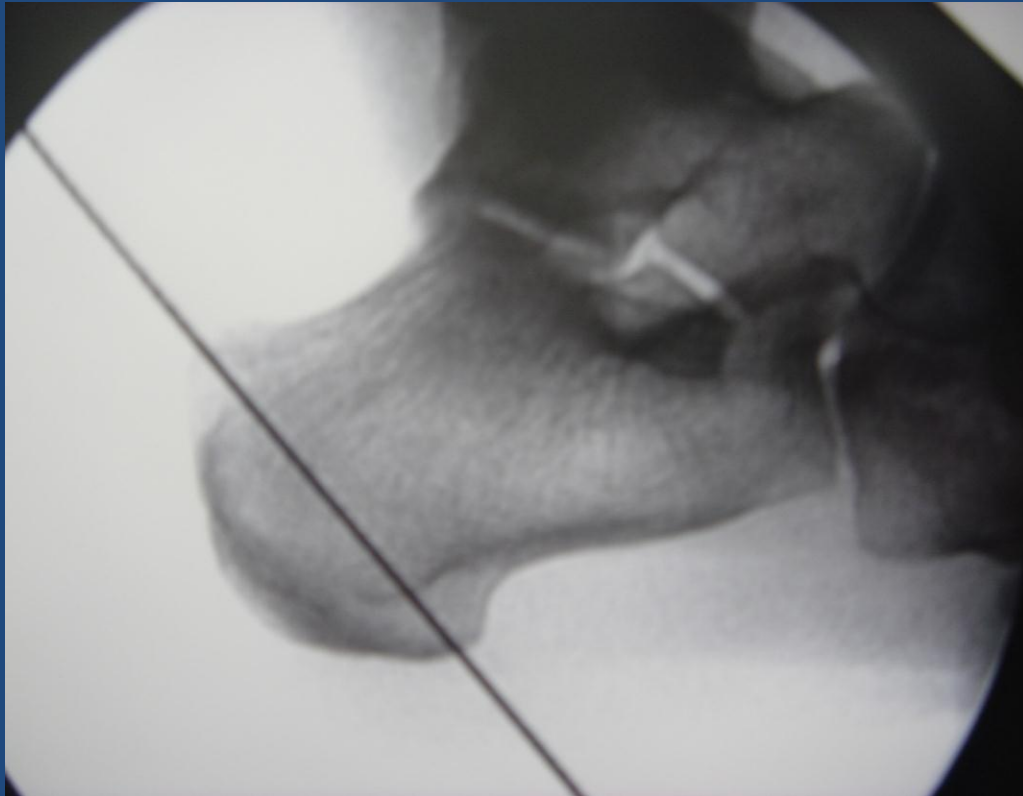
Mark Lateral Edge of Achilles



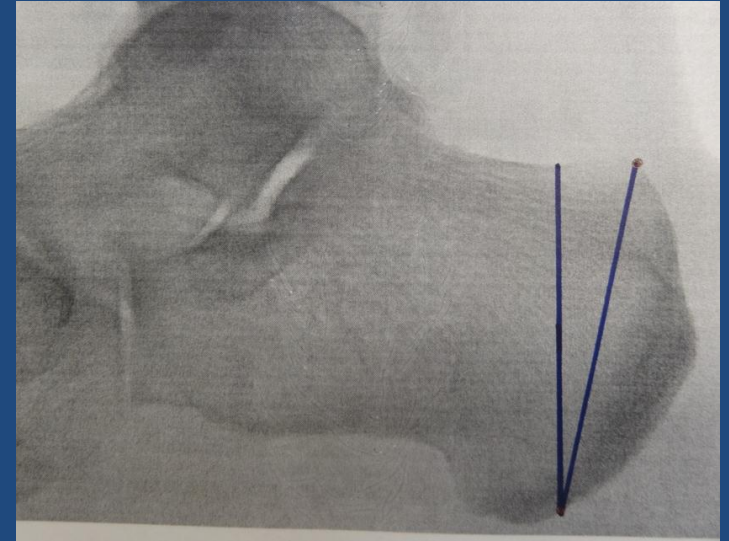
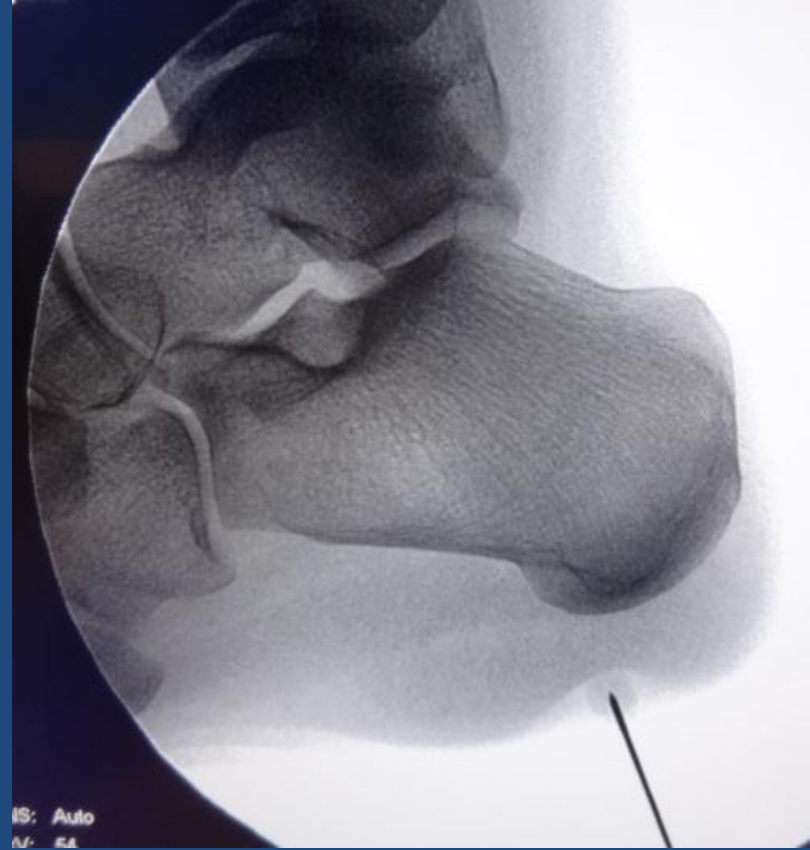
Mark Incision



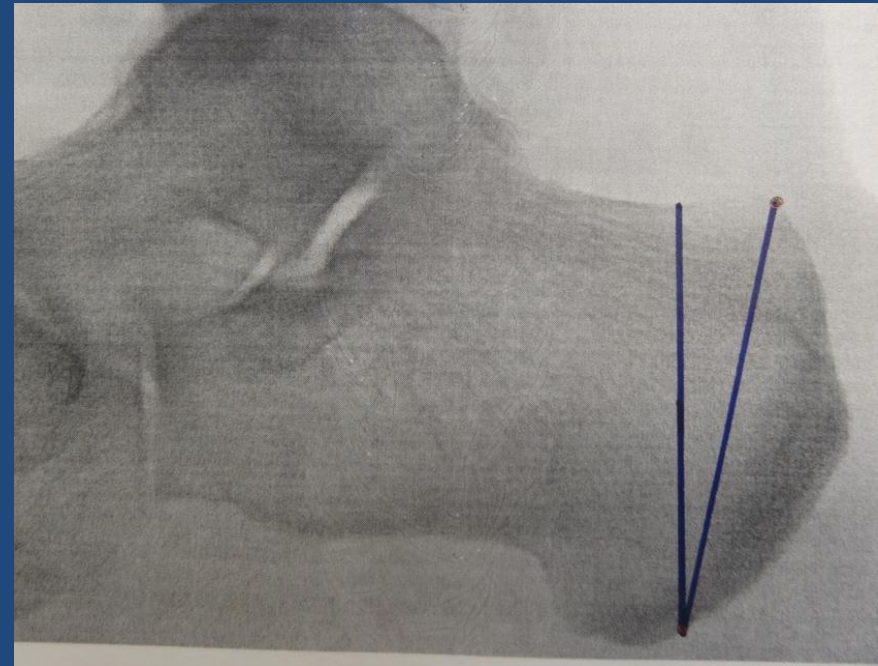
Layover Technique Can be Misleading due to Thick Soft Tissue



