Pearls & Pitfalls of Lapidus Fusion

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

DES MOINES UNIVERSITY

Foot & Ankle Surgical Symposium

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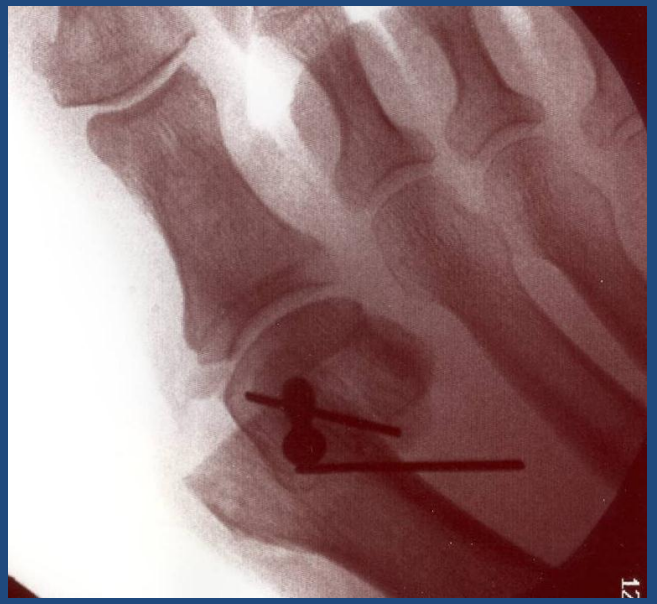
HealthPartners

Relative Contra-indications to Lapidus

1. Short 1st ray
2. 2nd ray overload
3. High PASA
4. Osteoporosis
5. Inability to be NWB

Lapidus Myth: High Rate of Complications Compared to Distal Metatarsal Osteotomy



Reality: Complications from DMO are a Disaster

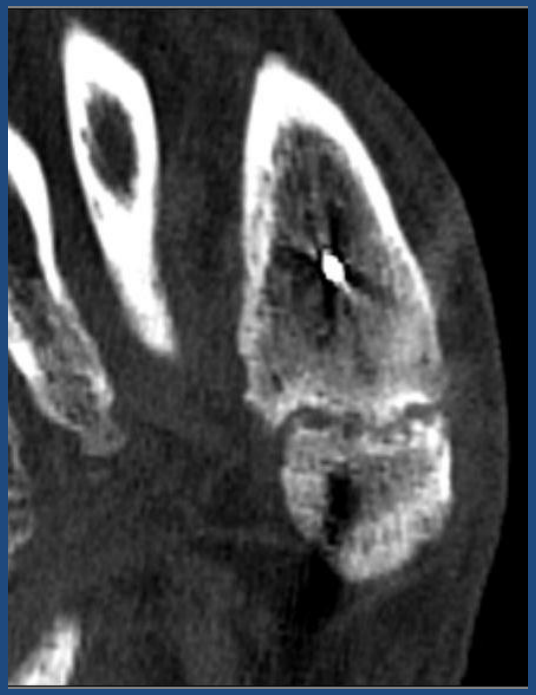
Lapidus Complications are Repairable

- Recurrent bunion?
- Dorsal bunion / elevatus
- Inter-cuneiform instability?
- Repeat Lapidus?
- Non-union

Preop and 10 Weeks Postop

Who is likely to get hallux varus after Lapidus?

Lapidus Non-union – 2004-2014



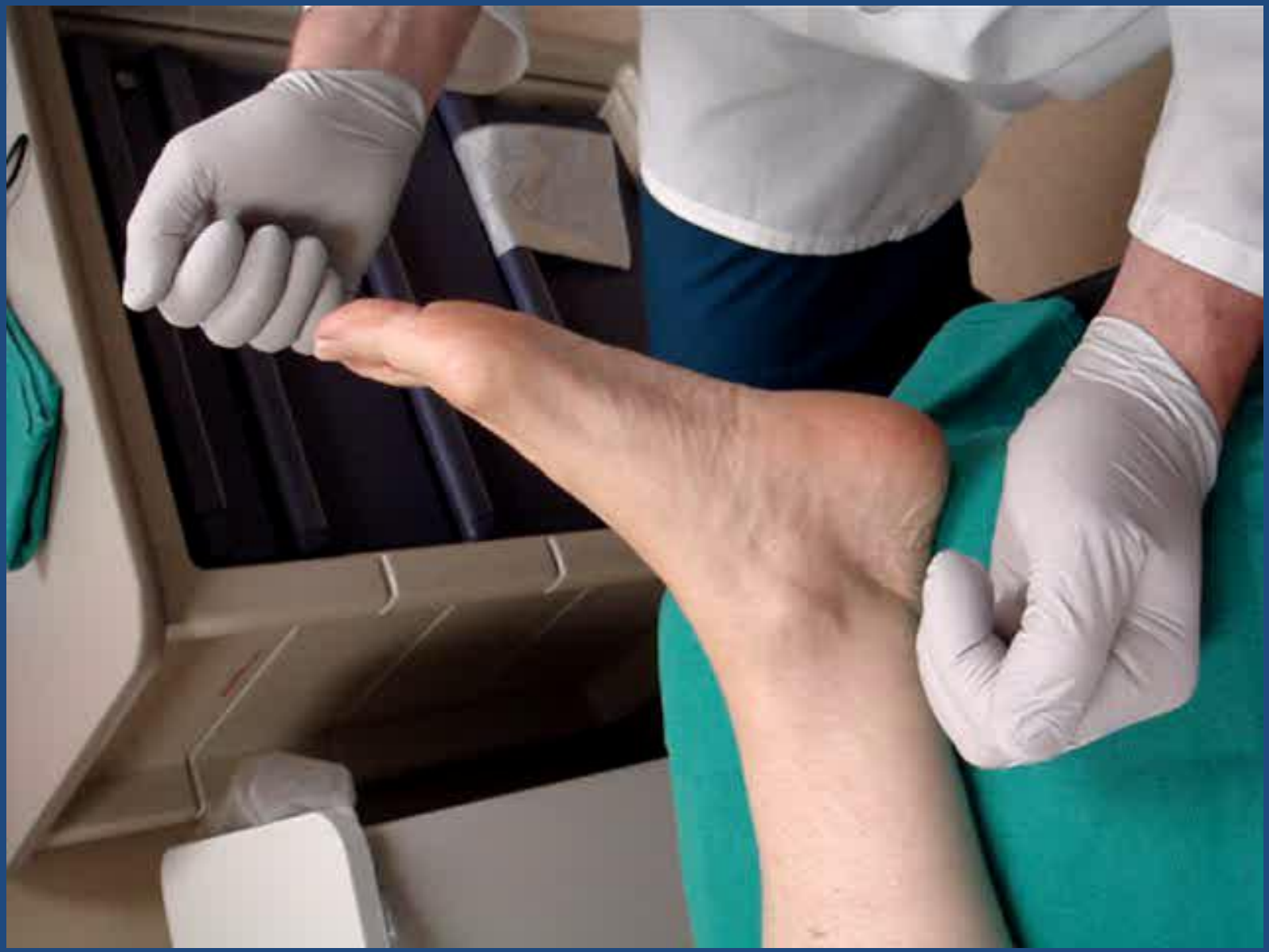
Open Joint Prep with MSC Allograft

Which bunions are hypermobile?

Transverse Plane Hypermobility (9233- B3)

Sagittal Plane Hypermobility (9234, B3)

Hypermobility Video (T-50, 9148)



Hypermobility Video (T-50, 9149)

BWO for hypermobility?

- Document sagittal and / or transverse plane hypermobility
- Clinical and radiographic hypermobility

Need for Adjunctive Procedures

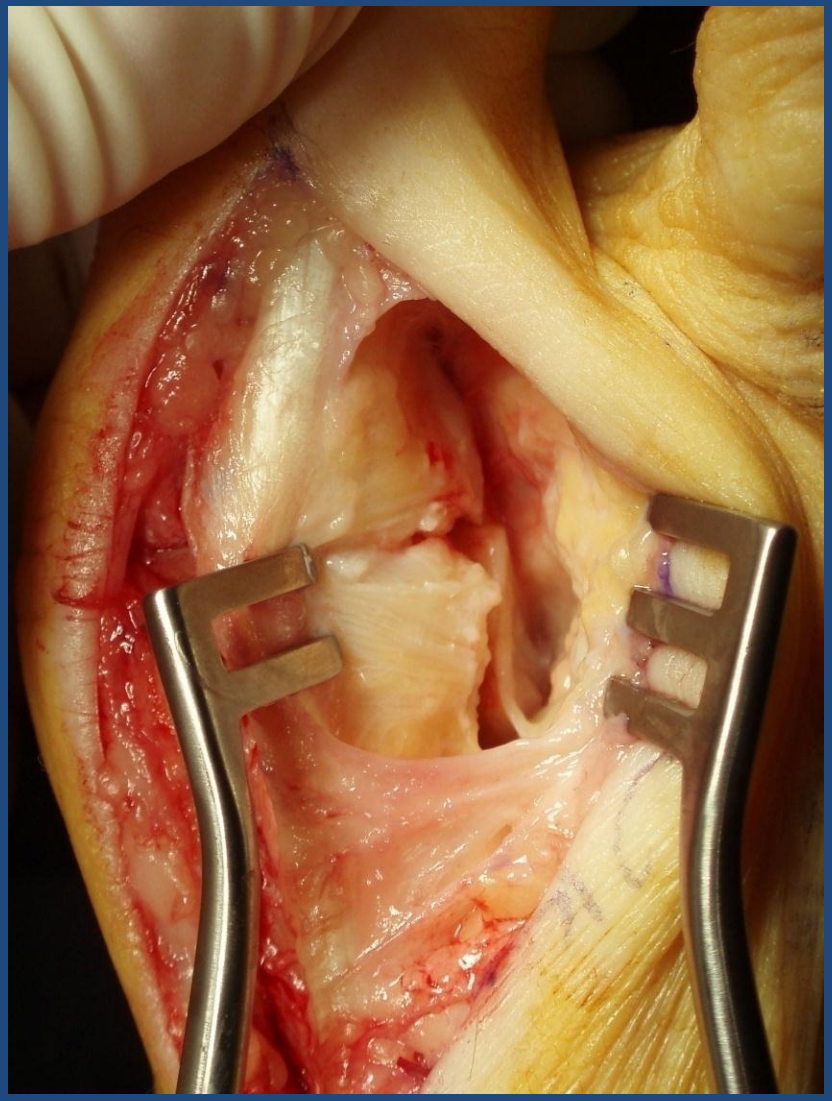
- Joint prep considerations
- Pre-existing lesser MPJ pathology

Procedure & Fixation Pearls & Pitfalls

Isolate Dorsal Cutaneous Nerve

Leave Nerve Covered in Tissue

Standard Sesamoid Release but Leave Lateral Ligament Intact



Document DJD for Future Reference (Why does my toe still hurt?)

