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Foot & Ankle Symposium & Surgical Techniques

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Hallux Rigidus: 1st MTP Fusion Technique

What is the best construct ?

Disclosure

- Consultant for:
 - Extremity Medical
 - Osteomed
 - Crossroad
 - Exactech
 - BESPA Global
- Reviewer for :
 - JBJS American
 - JAAOS
 - Foot Ankle International

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The Problem



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The Solution



The Approach



Approach



- Release all capsular attachments to metatarsal
- Collateral ligaments
- Sesamoid ligaments
- Plantar plate
- Allow surgeon freedom to place toe where desired



Joint Preparation: powered



- Avoid soft tissue
- Must use guide wire
- Guide wire must be centered



Joint Preparation: Manual



- Manual debridement
- Rongeur head to cancellous bone
- Shape to desired configuration
- Remove cartilage & osteophytes from phalanx



Joint Preparation: Manual




- Wash out debris
- Fenestrate subchondral bone phalanx with 2.0 drill
 - Lateral only to protect lag screw purchase
- Leave reaming as graft filler




Joint Positioning

- Fusion position unique to individual
- Set so that phalangeal head off ground when standing
- Leave in slight valgus to maintain toe alignment
- Provisional fix with K wire
- The bone is deformed from normal anatomy.
 - An anatomic plate will not pick correct position




1st MTP Fixation

- Screws

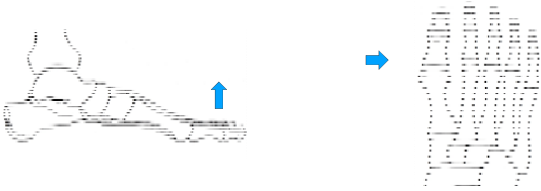


Screws and Plate



Issues with Bony Fixation

- Driven by anatomy and forces acting on the anatomy



- Implant choice impacts healing stability and post op course
- Cost of implant also plays role

Cross Screw Fixation: 4-6 weeks NWE

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Plate and screws: immediate WB

Recommend added plantar lag screw to reinforce plate

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Technique tip

- Be careful of compression holes in plate
- Leave position wire in place if you can

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Technique tip: plate



- For best fit contour dorsal bone surface to fit chosen plate
- Nearly all plates will need bending to get anatomy correct
- Prebent plates are for normal anatomy and will rarely be correct



Post op Protocol



- Place in weight bearing cast
 - Ankle dorsiflexed
 - Cast beyond toes to prevent weight bearing past metatarsal heads
- Short removeable boot at two weeks
- Shoe wear as comfort allows