Identify Plantar Apex of Osteotomy



Identify Dorsal Exit Point of Anterior Osteotomy



Proposed Osteotomy



Full Depth Incision (Like calc fracture)



Blunt Dissection By Achilles



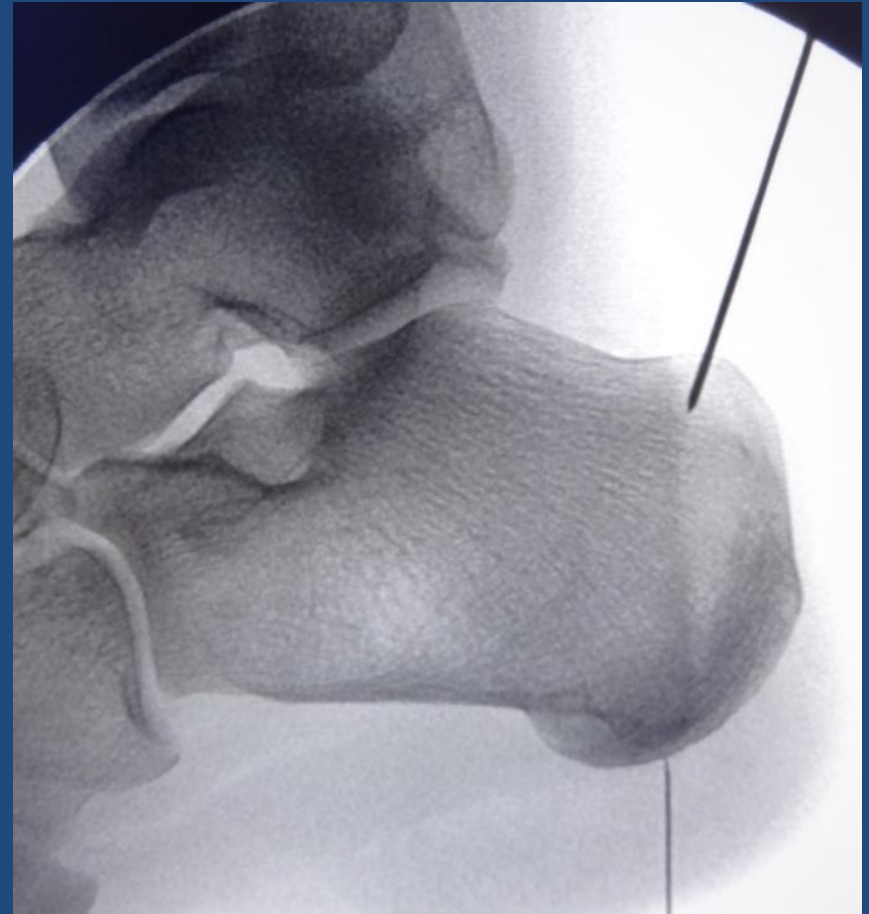
Isolated Periosteal Elevation (at wedge, no need to touch Achilles)



Expose Dorsal Cortex of Calcaneus



Confirm Plantar Apex and Exit Point of Posterior Osteotomy



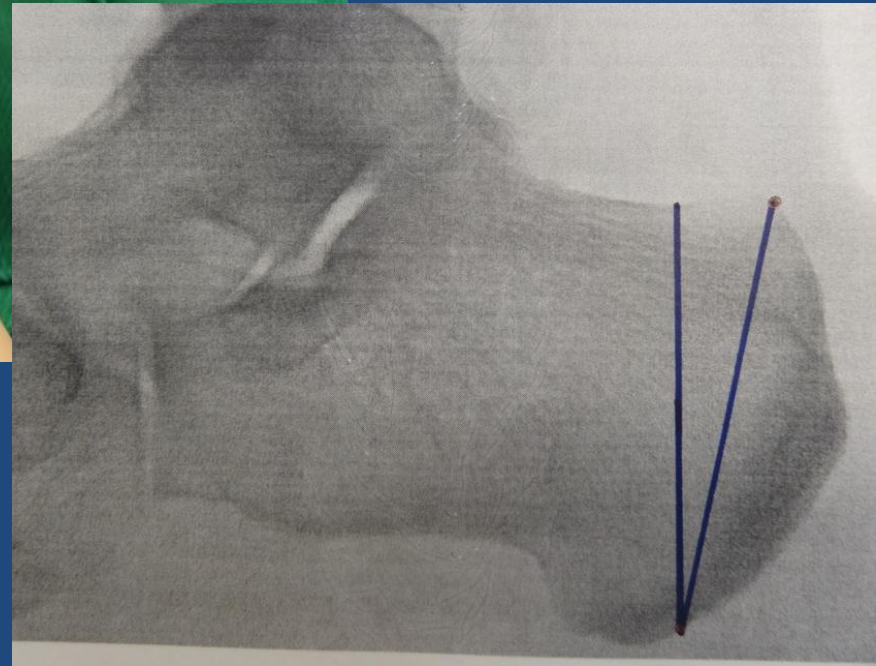
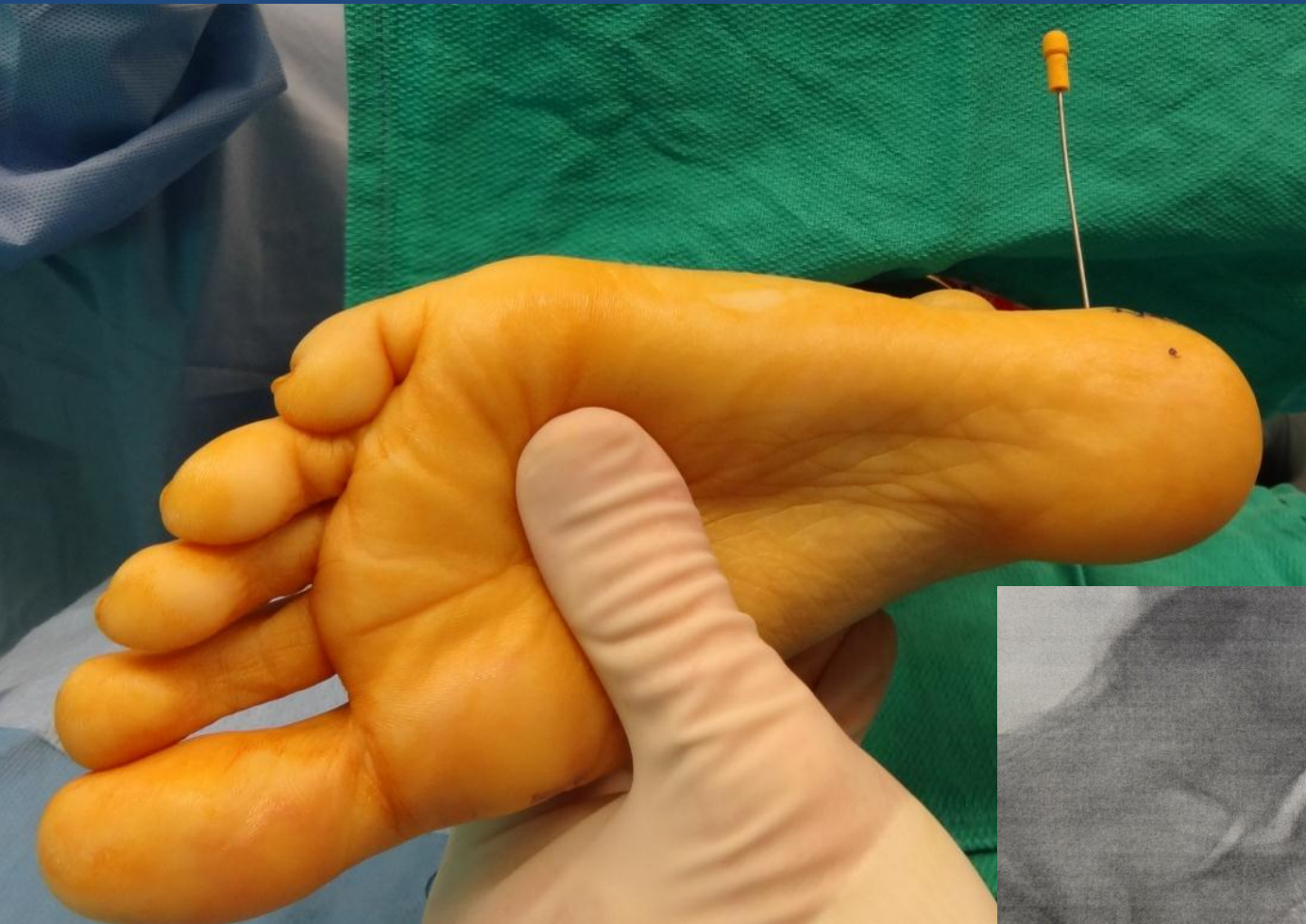
Free Dorsal Periosteum