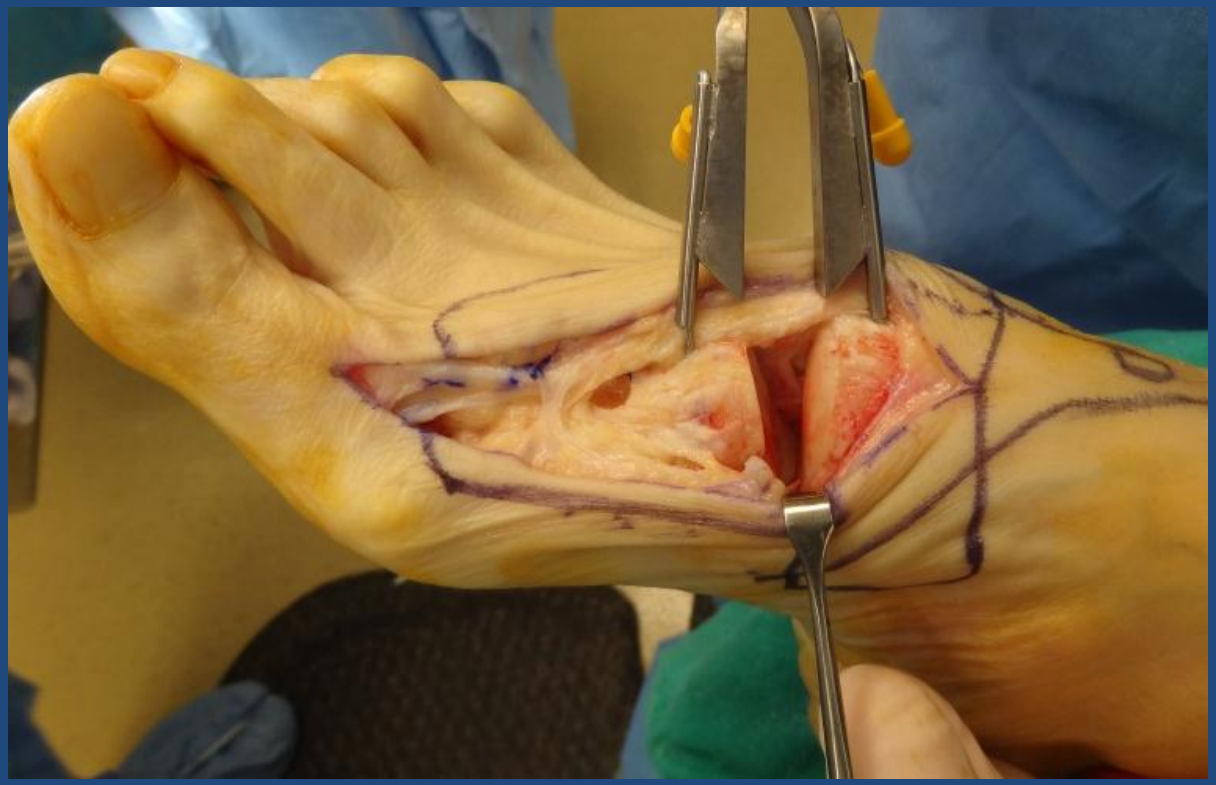
Careful Lateral Exposure to Protect NV Structures

Preserve Inter-cuneiform Ligaments

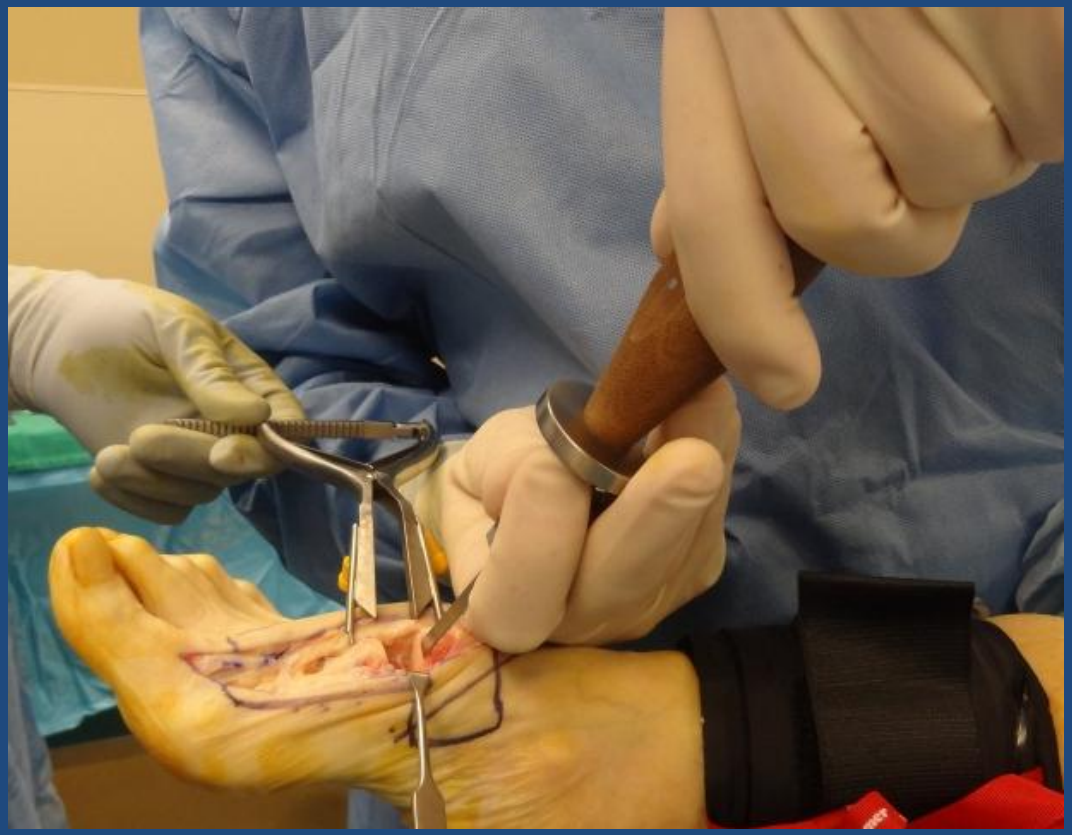
Joint Prep Considerations

Ideal Location and Angle of Invasive Distractor

Distract for Full Joint Exposure (limited access to plantar joint)

