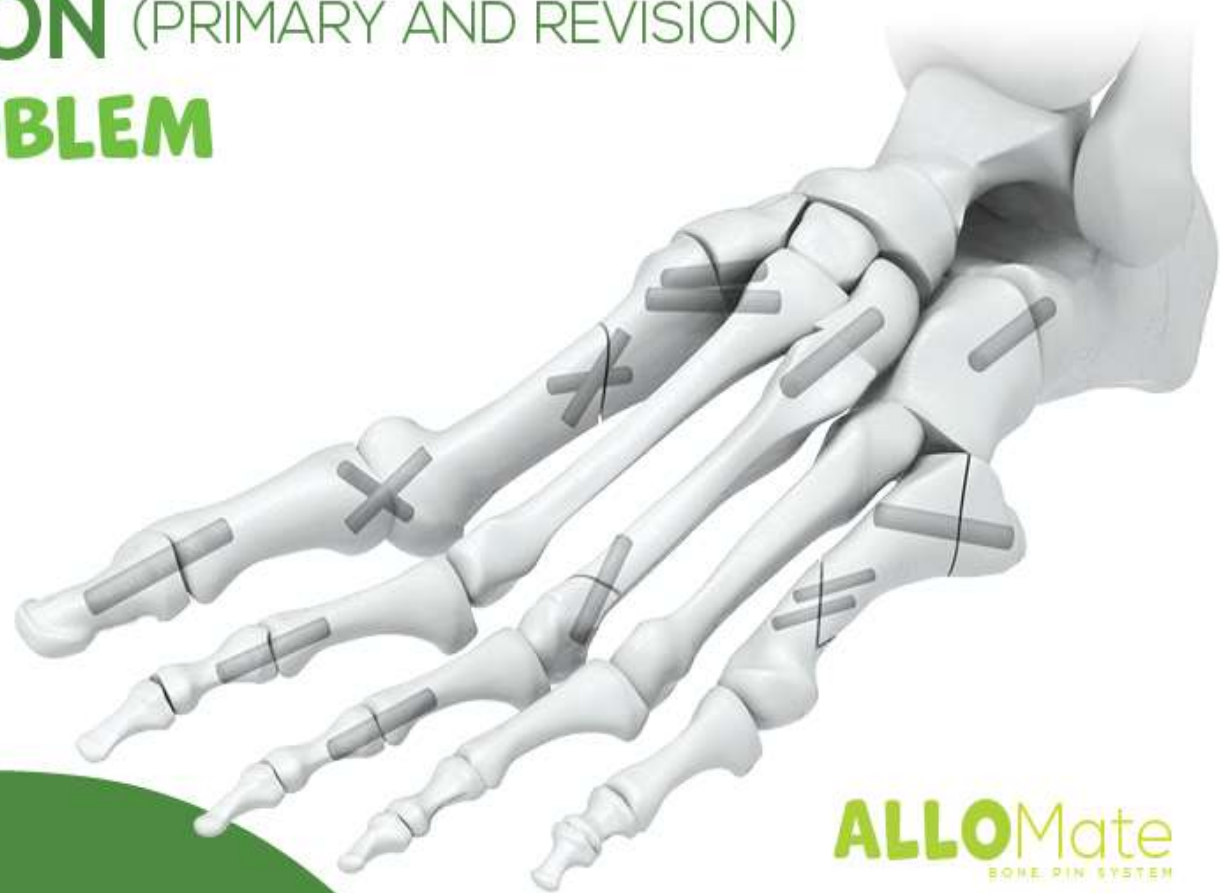


EDUCATIONAL WEBINAR

NOVEL APPROACH TO FOREFOOT RECONSTRUCTION (PRIMARY AND REVISION) NO METAL, NO PROBLEM



Presented by
Dr. Dan Schulman, DPM



ALLOMate
BONE PIN SYSTEM

Novel Approach To Forefoot Reconstruction (Primary & Revision): *No Metal, No Problem*

Daniel S. Schulman, DPM, FACFAS
Comprehensive Integrated Care
Phoenix, Arizona





Disclaimer:

Consultant/Developer for
WishBone Medical, Inc. and its
affiliates

Bone Graft Indications/Uses:

- **Assist in healing fractures, delayed unions or non-unions**
- **Assist in joint fusions**
- **Replace bone defects from trauma or tumor**
- **Act as a viable implant alternative for osteotomy and/or fracture fixation**

MAJOR CONSIDERATIONS:

- Thickness
- Elastic Modulus
- Decomposition Rate



Benefits:

- Eliminates the risk of reaction to polymers or metals (e.g. osteolysis, metallosis)
- Eliminates the risk of pin-tract infection and implant migration
- Eliminates the need for a secondary hardware removal procedure
- Pin length is customized to each patients' individual needs



Use of Allograft Bone Implants for Osseous Fixation



New Concept?

Reed TM: Allofix freeze-dried cortical bone pins as an alternative to synthetic absorbable polymeric pins: A preliminary study in short Z bunionectomies, *J Foot Ankle Surg* 38:14-23, 1999

Weintraub GM, Daulat R: The Evans Osteotomy: Technique and Fixation with Cortical Bone Pin, *J Foot and Ankle Surg*, Vol. 40, Number 1, January/February 2001

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AlloMate Bone Pin System

WHAT IT IS....

One solid piece of human bone allograft in a dowel configuration

Processed from cortical ring from human femur and tibia

Cortical bone – high compression strength

Accredited Tissue Bank – Aseptic Processing + Sterile R

WHAT IT ISN'T....

a bio-engineered allograft

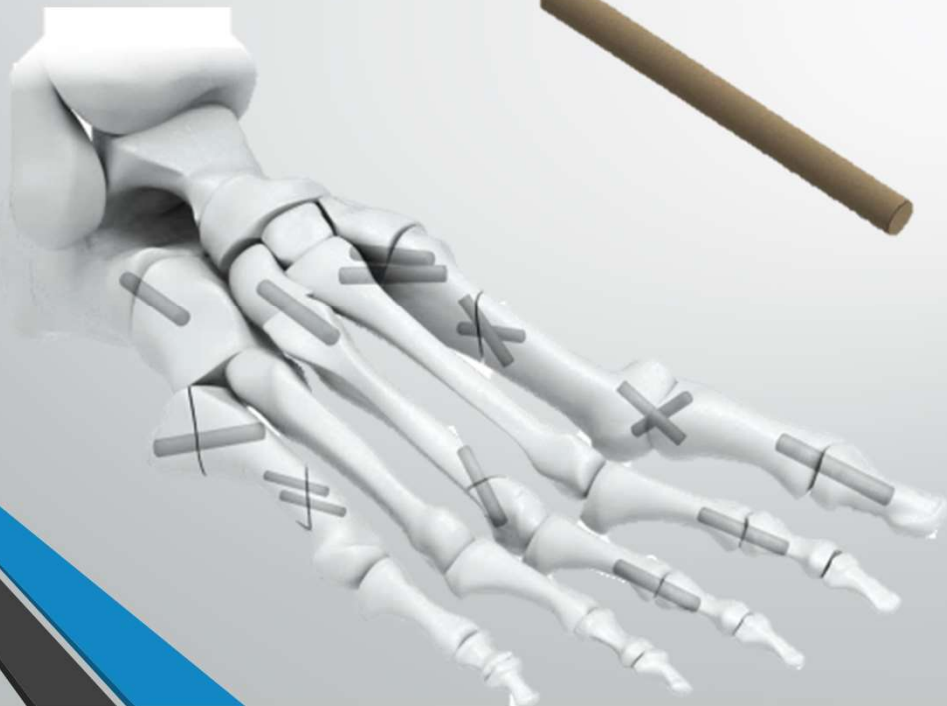
Rationale & Science: The AlloMate Bone Pin System

"The most logical way to closely mimic the physiological bone healing process while also stabilizing the osseous construct in a safe, reproducible and cost-effective manner."