Free Medial Periosteum



Insert Osteotomy Guide Pin



2nd Parallel Osteotomy Guide Pin

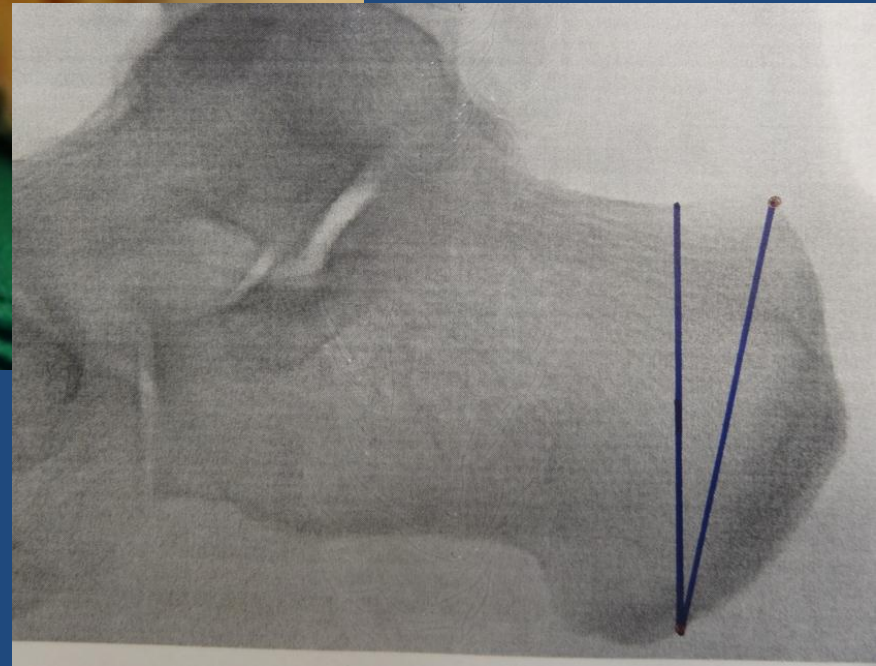
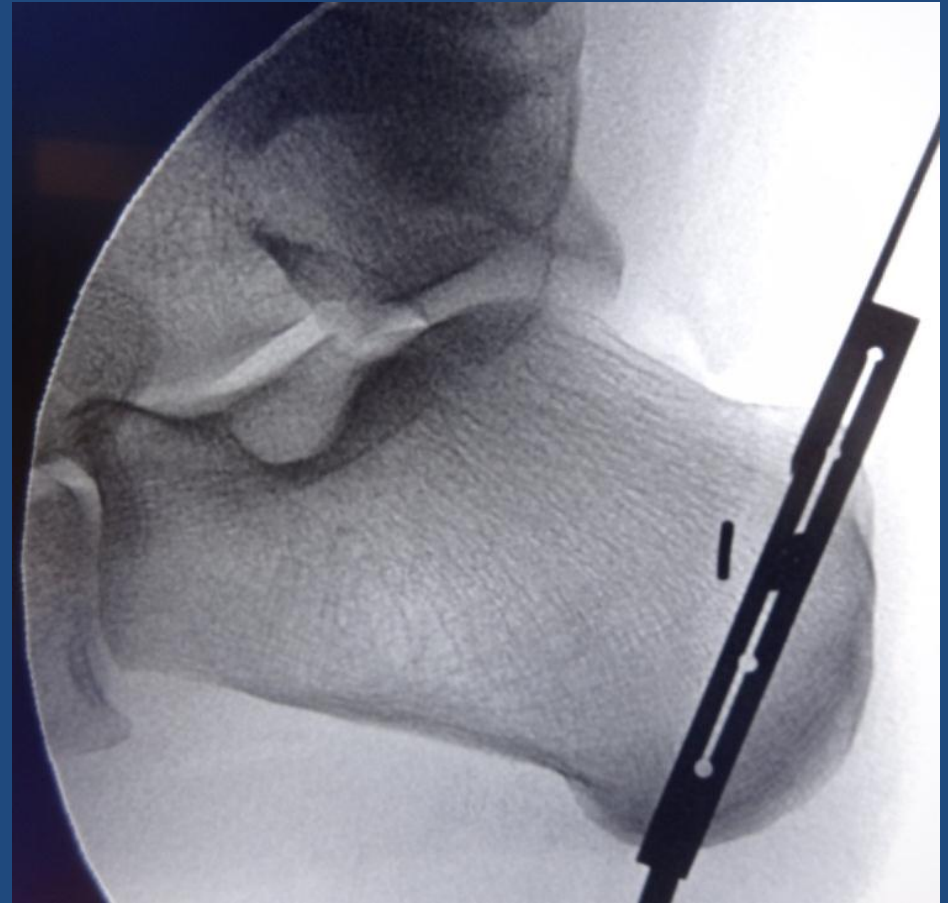


Image Osteotomy Guide for Posterior Cut



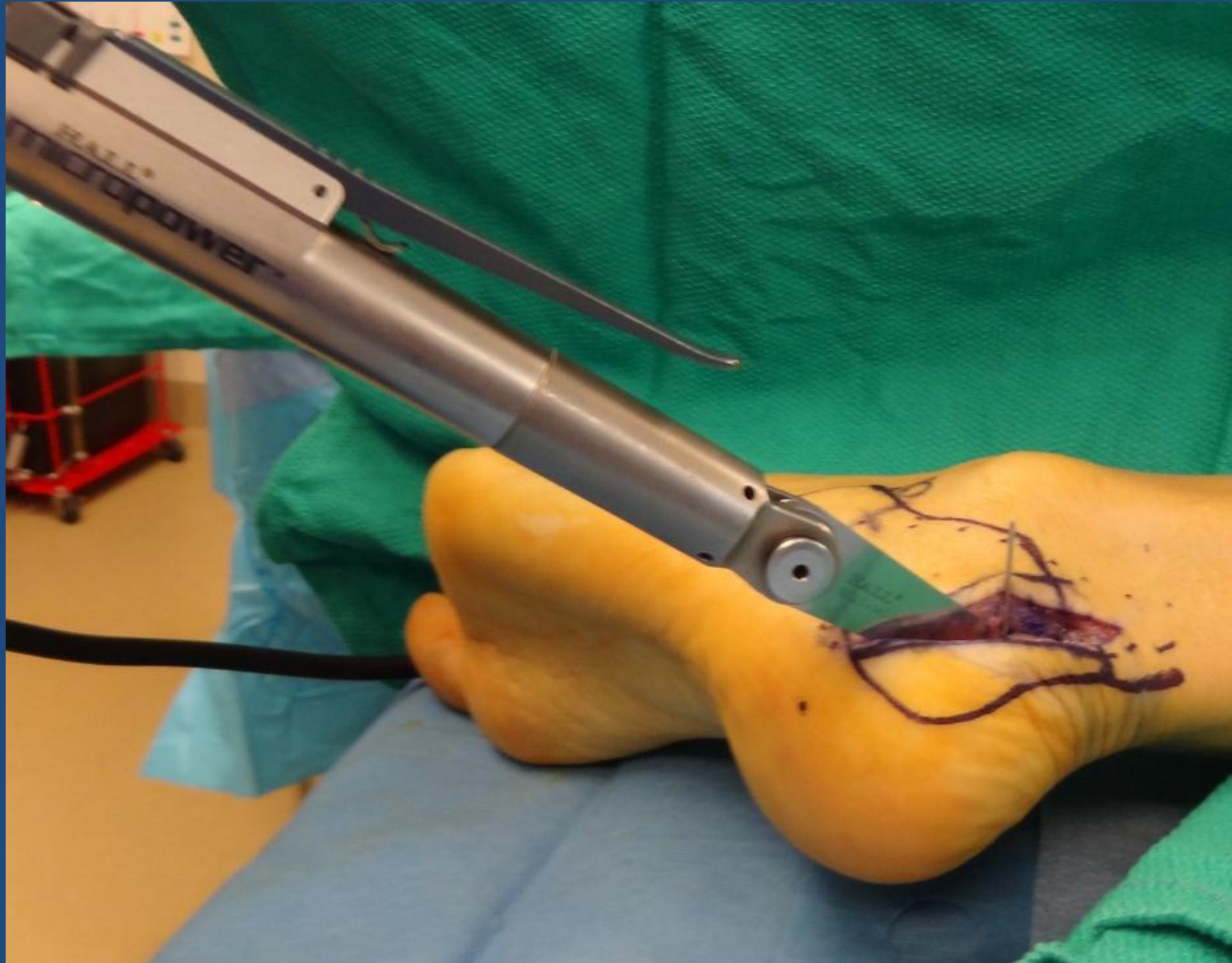
Align Saw with
Osteotomy
Guide and
Guide Pin