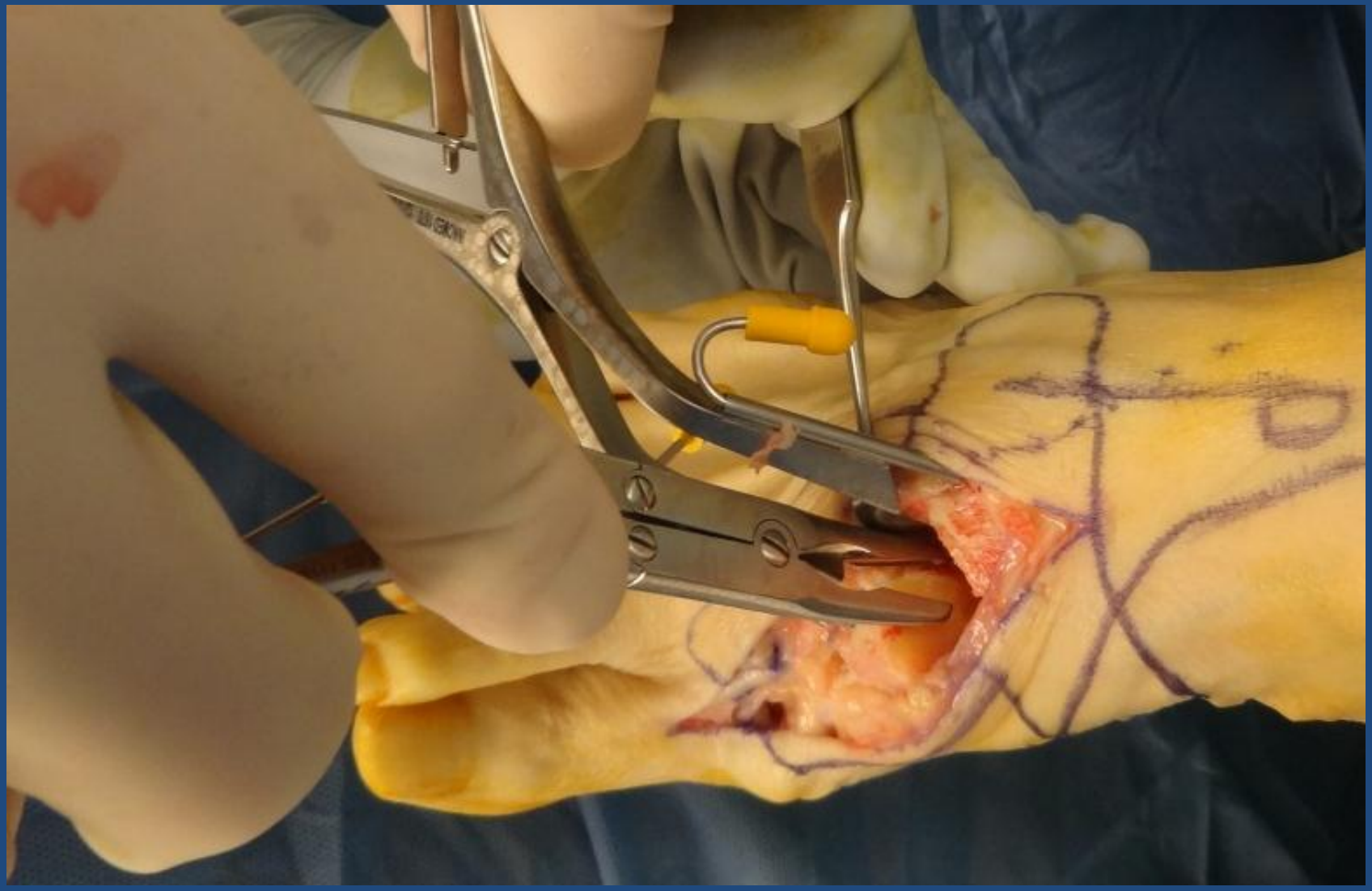


Initial Joint Prep with Flexible Osteotome



Finish with Curette

Nip Lateral Flare at Base of Metatarsal

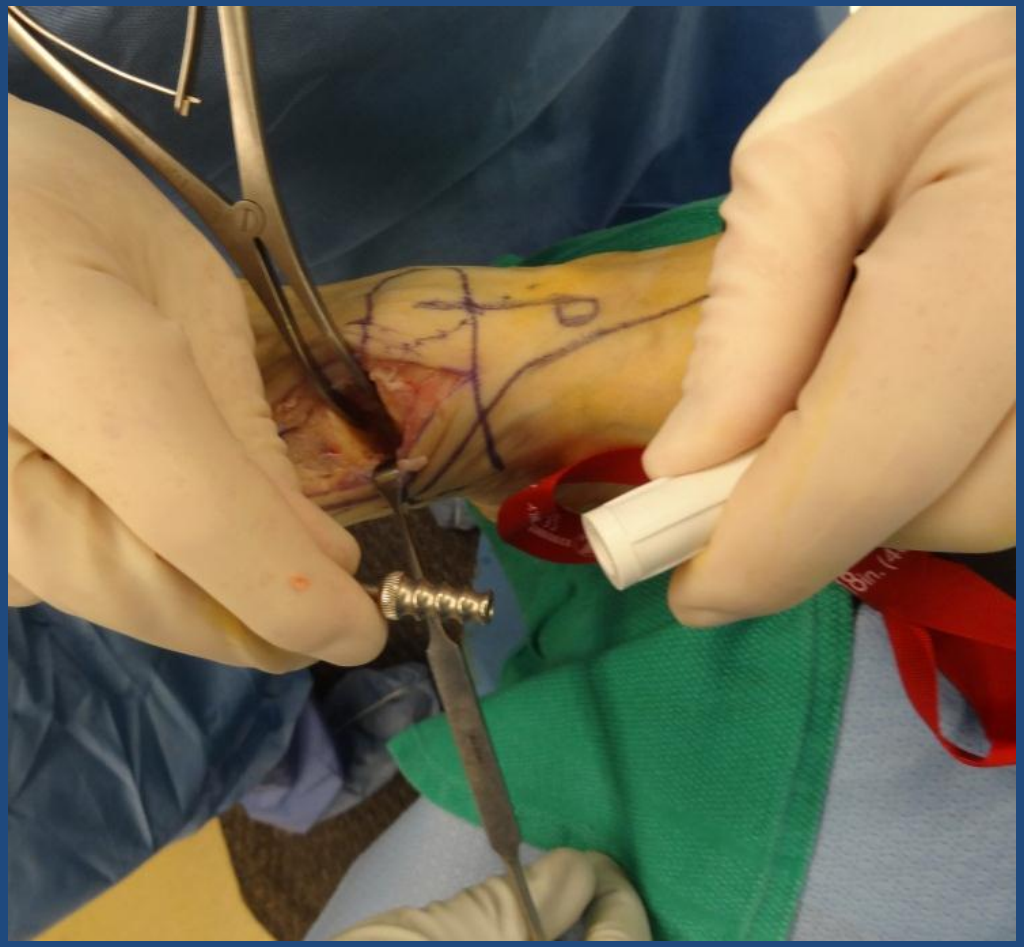


Plantar Distraction with Smooth Lamina

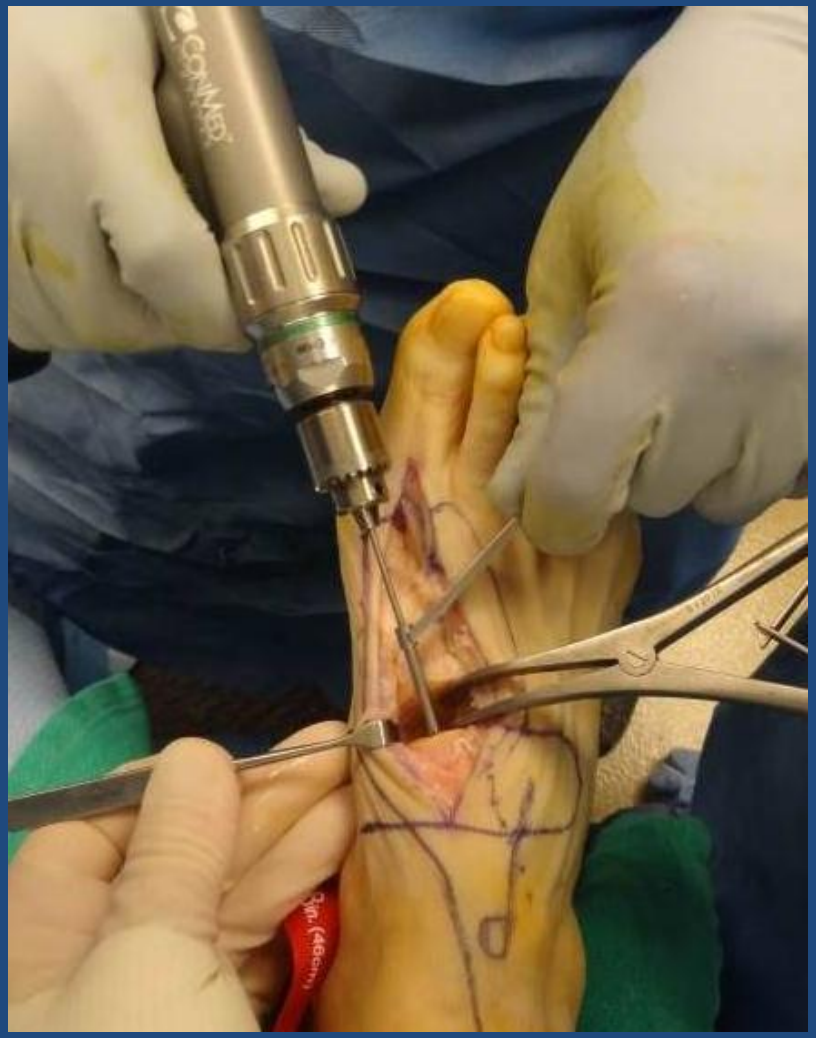
- Straight up and down
- Lateral only then medial only
- Tease plantar ligaments with osteotome
- Avoid bleeding from plantar or lateral

Prep Surface to Remove Subchondral Bone Plate

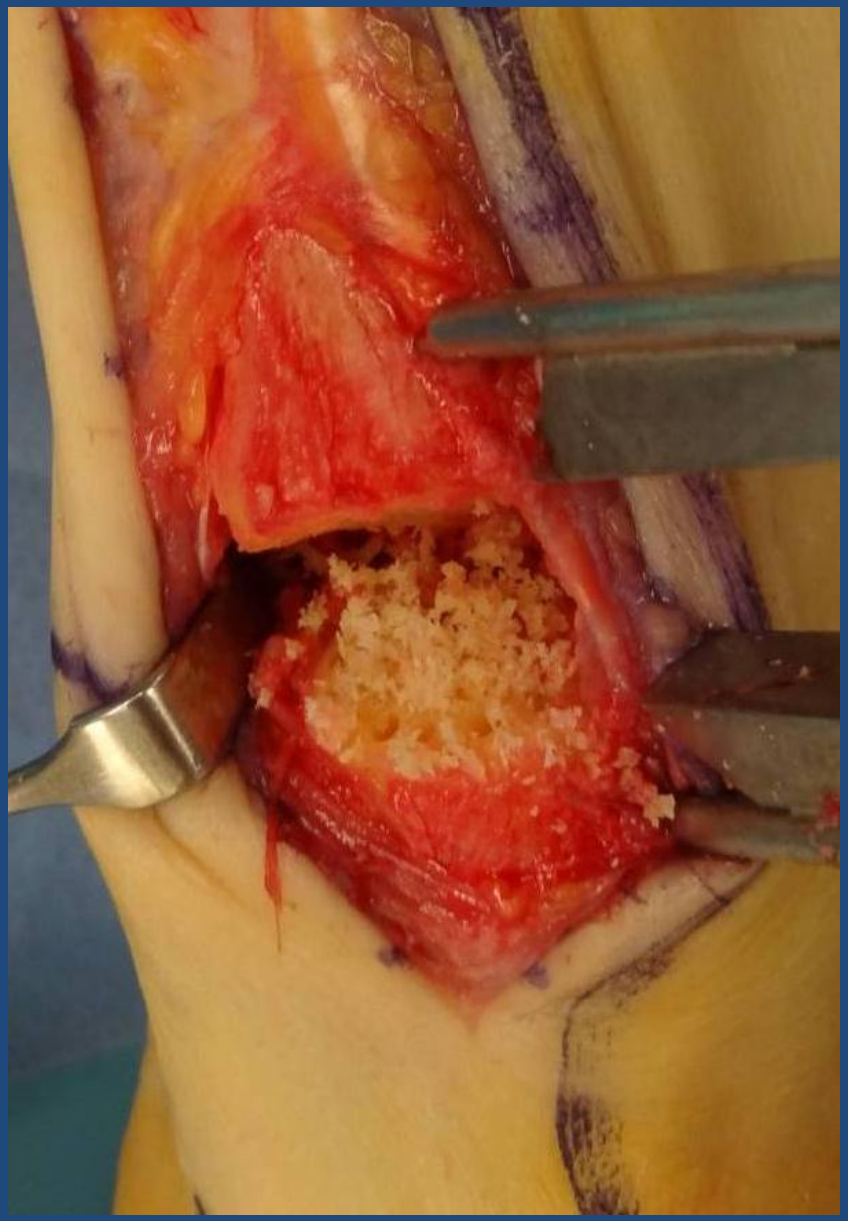
Final Suction Before Drilling



Subchondral Drilling (2.0 mm drill bit vs. k-wire?)



Document Use of Autograft



Mark Distal Screw Starting Point at 2 cm

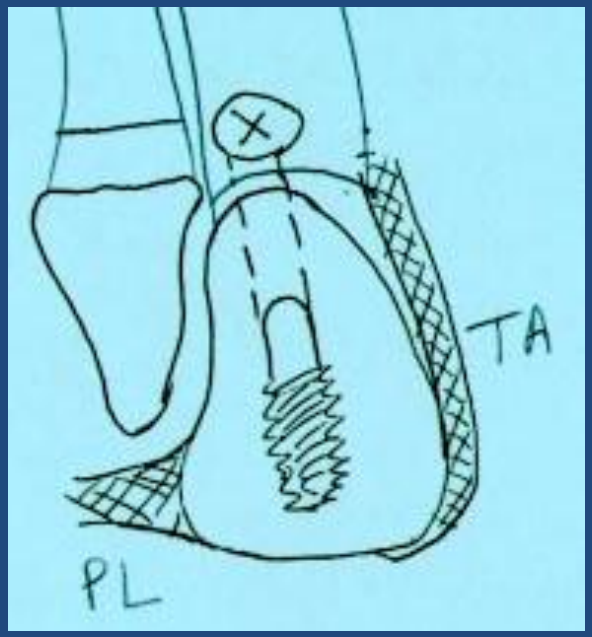
Create Trough for Acute Angle Guide Pin

Temporary Fixation

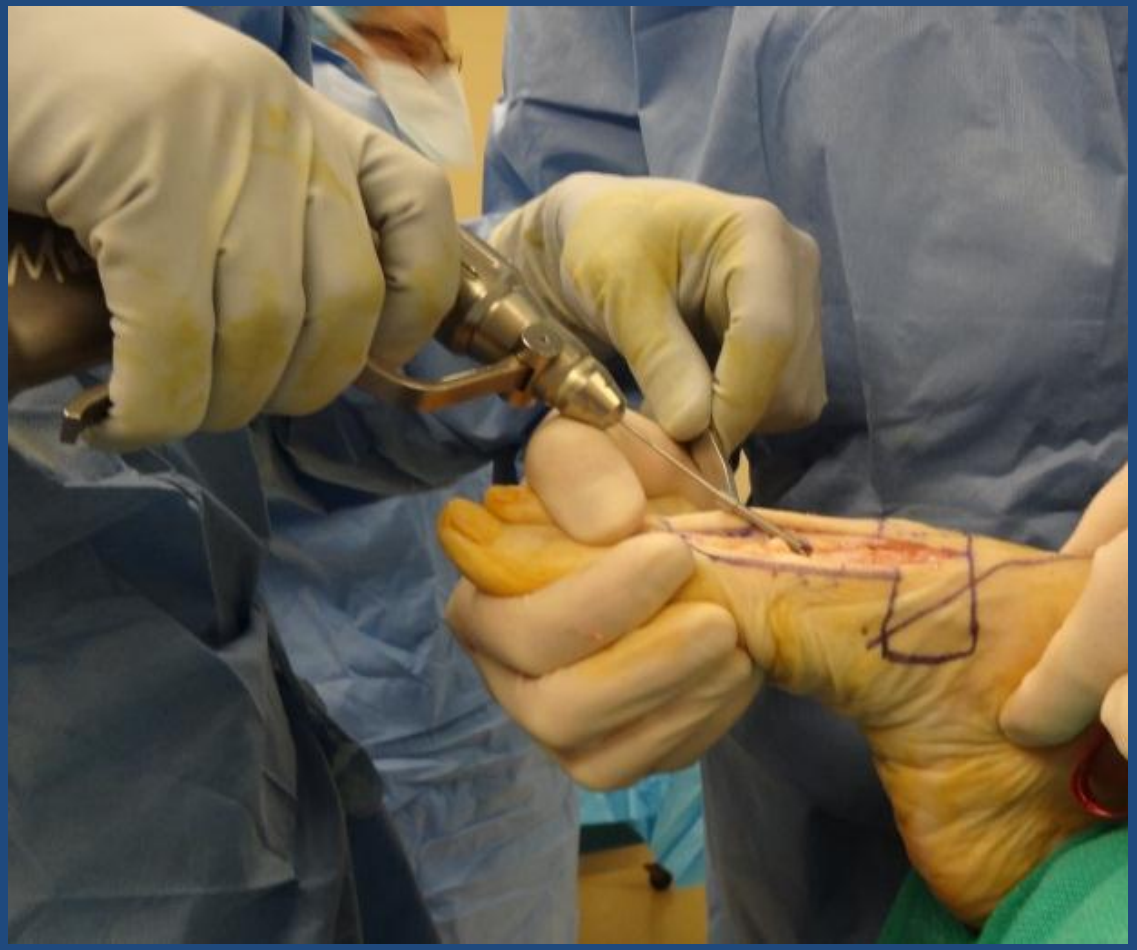
- Close to toe?