- Integrates via a well-known process of "creeping substitution"
- Alternative to metal, PEEK, and resorbable devices
- Can be easily identified on x-ray studies

ALLOMate

BONE PIN SYSTEM



PIN DIAMETERS

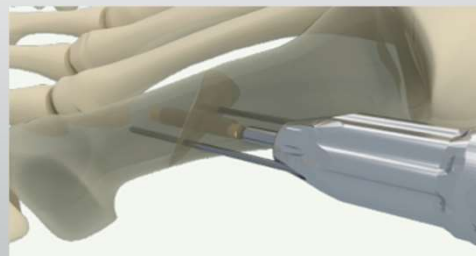
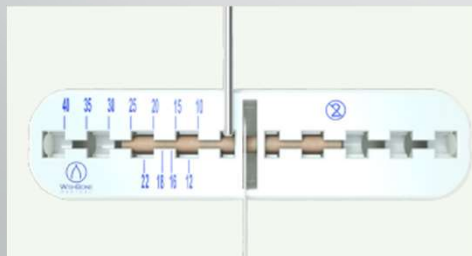
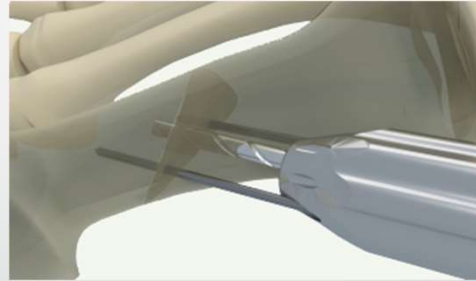
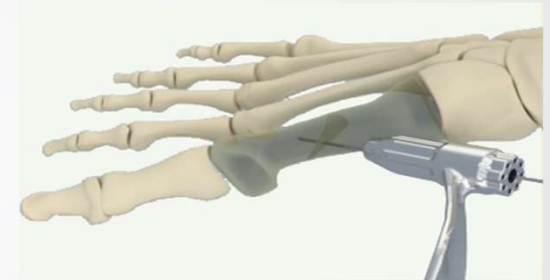
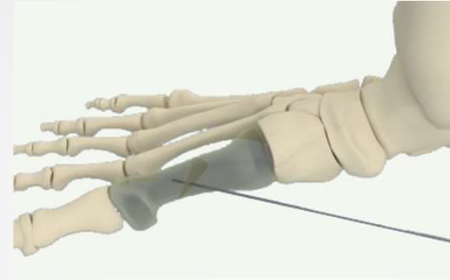
- 2.0mm
- 2.5mm
- 3.0mm
- 3.5mm
- 4.0mm



Indications for the Foot & Ankle

- Digital deformities (hammertoe)
- Bunion
 - Austin
 - Akin
 - Lapidus
 - Tailor's Bunionectomy
- Weil Osteotomy
- Trauma
 - 5th Metatarsal Fractures,
 - Medial Malleolar Fractures
 - Calcaneal Fractures
 - Loose OCD Lesions
- Freiberg's Disease
- Pediatric Flatfoot Correction
 - Medial Calcaneal Slide Osteotomy
 - Evans procedure

Surgical Technique Overview



Left Foot Hammertoe Repair



Left Foot Hammertoe Repair

1 week post-operative



Left Foot Hammertoe Repair

13 months post-operative



Tailor's Bunion with Fifth Digit Hammertoe



Tailor's Bunionectomy with Fifth Digit Hammertoe Repair – One Week P.O.



Tailor's Bunionectomy with Fifth Digit Hammertoe Repair – Six Week P.O.