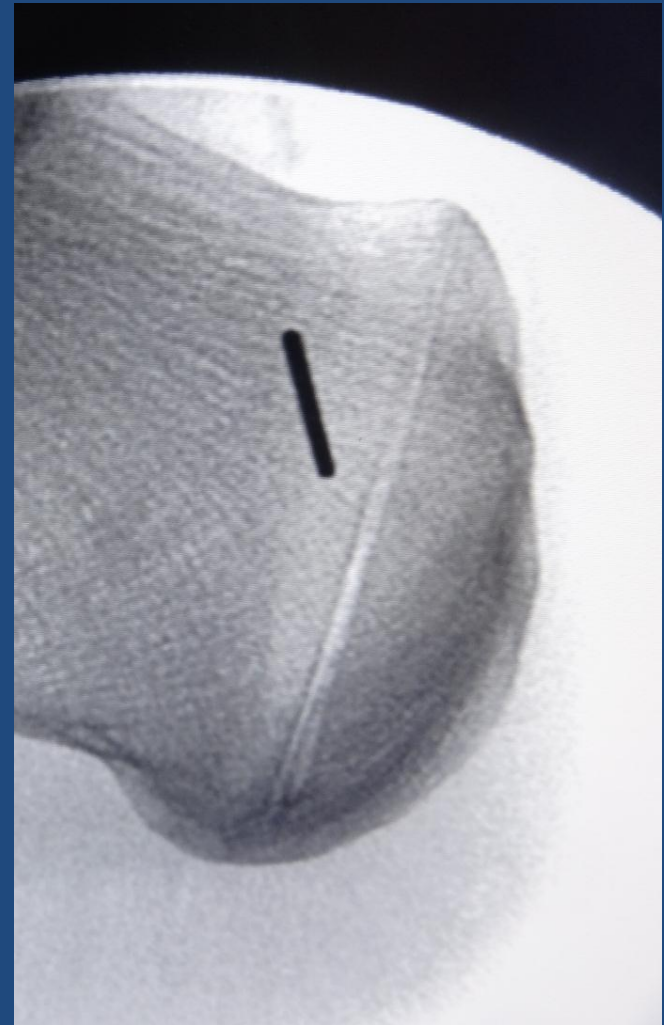
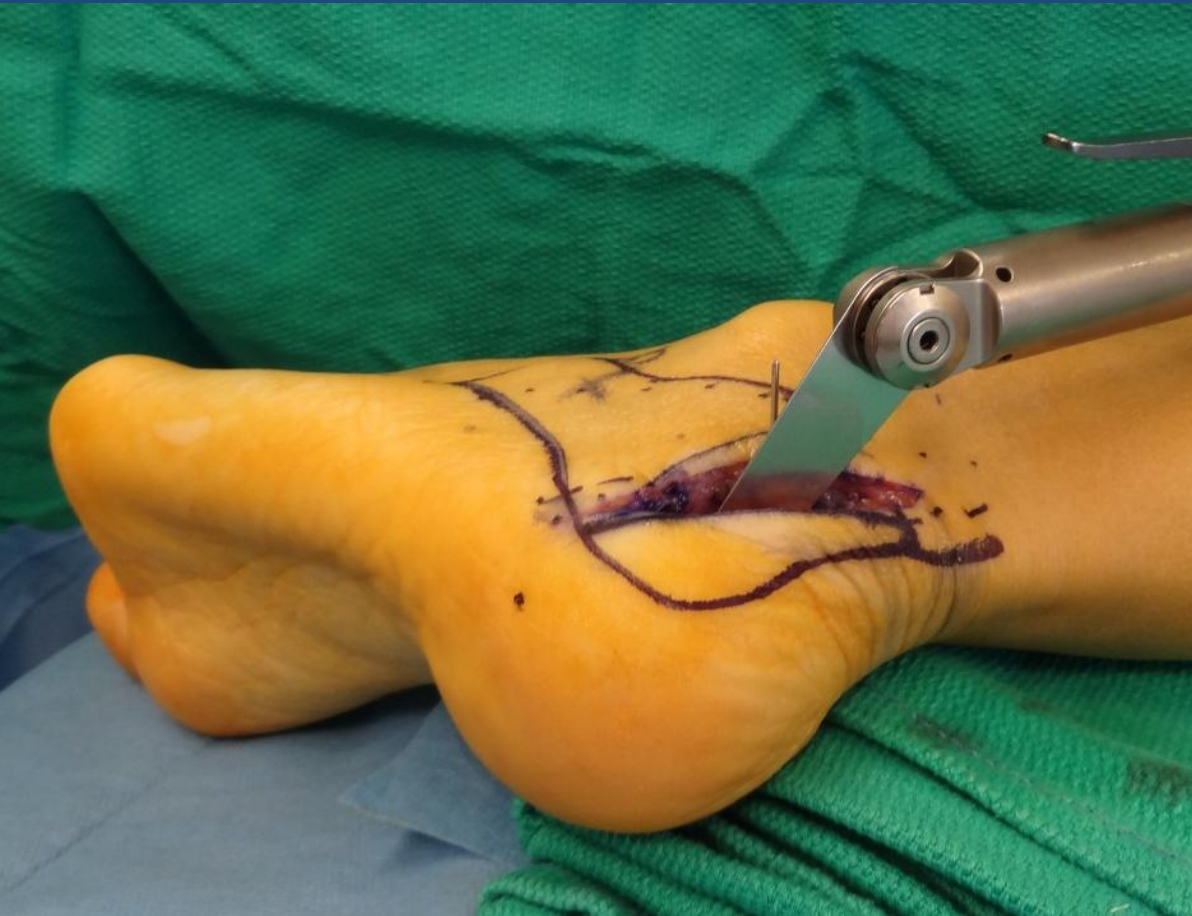
Switch to Long Saw (mark at 3cm)