1st Pin Pearls (inline with 2nd met)

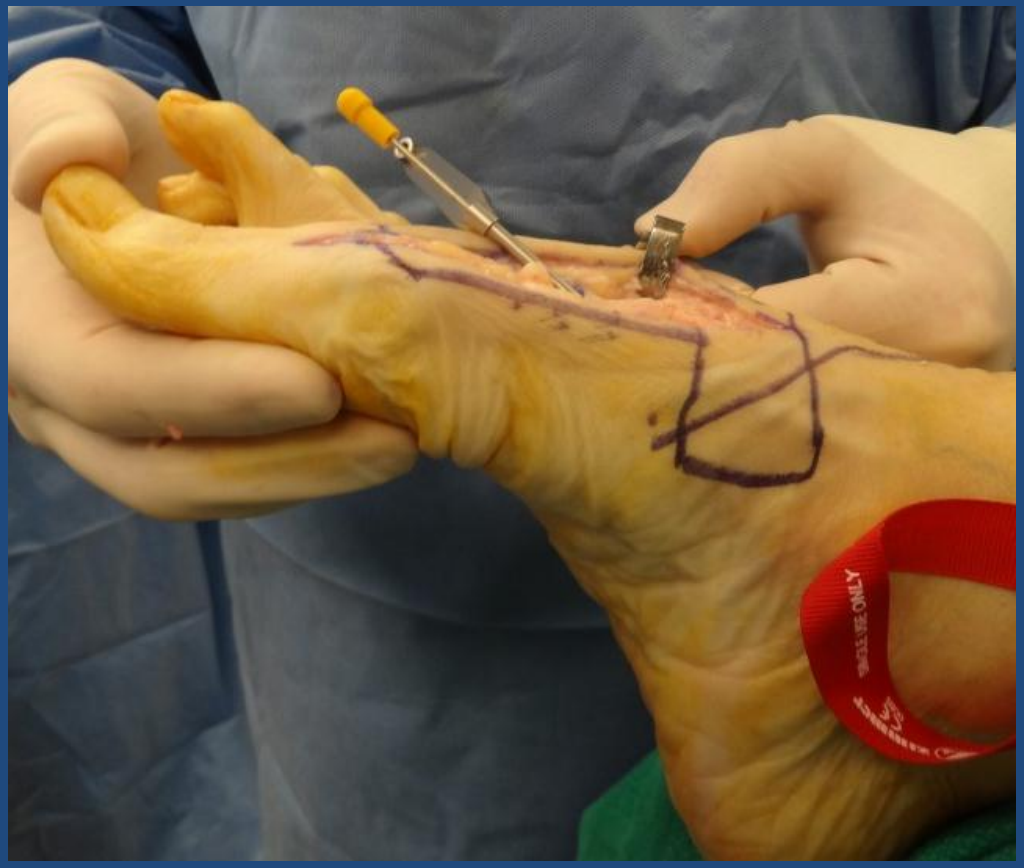
Aim Medial (wide bottom of medial cuneiform)



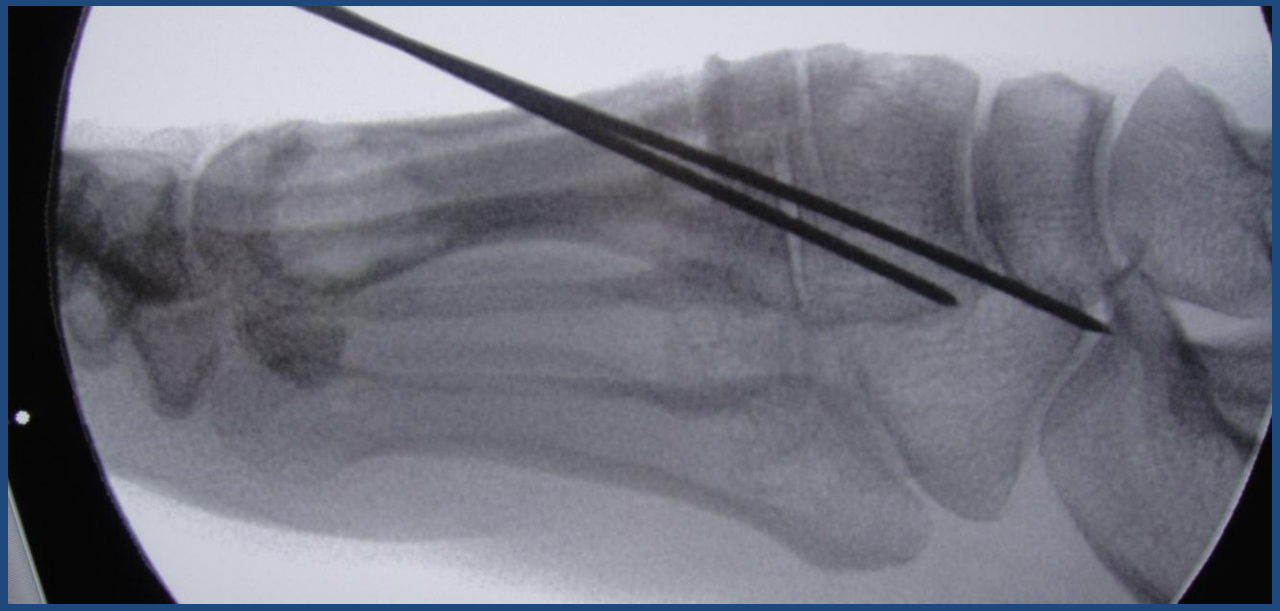
Aim at Bottom of Navicular Tuberosity



Angle of Pin (What is too far medial?)



1st and 2nd Metatarsal Alignment



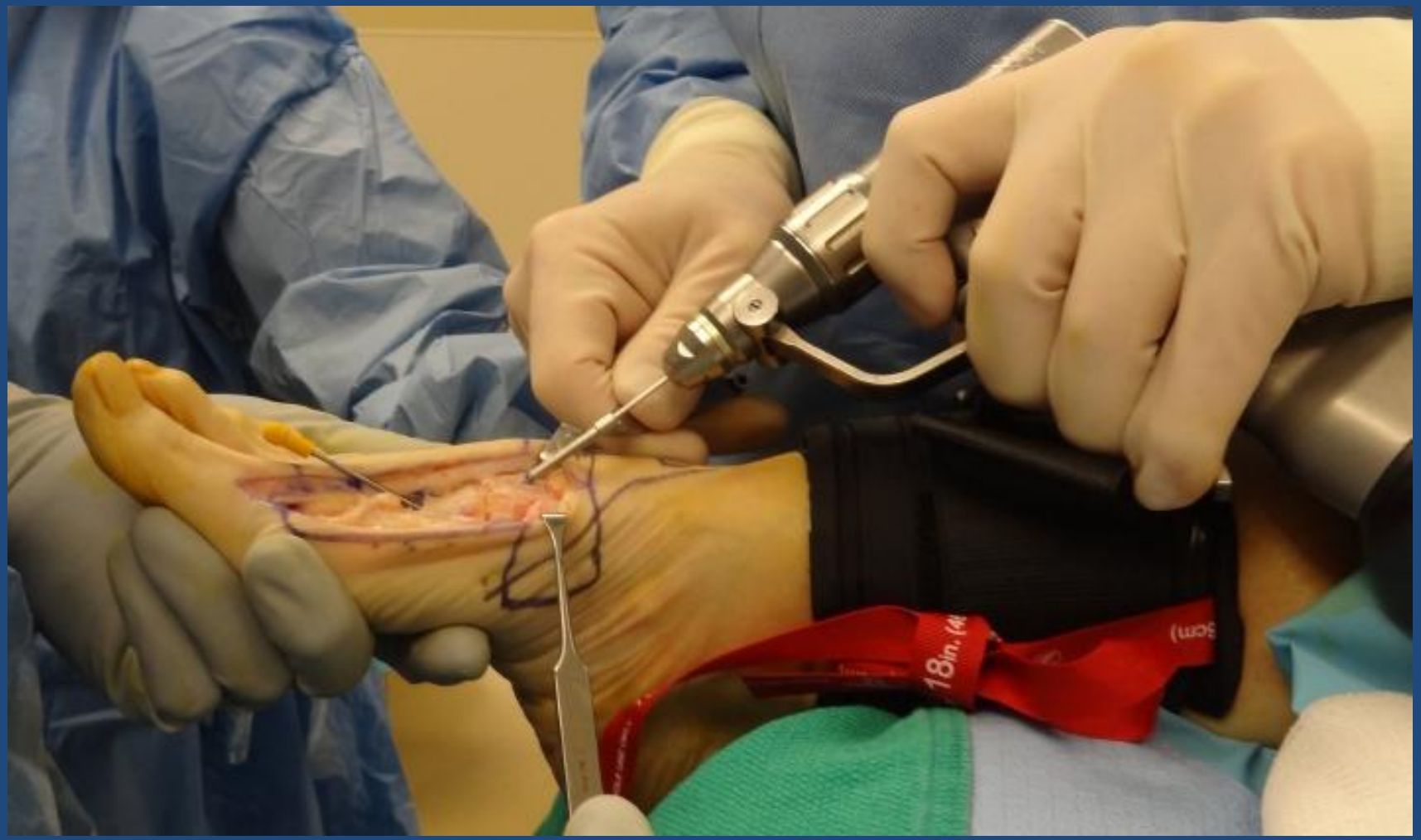
2nd Pin Inline with 1st Metatarsal

Medial and Lateral Compression

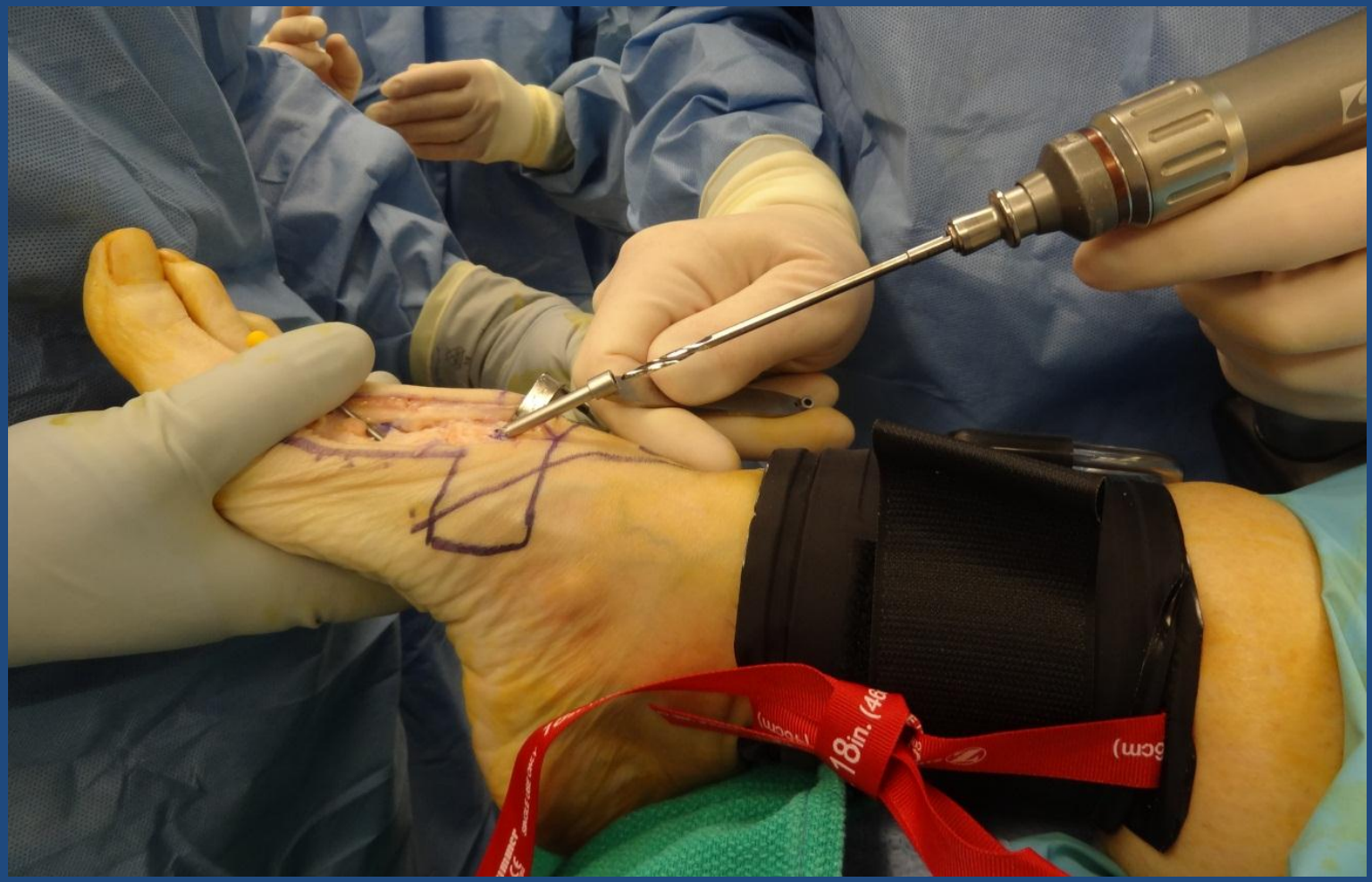
Value of 0.062” k-wires vs. guide pins?