Left Foot Bunion and an Elevated/Long First Metatarsal with Hallux Limitus



Left Foot Bunion and an Elevated/Long First Metatarsal with Hallux Limitus

1 WEEK POST-OPERATIVE



Left Foot Bunion and an Elevated/Long First Metatarsal with Hallux Limitus

7.5 MONTHS POST-OPERATIVE



First MPJ Fusion for Failed Bunionectionomy



First MPJ Fusion for Failed Bunionectionomy

5 Months Post-Op



Left Foot Bunion and Non-Reducible Cross-Over Second Digit



Left Foot Bunion and Non-Reducible Cross-Over Second Digit

6 MONTH POST-OPERATIVE

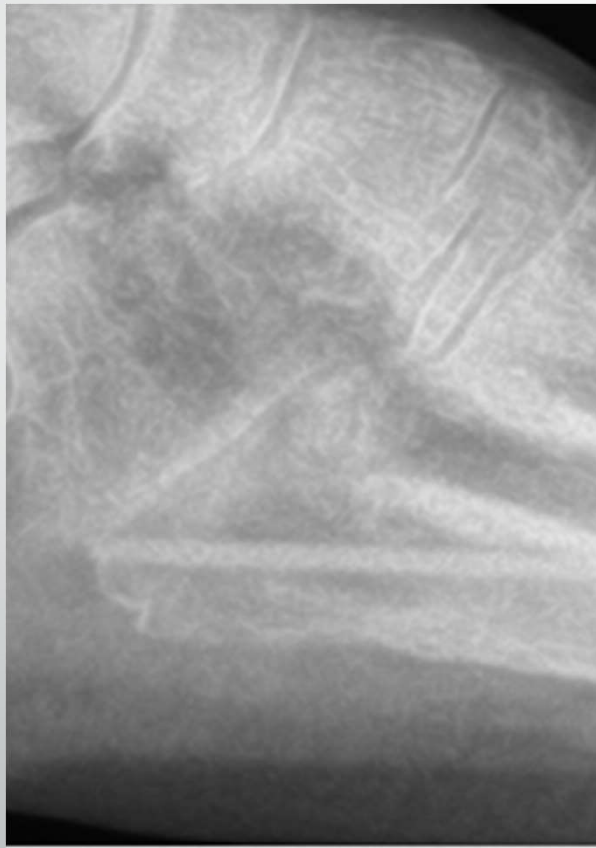


Avulsion Fracture 5th Metatarsal

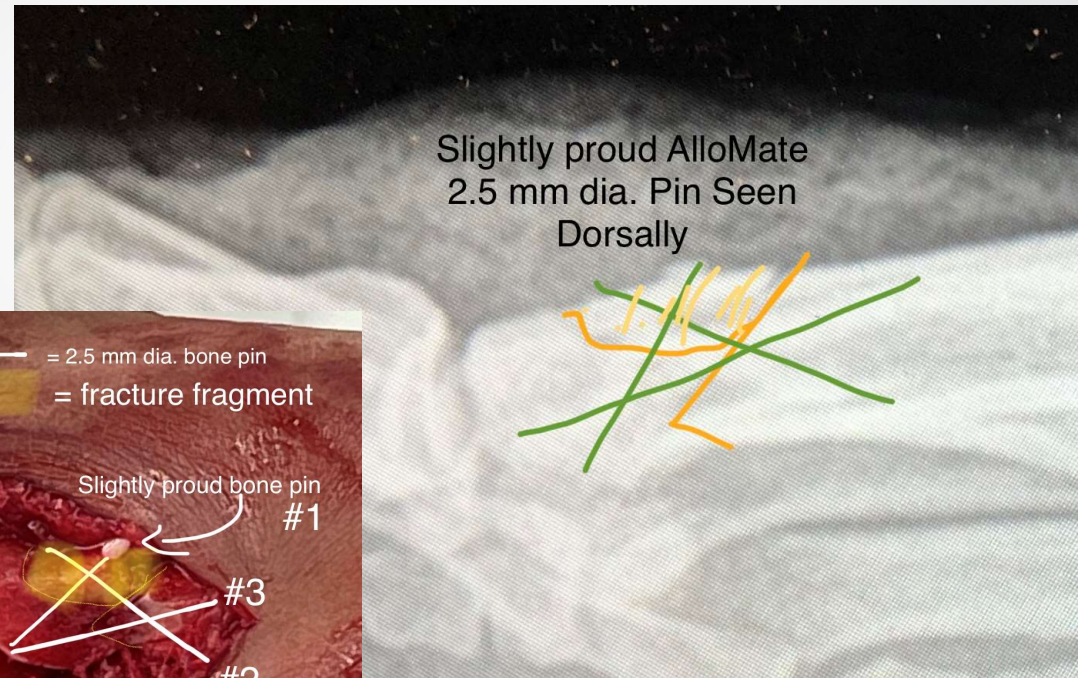


Avulsion Fracture 5th Metatarsal

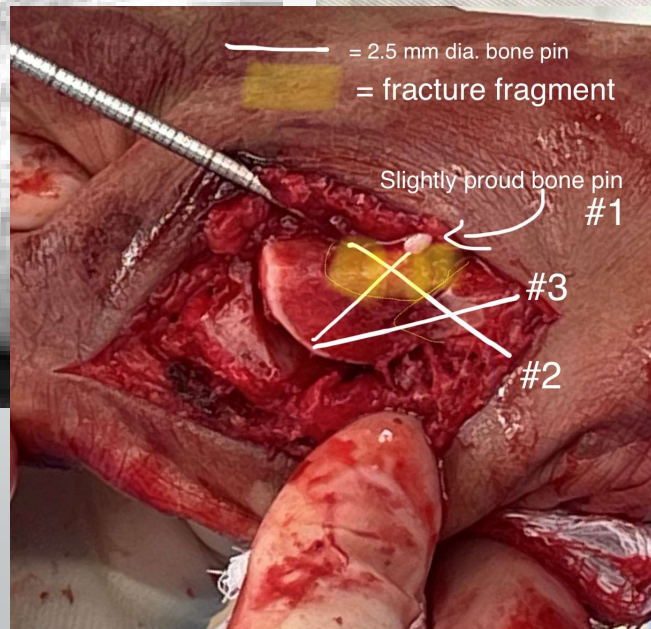
6 Weeks Post-Op



Iatrogenic Fracture of Austin/Valenti...