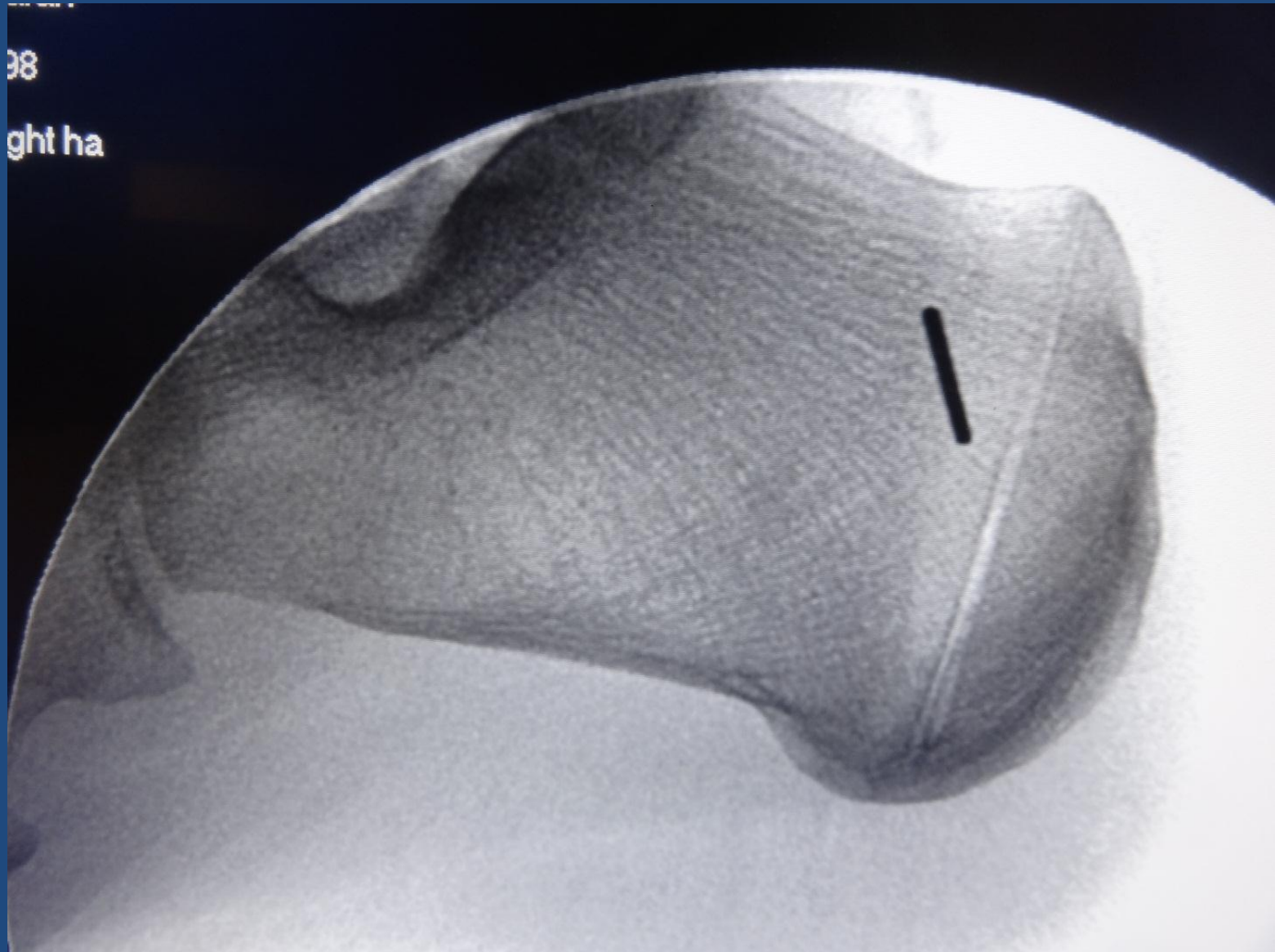
Use Existing Cut to Maintain Angle



Carefully Finish Plantar Medial Apex



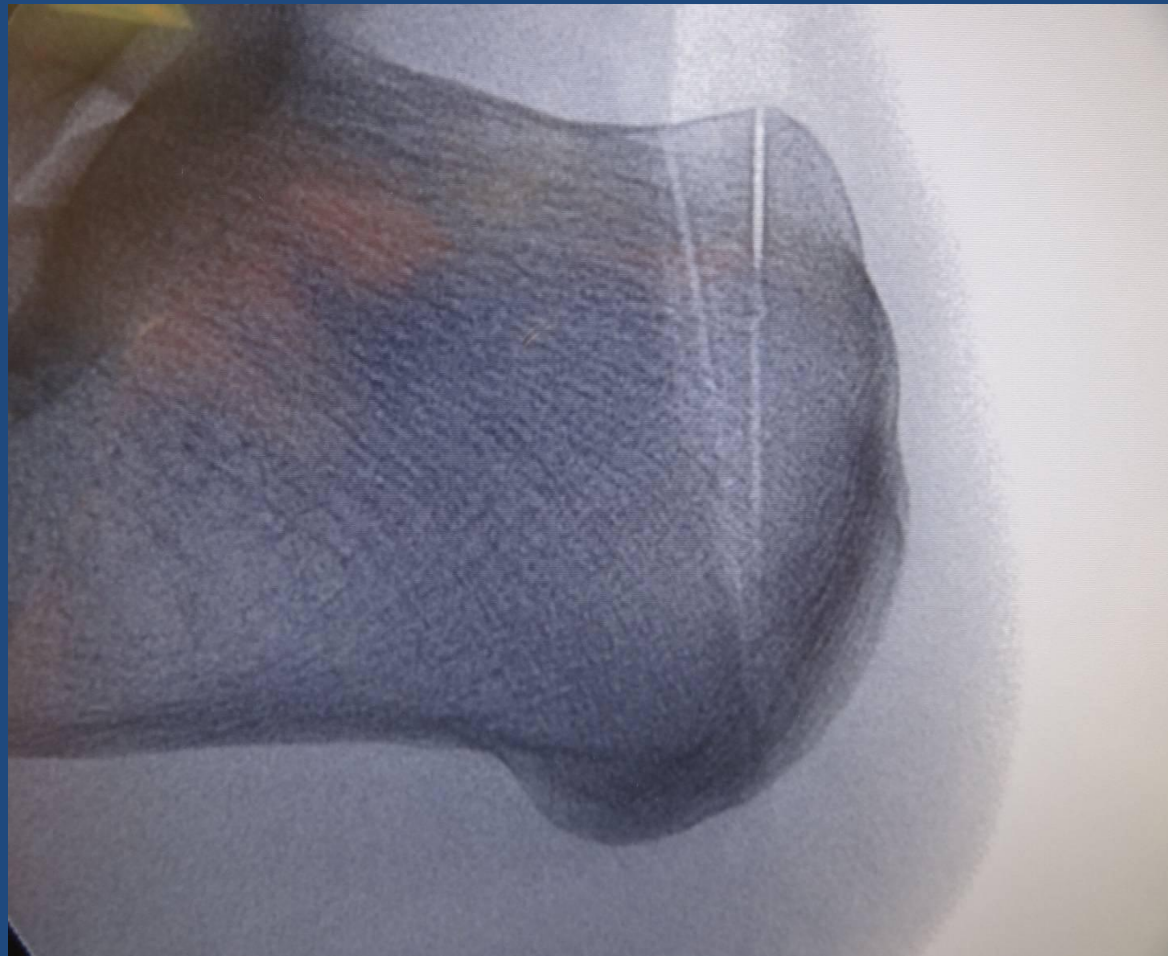
Posterior Osteotomy Completed



Location of Anterior Cut for 7mm Wedge