Starting Point of 2nd Pin

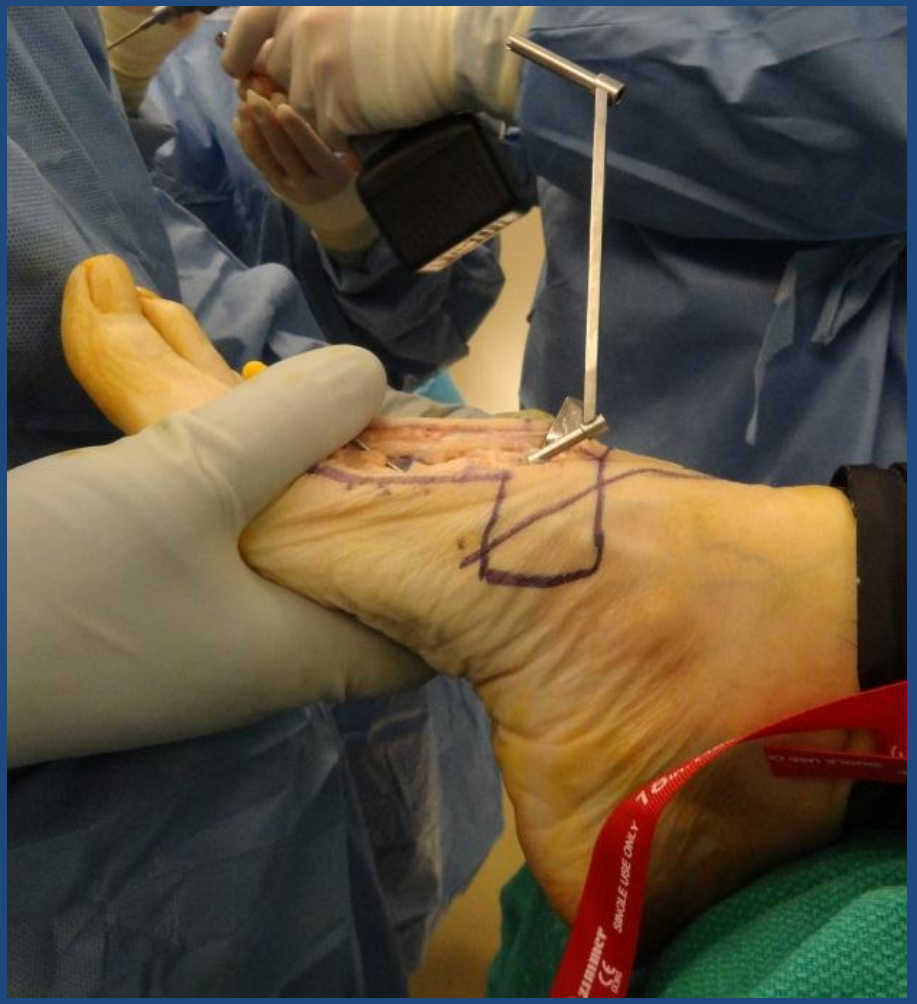
Angle of Insertion (touching the tourniquet)



