

# RECONSTRUCTING THE ARTHODESIS MALUNION

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CSFS 2017

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## Introduction

- Ankle fusions have relatively good outcomes
  - Depends on mobility and condition of adjacent joints
- Careful patient selection
- Multiple different techniques
  - Plates vs. Screws
  - A'scopic vs. Open

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## Introduction

- Ankle fusion malunions are uncommon

What's the best way to treat ankle fusion malunions?

**AVOID THE MALUNION**

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## Introduction

- What is the optimal position?
  - Neutral Dorsiflexion
  - 0-5 degrees valgus
  - 10 degrees of ER
  - Neutral AP (and ML) translation



Buck et al JBJS 1987

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## Introduction

### Equinus and Varus

- Most frequent
- Least well tolerated



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## Introduction

### Respect the fibula!

- Nonunion after fibular removal will lead to valgus malalignment
- Can compromise subtalar joint



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## Introduction

- Problems with malunion
  - Stress fractures
  - Adjacent segment degeneration (PF)
  - Lateral foot overload (varus)
  - Instability (varus)
  - wounds



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## Evaluation

- Examine weight bearing alignment in all planes
  - Compare to contralateral limb
- Evaluate adjacent joints
- Note previous wounds/incisions
- Compare to patient complaints

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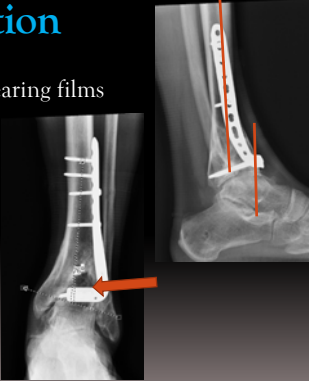
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## Evaluation

- Weight bearing films
  - Tib-fib
  - Ankle
  - Foot
  - CT?



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## Decision Making



- Correct the deformity at the deformity
  - Where and what plane(s)?
- What incisions?
- Bone Graft?
- Implants?
- Multiple joints? – Sequence?
- What are the goals of surgery?

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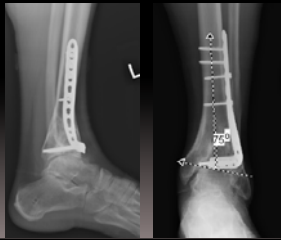
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## Coronal Plane Deformity



- 43 yo male with rigid ankle and arthrosis following pilon fracture
- Main complaint is lateral foot pain, mild ankle pain



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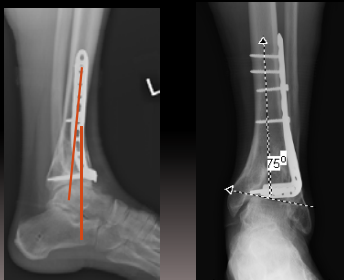
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## Coronal Plane Deformity



- Varus



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### Coronal Plane Deformity

- Varus



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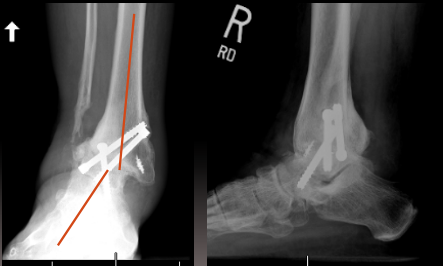
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### Coronal Plane Deformity

- Valgus



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### Coronal Plane Deformity

- Valgus
- Lateral Approach



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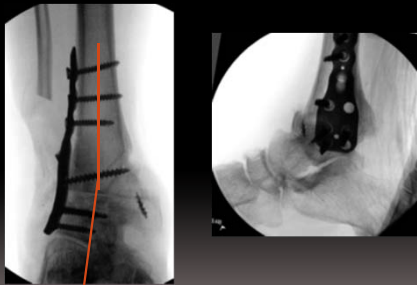
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### Coronal Plane Deformity



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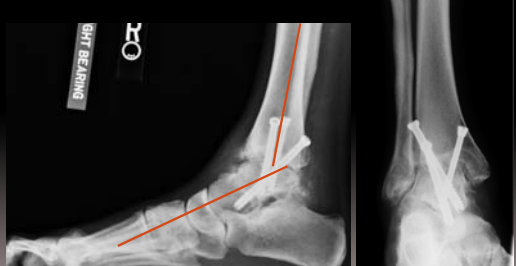
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### Sagittal Plane Deformity

- Plantarflexion
- 57 yo female after a'scopic fusion



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### Sagittal Plane Deformity