Osteotomies Completed



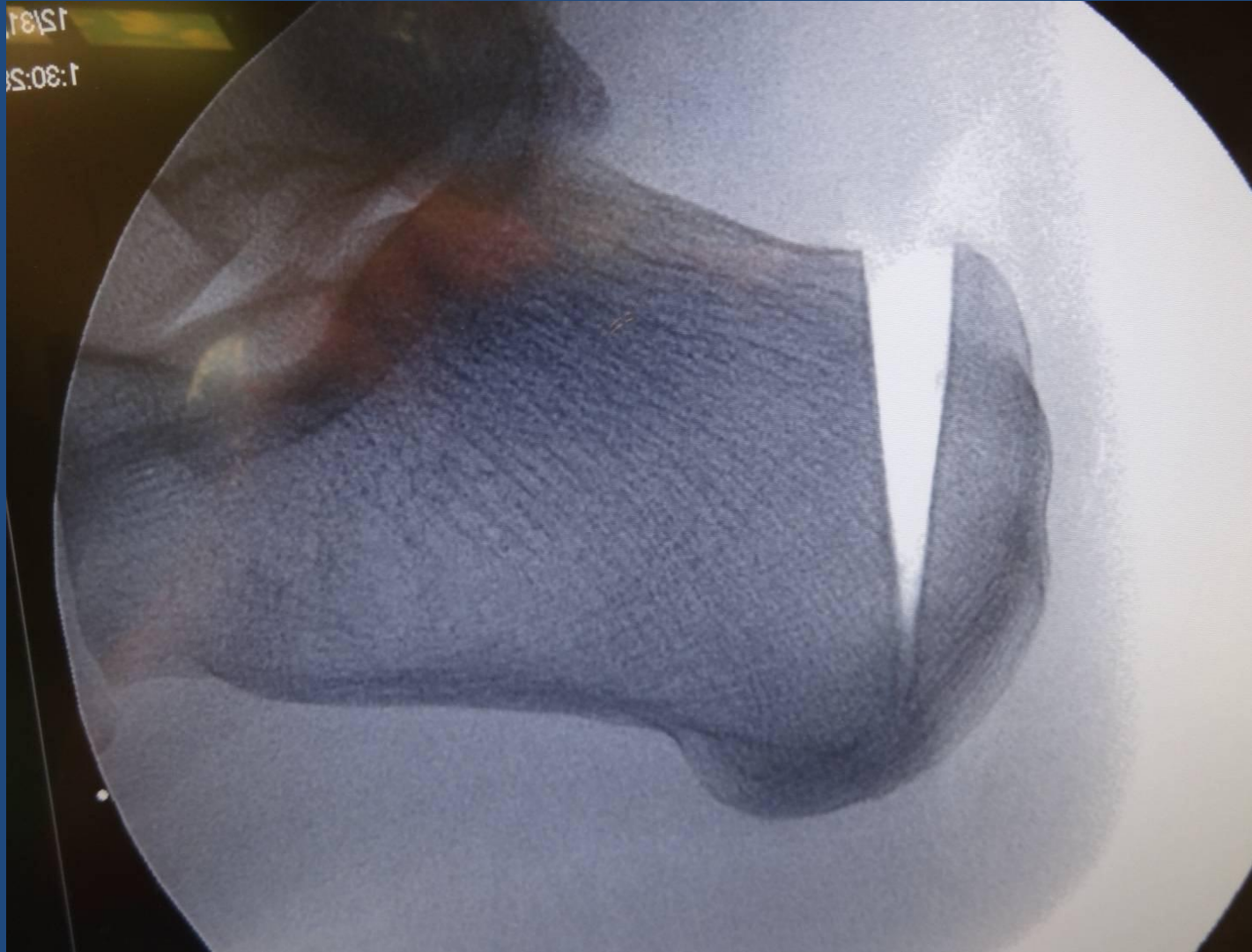
Remove Wedge in One Piece (V8351)



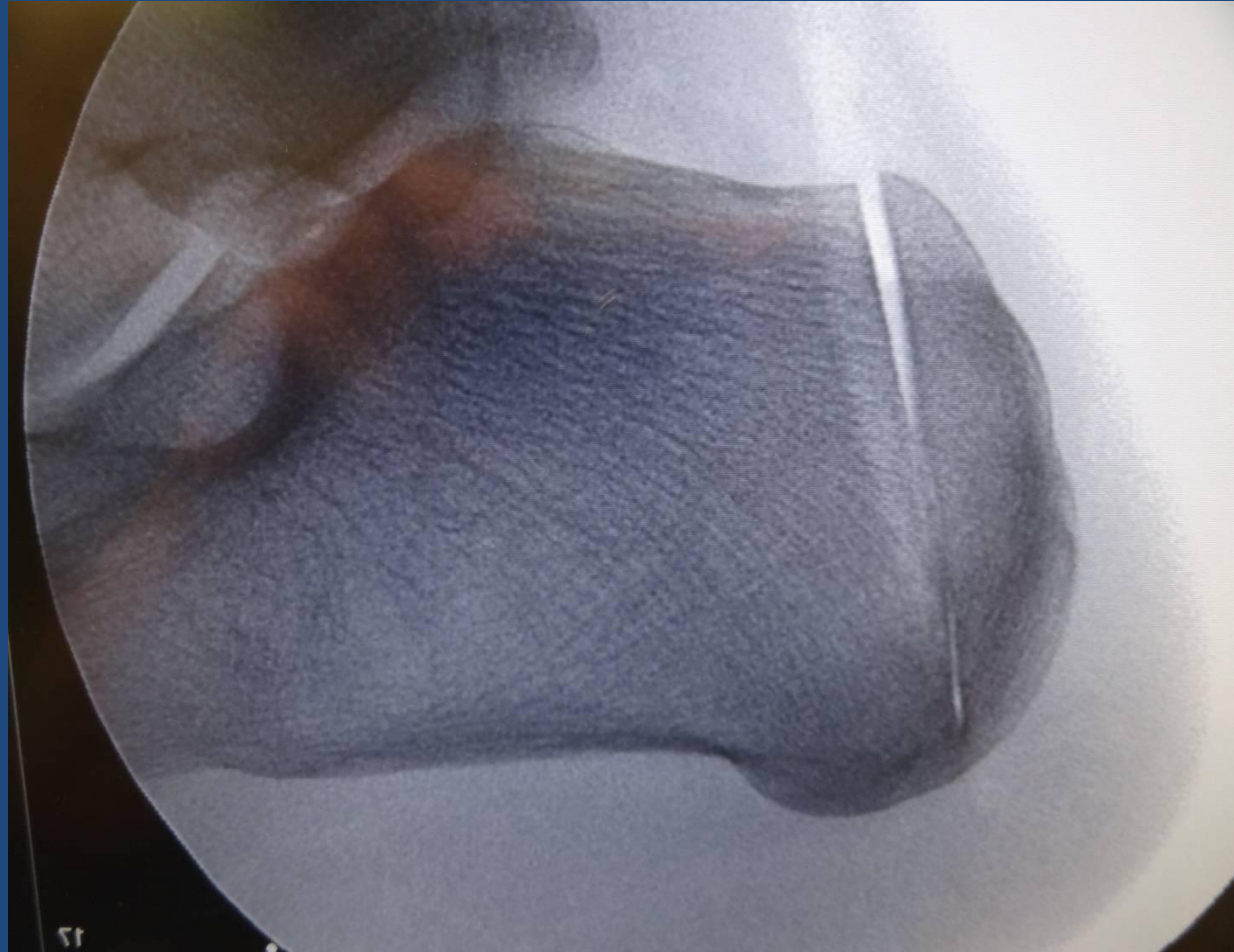
Size of Wedge (7-9 mm)



Finish Distal Apex



Dorsiflex Foot to Compress (note intact plantar hinge)