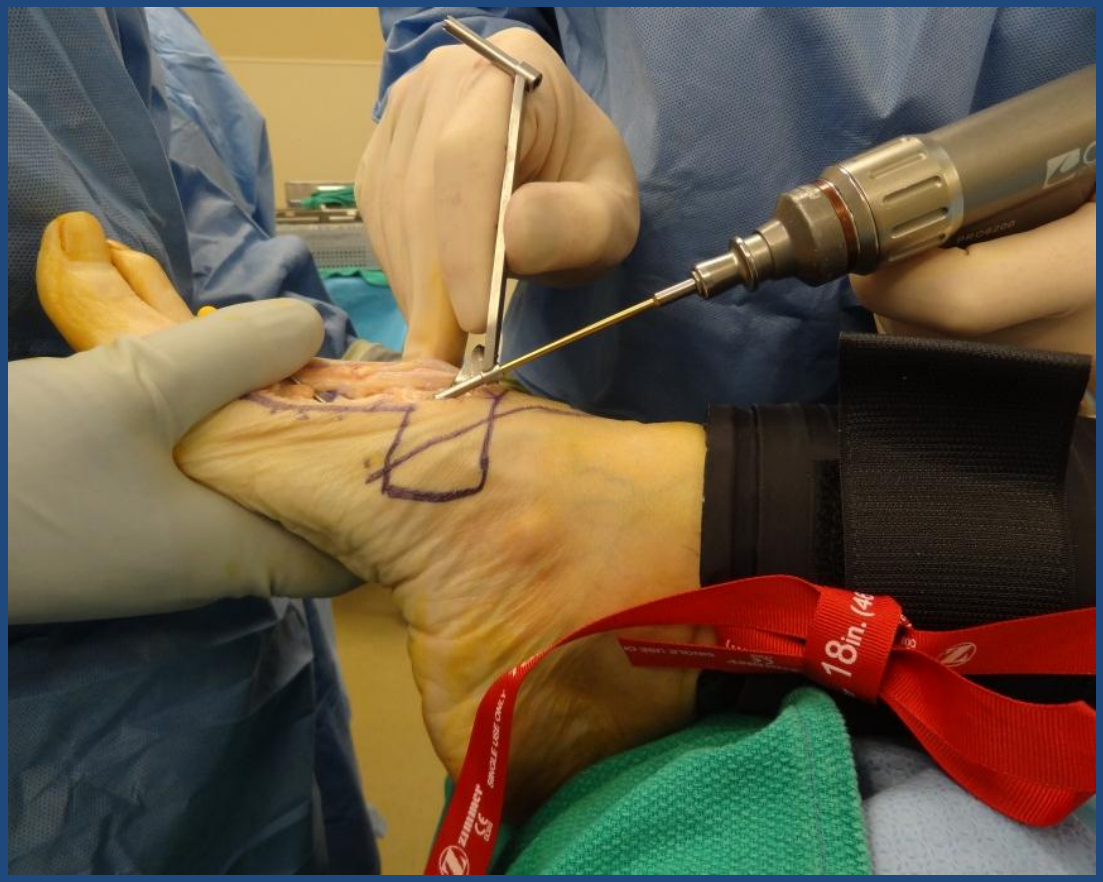
3.5 mm Drill for Near Cortex



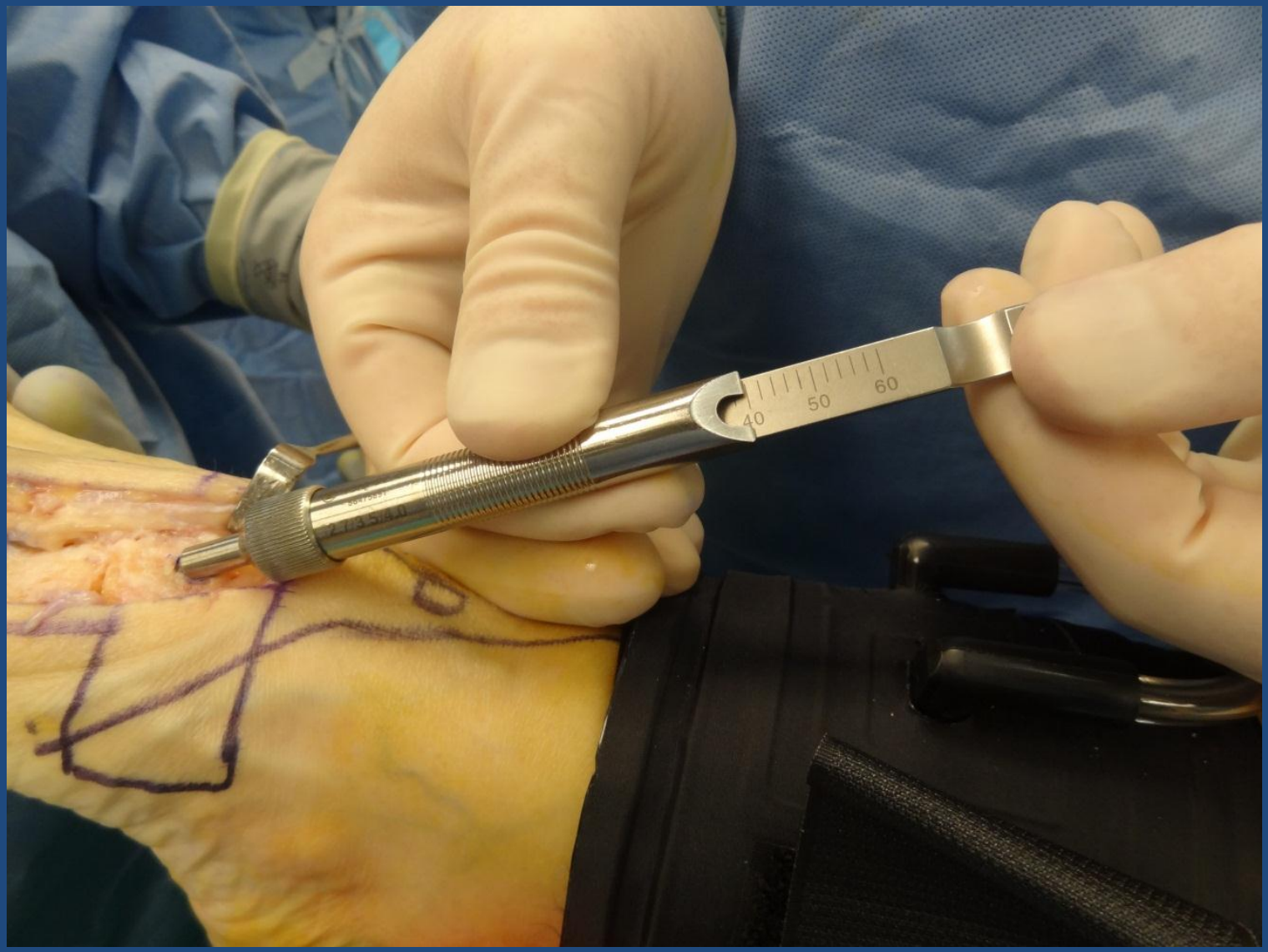
Use Top Hat or 2.5 mm Drill Sleeve



2.5 mm Drill to Far Cortex

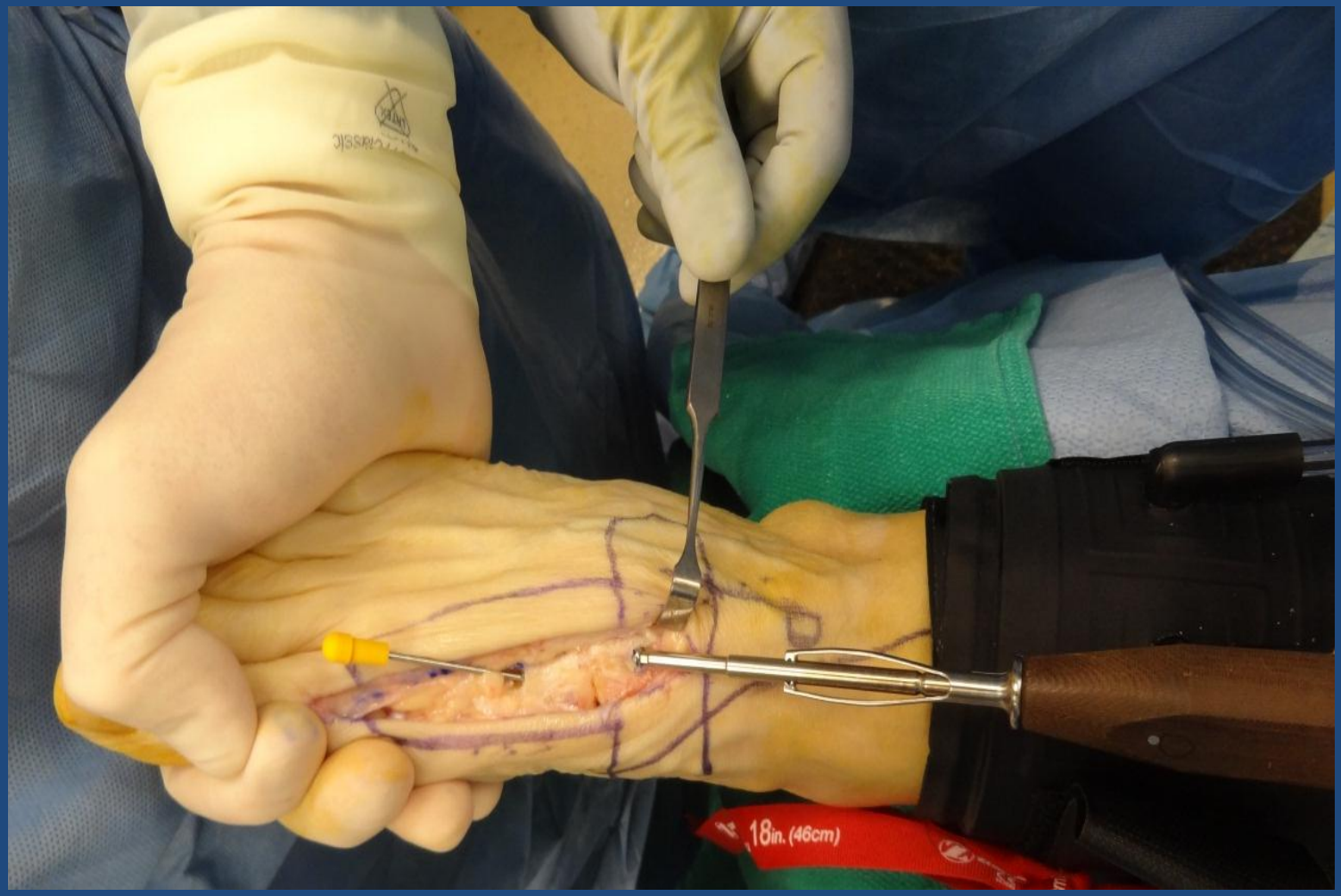


How long? (32-40mm)



Insert 3.5 mm Screw on Power

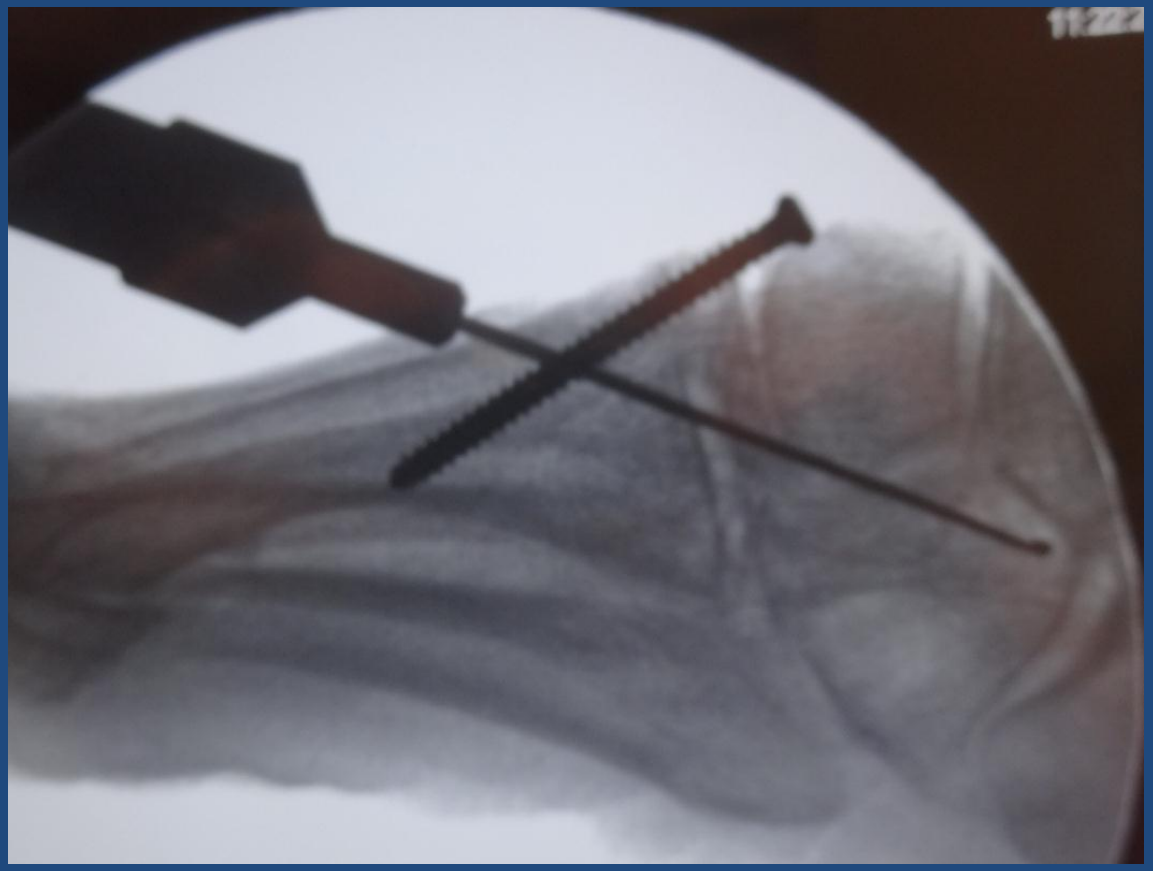
Compress Fusion Site & Tighten Screw

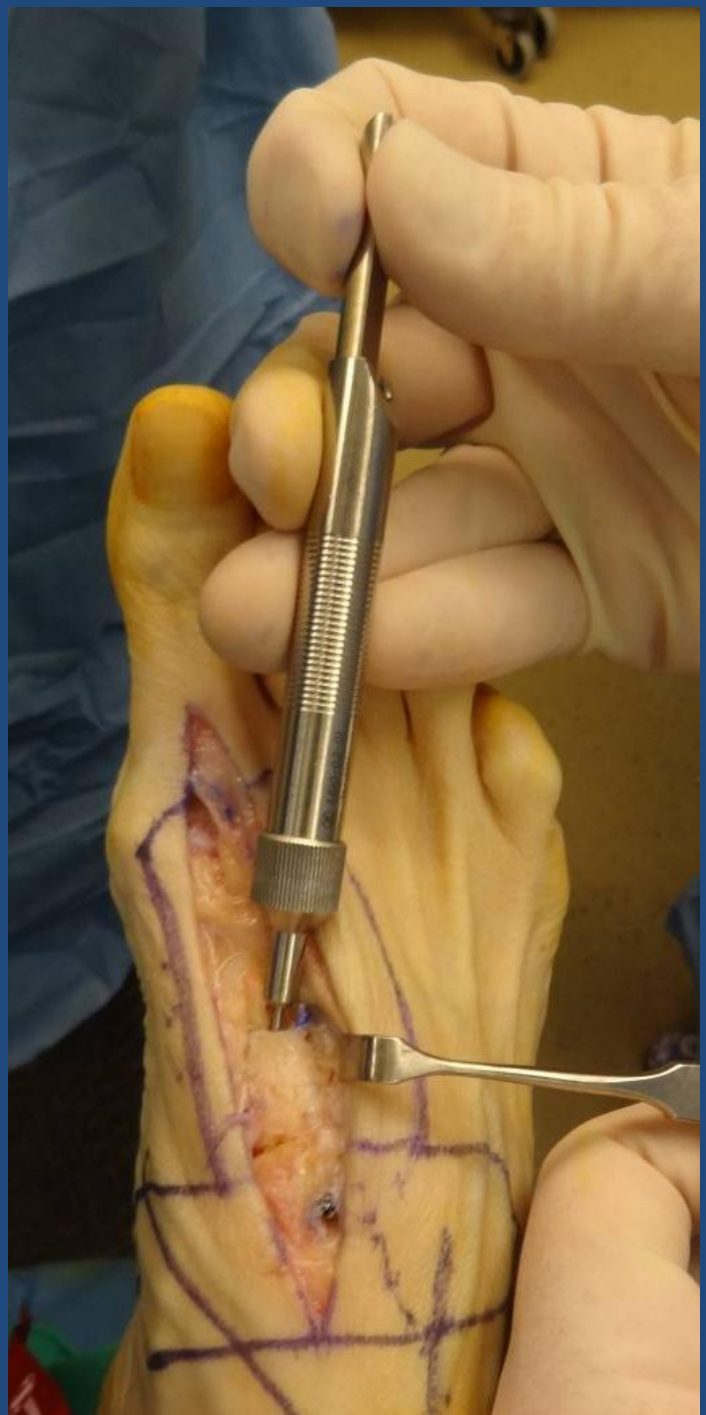


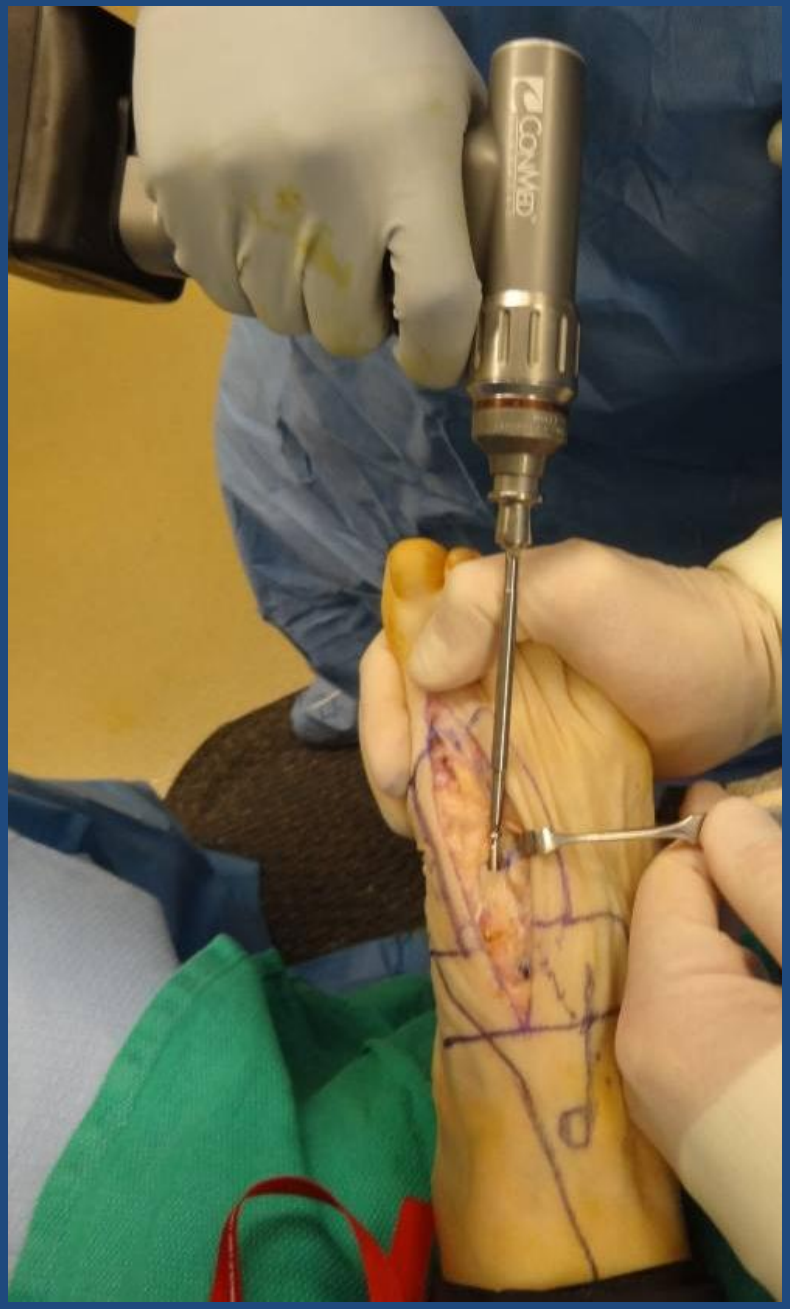
Concern about medial gap?