Slightly proud AlloMate
2.5 mm dia. Pin Seen
Dorsally



= 2.5 mm dia. bone pin
= fracture fragment

Slightly proud bone pin
#1

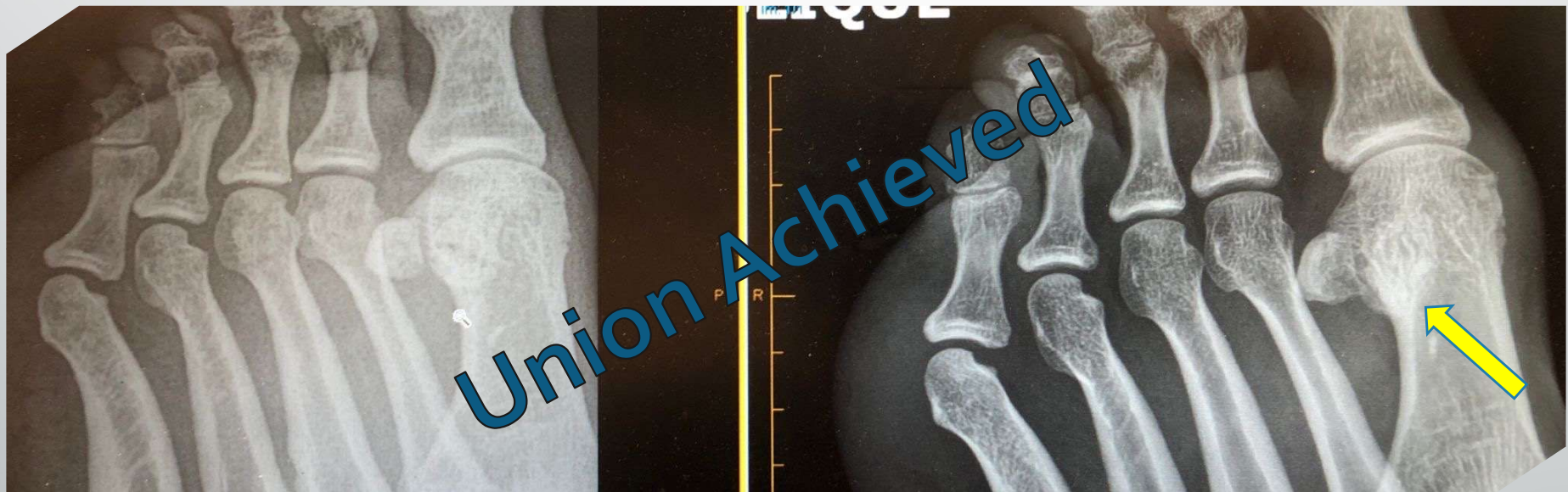