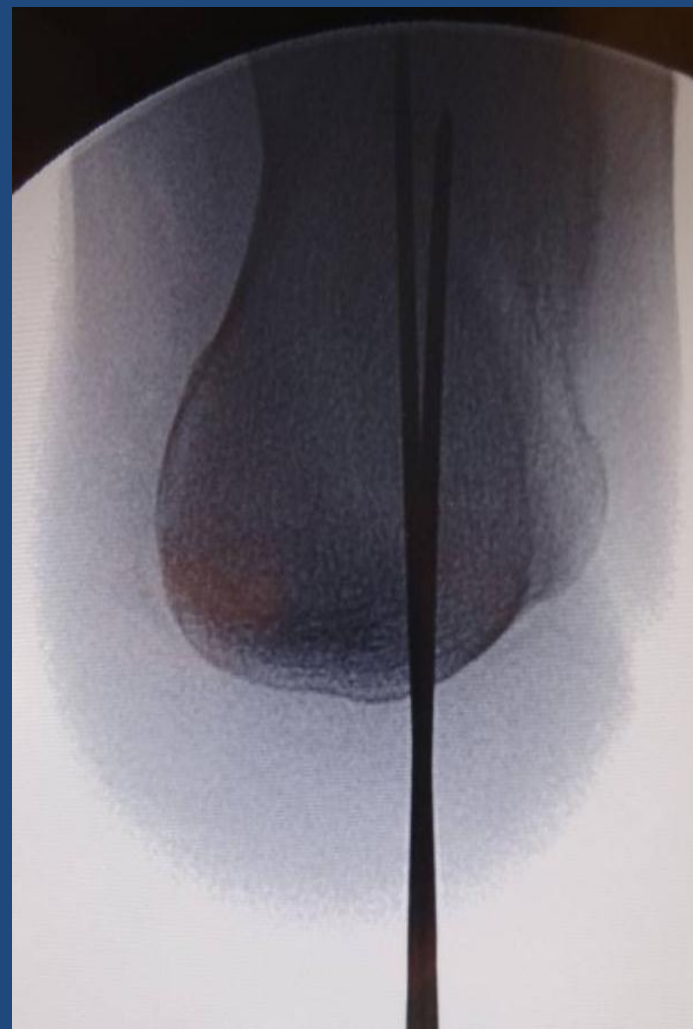
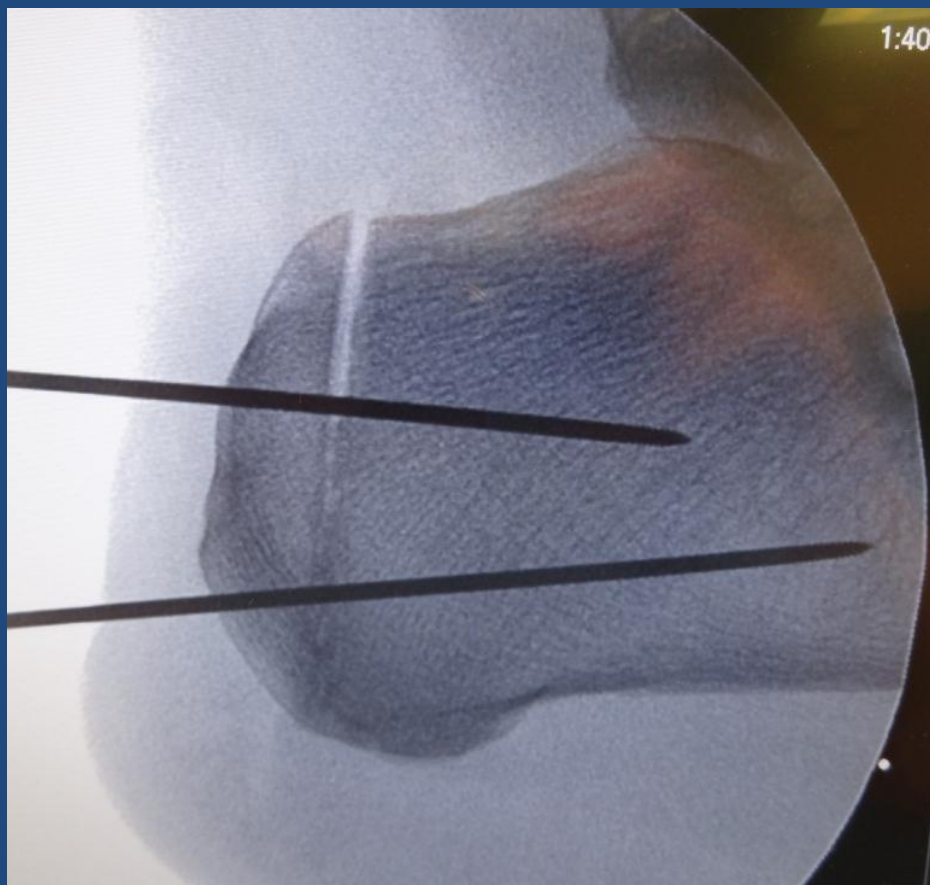
Reduce Osteotomy (9187, B3)



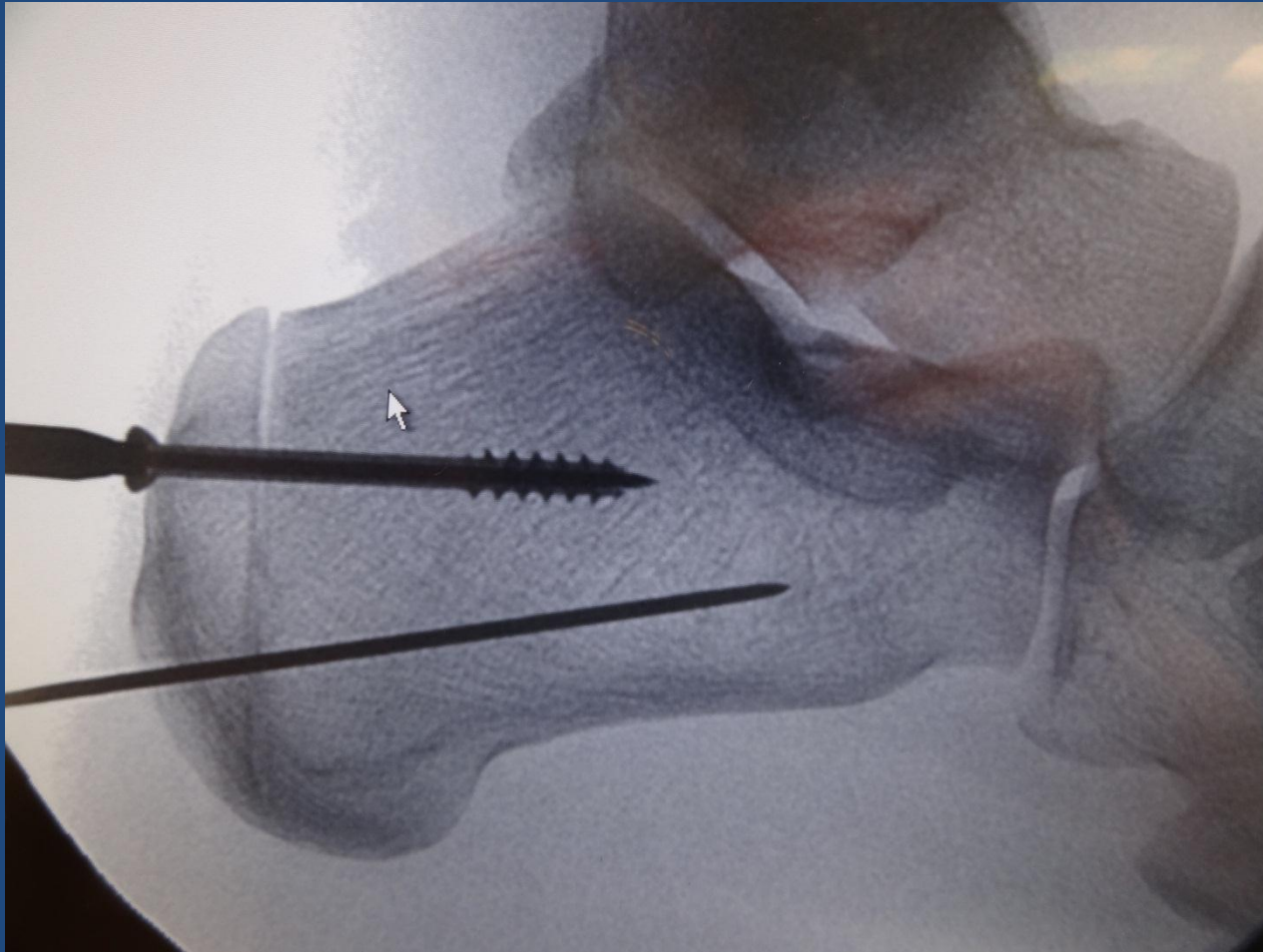
Reduction of Osteotomy (v8352)