Drill 50 mm to Far Cortex (feel for far cortex)

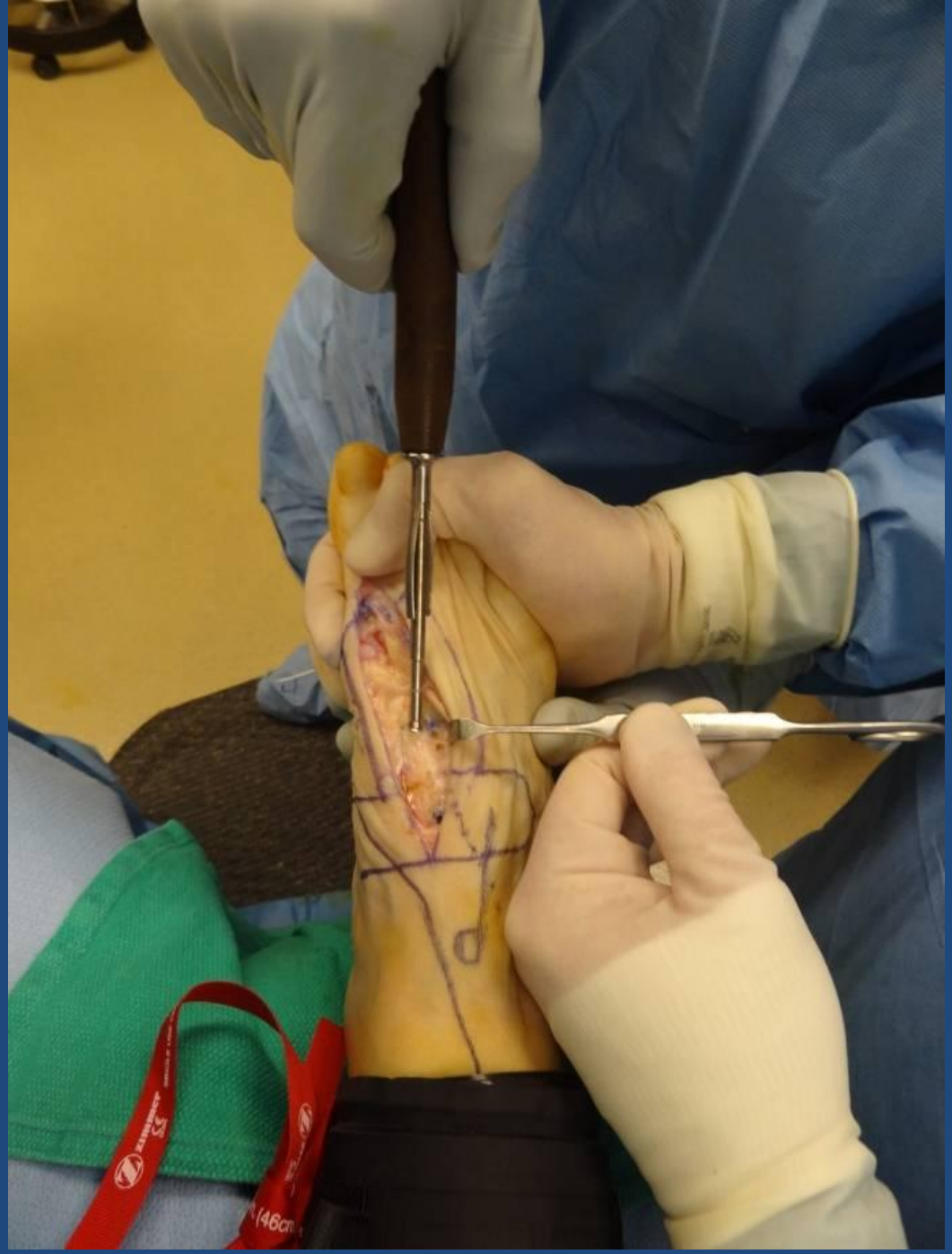
Depth Gauge (50 mm to far cortex, hook toward heel)







Insert 3.5 mm Cortical Screw



Final Tightening By Hand

Screw Considerations

- Why solid screws? (cortical screws, stronger)
- Low and high, medial and lateral compression

Stainless Steel vs. Titanium

Titanium

- Less allergic response
- Superior tissue and bone adhesion
- Both lead to decreased chance of infection
- Ideal for permanent fixation
- Modulus of elasticity similar to cortical bone

Stainless Steel

- Greater tensile strength
- Greater resistance to load-bearing stress
- Longer fatigue failure rate over time

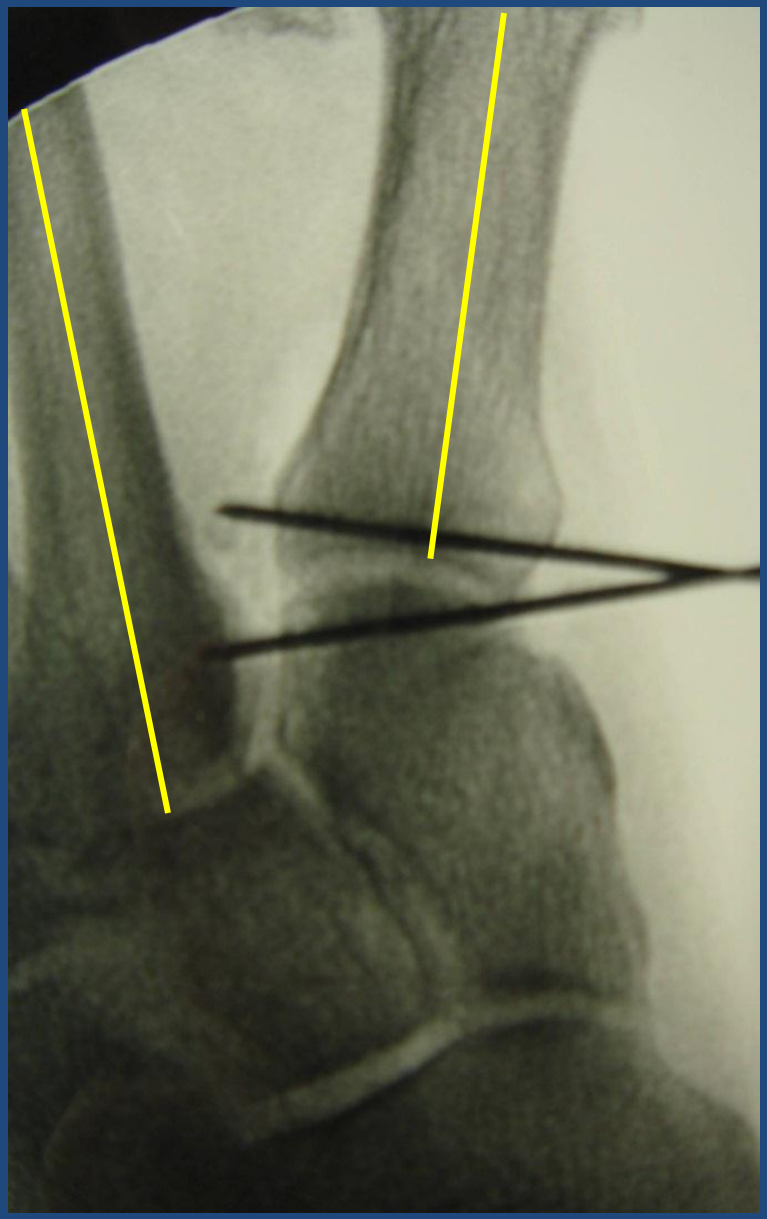
Perren, Orthopedics 1989

Disegi, Orthopedics 1989

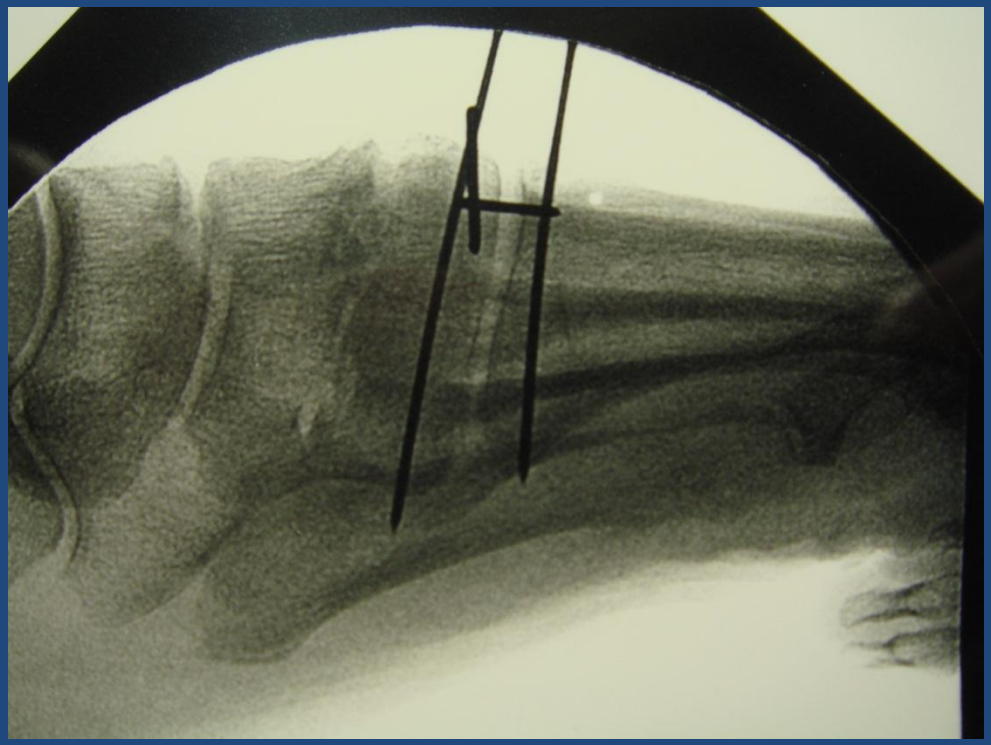
Who needs a plate?