- Intraop simulated weightbearing



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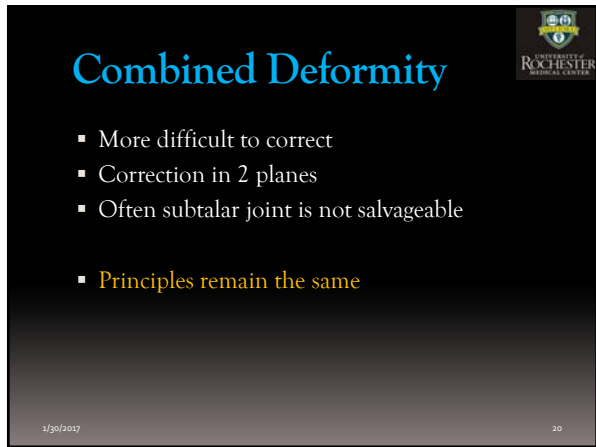
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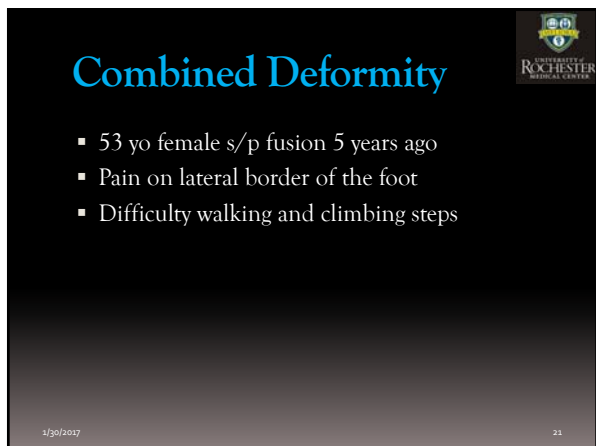
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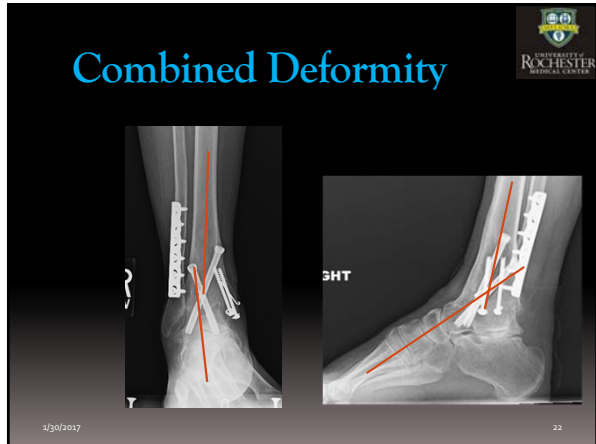
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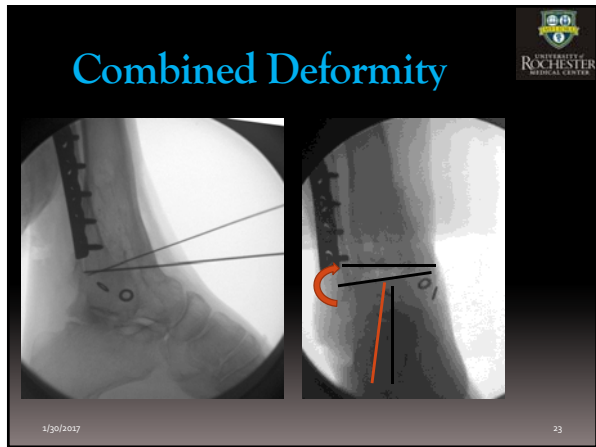
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### Combined Deformity

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### Combined Deformity

- 51 yo male s/p remote ORIF talar neck fracture
- Subsequent ankle fusion secondary to pain
- Progressive pain localized to hindfoot
- Has had issues following his fusion

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### Combined Deformity

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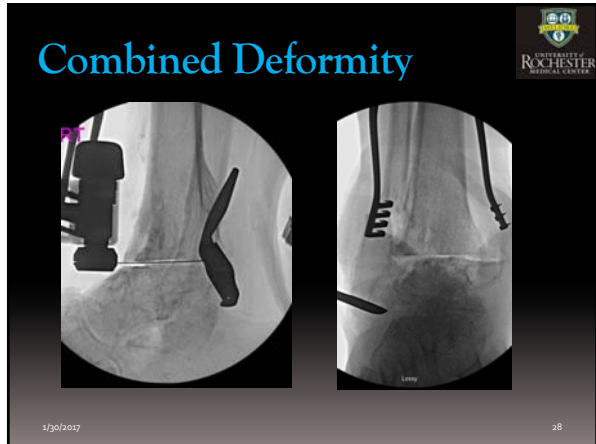
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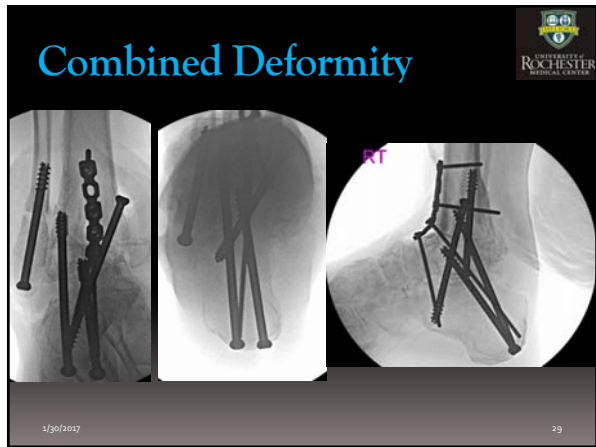
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## Postop Protocol

- 10 weeks NWB (cast/boot)
- Progressive weight bearing
- PT only if difficulty with gait/balance
- Long recovery period

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## Literature

- None to go on

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## Summary

- Rare cases
- Best treatment is avoidance
- Correct the deformity at the deformity
- Technically difficult – planning is key

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