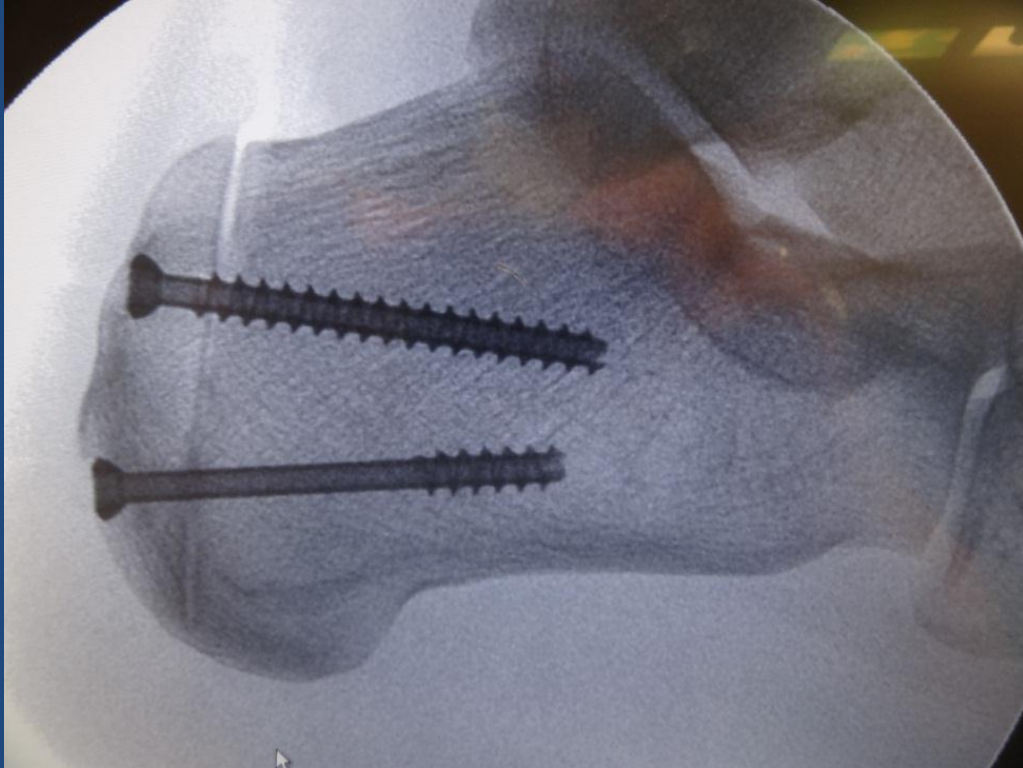
Insert Guide Pins



Countersink Issues Thru the Achilles



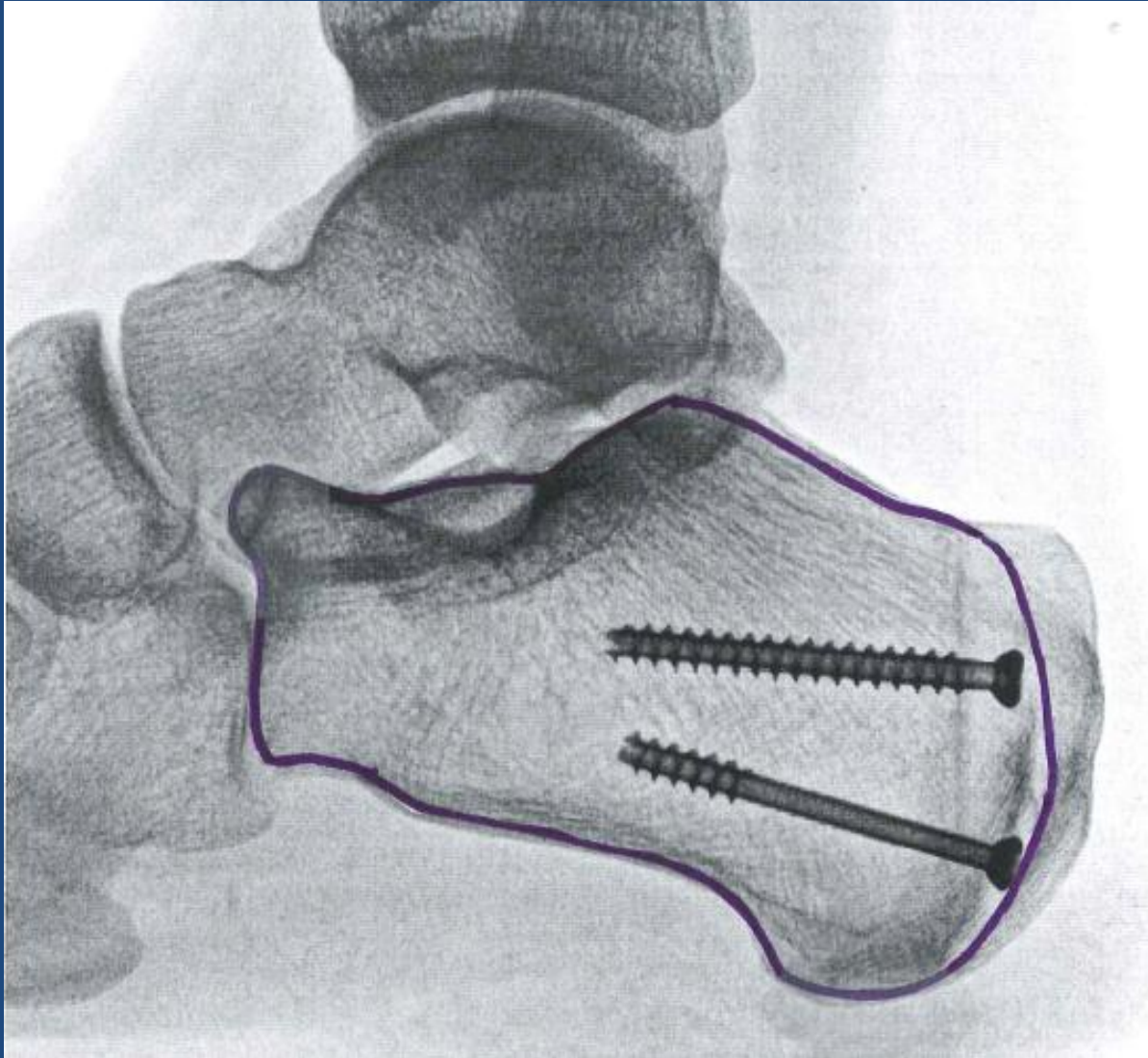
Screw Fixation



6 Weeks Postop
(return to WBAT)



Preop vs. Postop Comparison



- Global remodeling without touching the Achilles

Alternative Posterior Pin Fixation



Questions / Comments?

- 1. Keck S, Kelly P. Bursitis of the posterior part of the heel, evaluation of surgical treatment of eighteen patients. *J Bone Joint Surg [Am]* 47A:267, 1965.
- 2. Aronow MS. Posterior heel pain (retrocalcaneal bursitis, insertional and noninsertional Achilles tendinopathy). *Clin Podiatr Med Surg*. 2005 Jan;22(1):19-43. Review.
- 3. Green AH, Hass MI, Tubridy SP, Goldberg MM, Perry JB. Calcaneal osteotomy for retrocalcaneal exostosis. *Clin Podiatr Med Surg*. 1991 Jul;8(3):659-65. Review.
- 4. Miller AE, Vogel TA. Haglund's deformity and the Keck and Kelly osteotomy: a retrospective analysis. *J Foot Surg*. 1989 Jan-Feb;28(1):23-9. Review.
- 5. McGlamry's Comprehensive Textbook of Foot and Ankle Surgery. 3rd Ed. Edited by Alan S. Banks, DPM, Michael S. Downey, DPM, Dennis E. Martin, DPM, and Stephen J. Miller, DPM. 2,304 pages, illustrated. Lippincott Williams and Wilkins, Philadelphia, 2001.
- 6. Boffeli T, Peterson M. The Keck & Kelly Wedge Calcaneal Osteotomy for Haglund's Deformity: A Technique for Reproducible Results. *J Foot Surgery*. 51 (2012) 398–401.