- Early WB
- Time and cost
- Higher risk of HWR

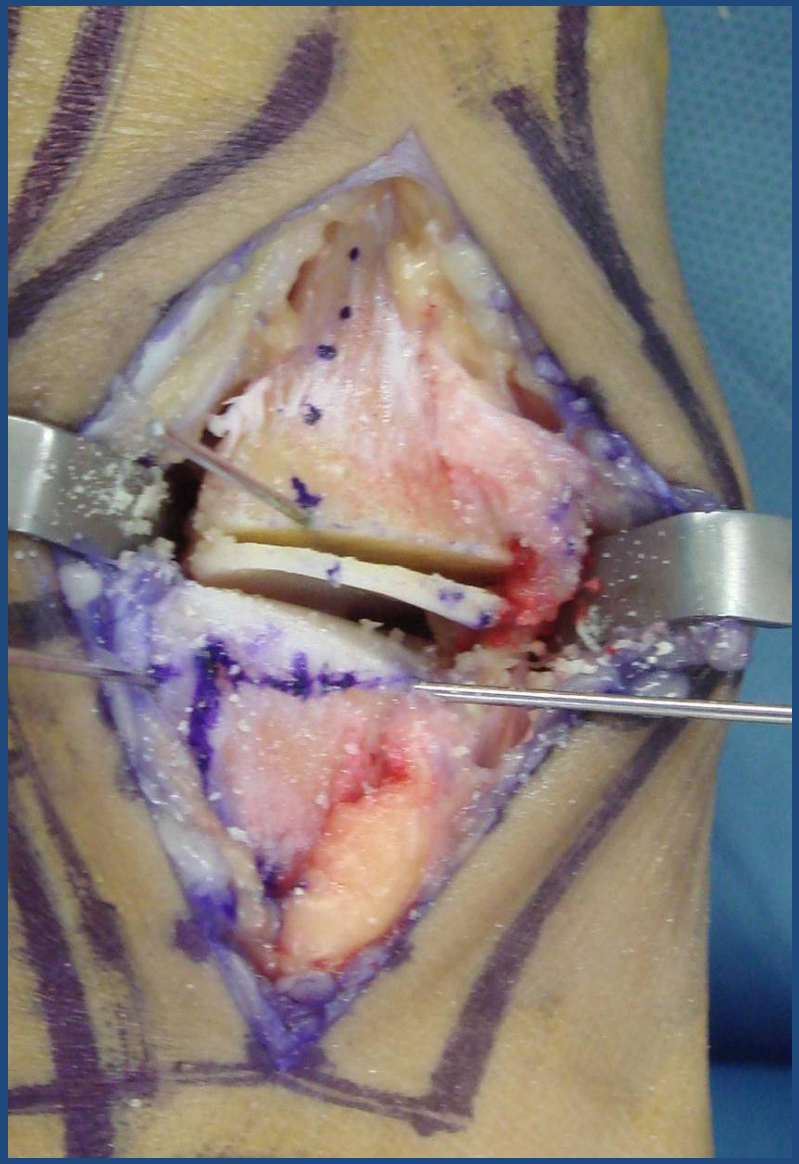
Wedge Resection Pearls

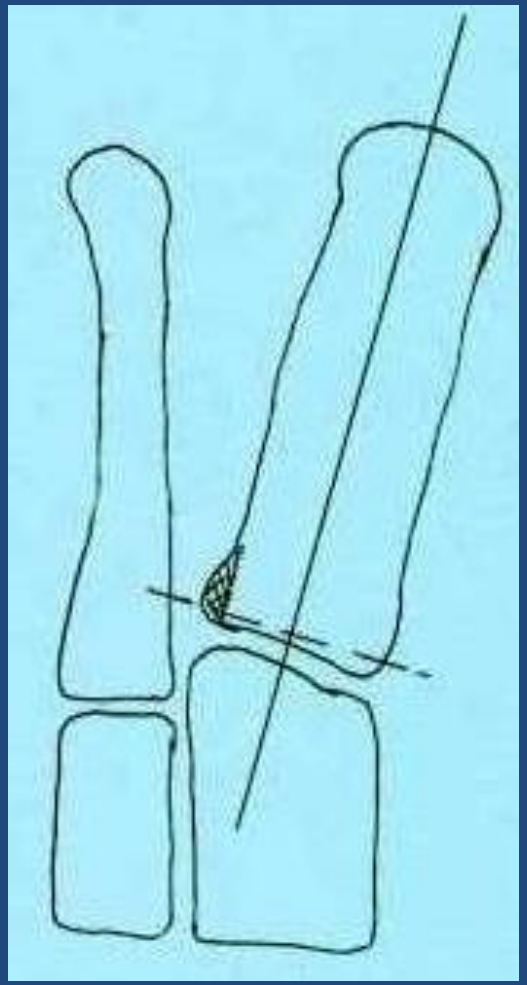


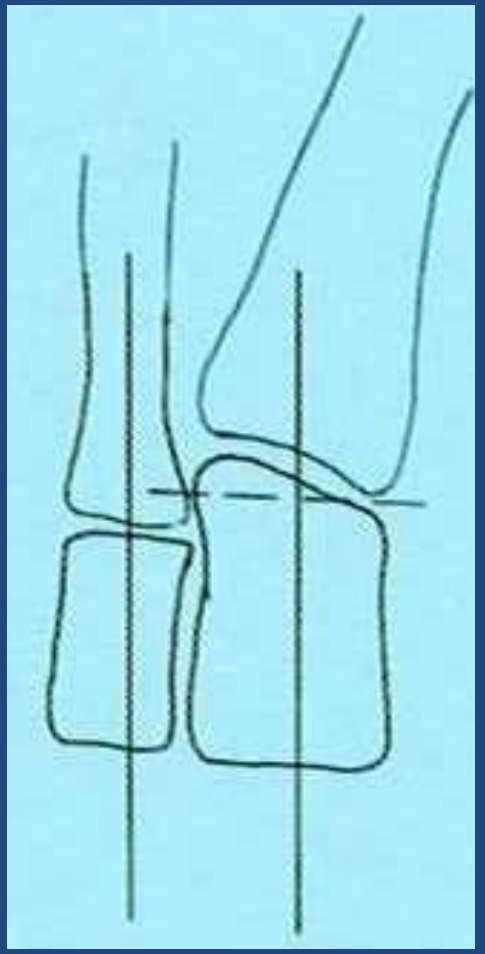
- Guide pin technique
- Cuneiform wedge osteotomy
- Expect shortening



Lapidus Osteotomy Pearls

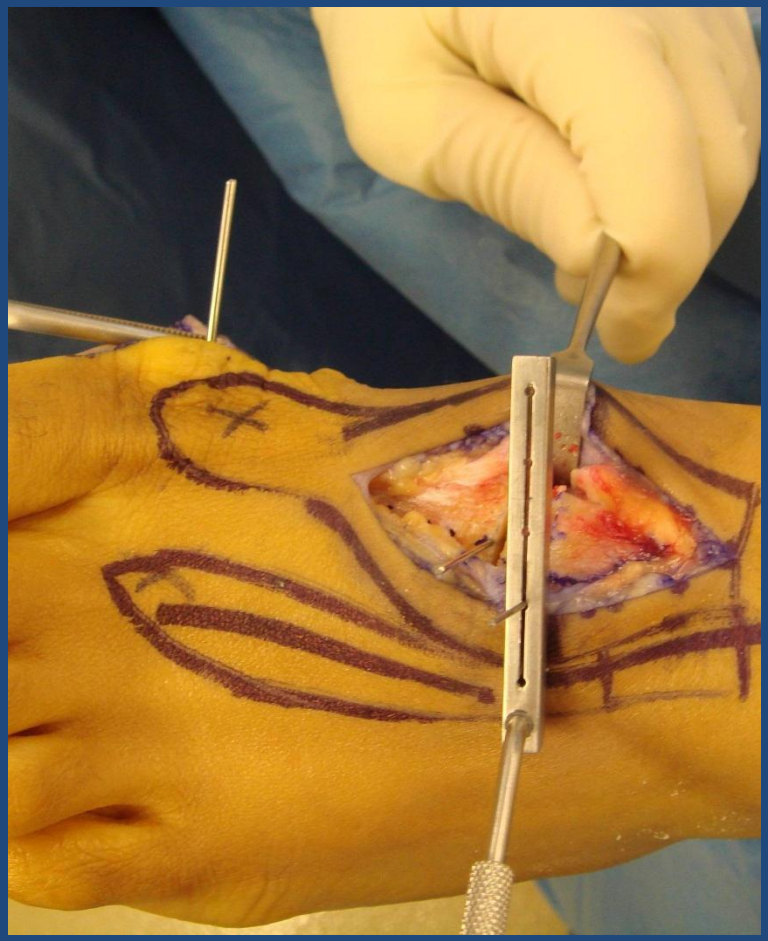




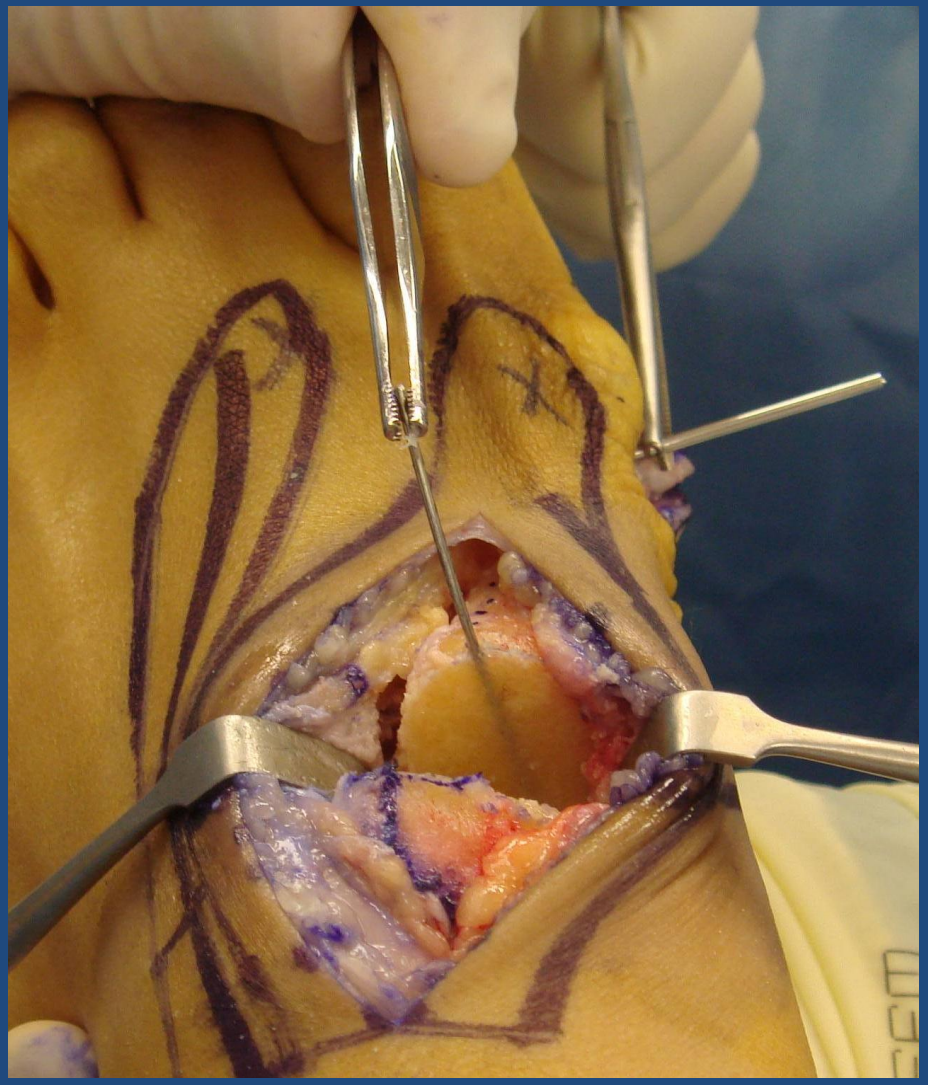


Start with Medial to Lateral Transverse Wedge Resection

Finish Dorsal to Plantar with Long Blade



Follow Pins to Bottom of Joint



Comments / Questions?

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