#3

#2

Non-Union Tibial Sesamoid Fracture

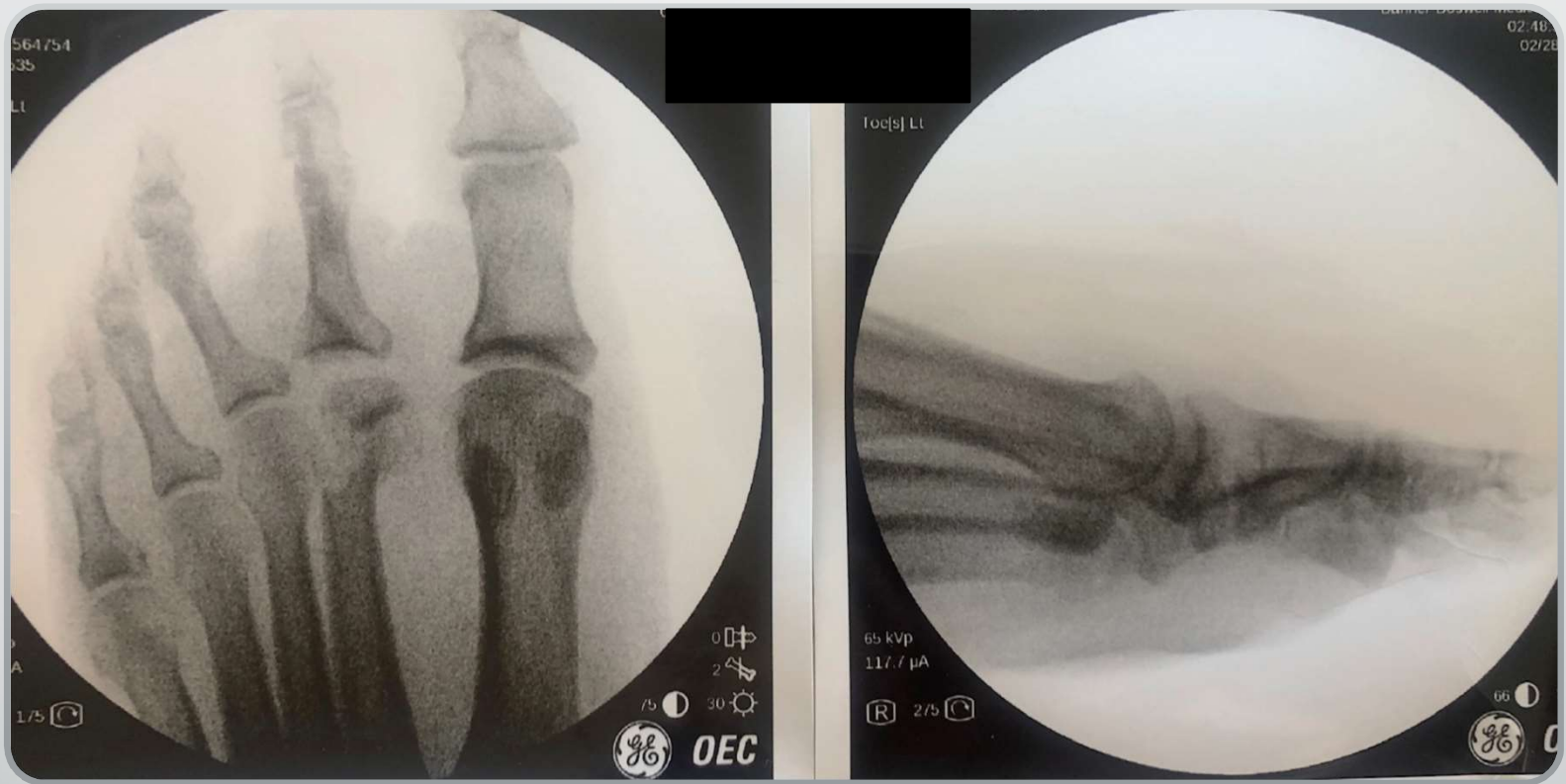


ORIF Non-Union Tibial Sesamoid Fracture



Revision with some challenges...

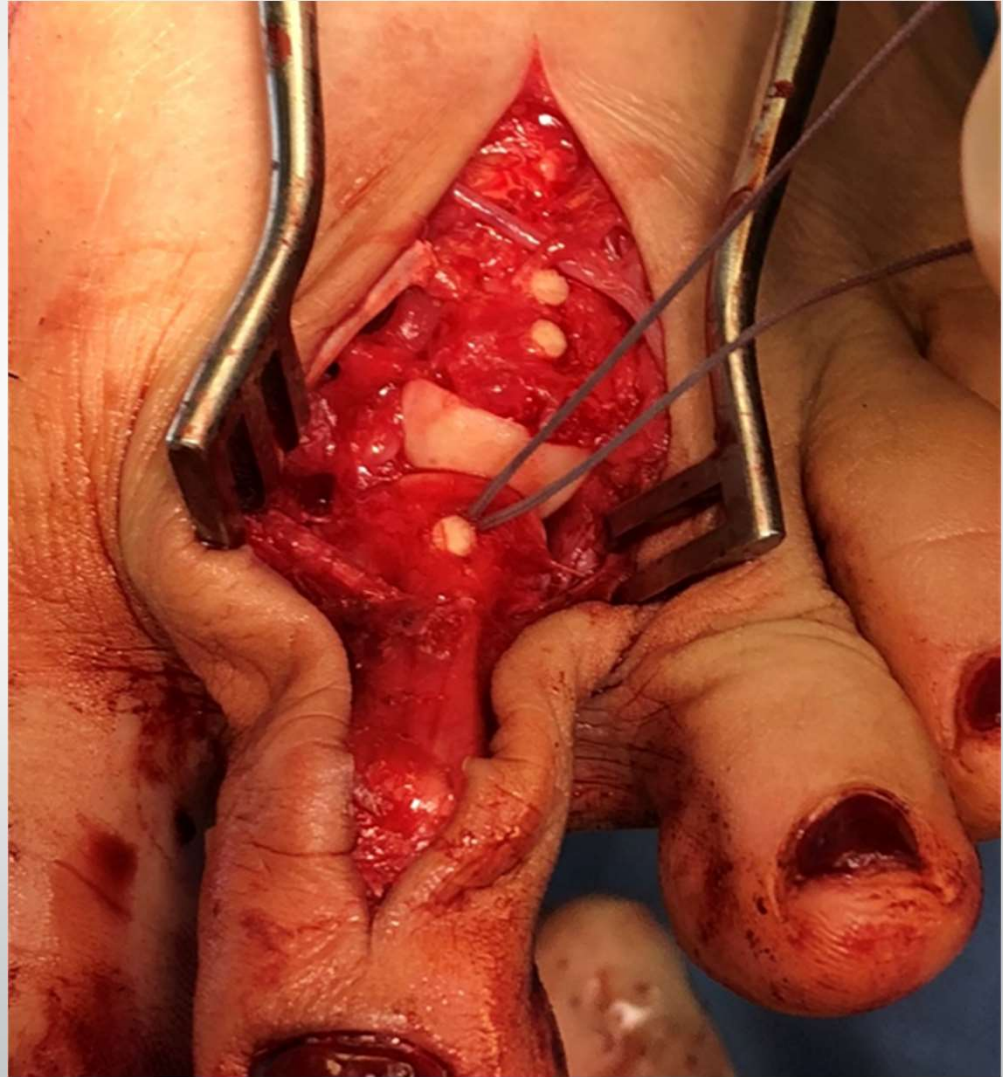
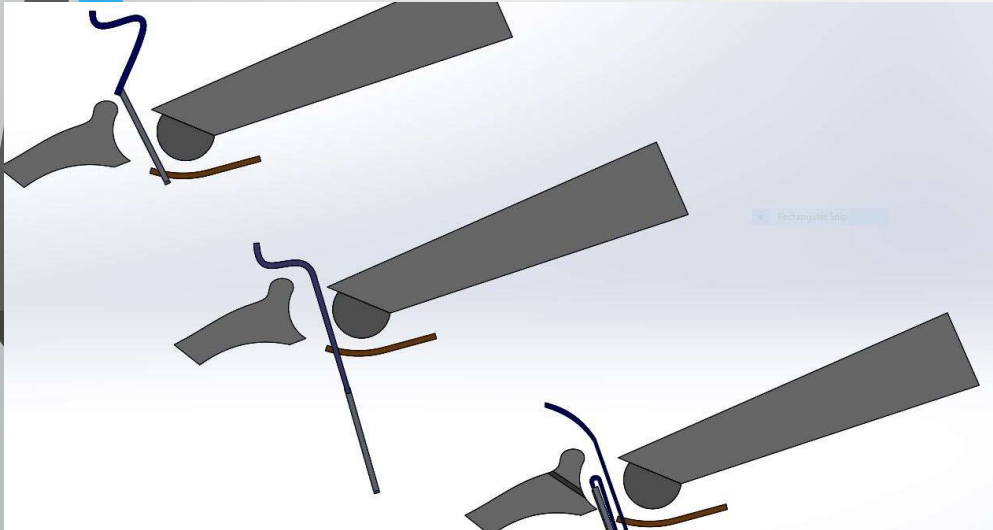
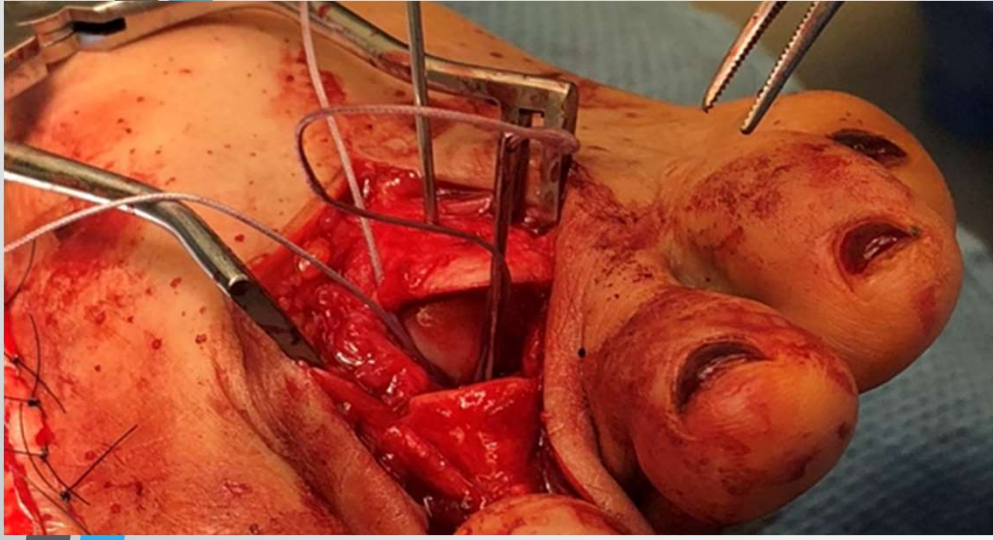




Restored 2nd Ray Function and Alignment

Three Year Postop







Revision
Accomplished





**“Putting It All Together”
for Complex Revisions**

Surgical Pearls:

REMEMBER - Stability always trumps compression.

Technique most important!

Must stabilize osteotomy before inserting allograft cortical bone implant (Don't forget the 15 min Pin Soak!)

Surgical bone remodeling and removal of necessary periosteum is performed before insertion of implant

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Kominsky SJ, Bermudez A, Bannerjee A: Using a Bone Allograft to Fixate Proximal Interphalangeal Joint Arthrodesis, *Foot & Ankle Specialist*, March 2013

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Reed TM: Allofix freeze-dried cortical bone pins as an alternative to synthetic absorbable polymeric pins: A preliminary study in short Z bunionectomies, *J Foot Ankle Surg* 38:14-23, 1999

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THANK YOU





QUESTIONS