

Geriatric Ankle Fractures

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NO FINANCIAL DISCLOSURES

GRANTS: WYSS FOUNDATION/OREF/OTA

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& TRAUMATOLOGY

Outline

- Basic Ankle Anatomy
- Surgery: When and why?
- Effects of age and osteoporosis
- Example Cases/**Challenges**

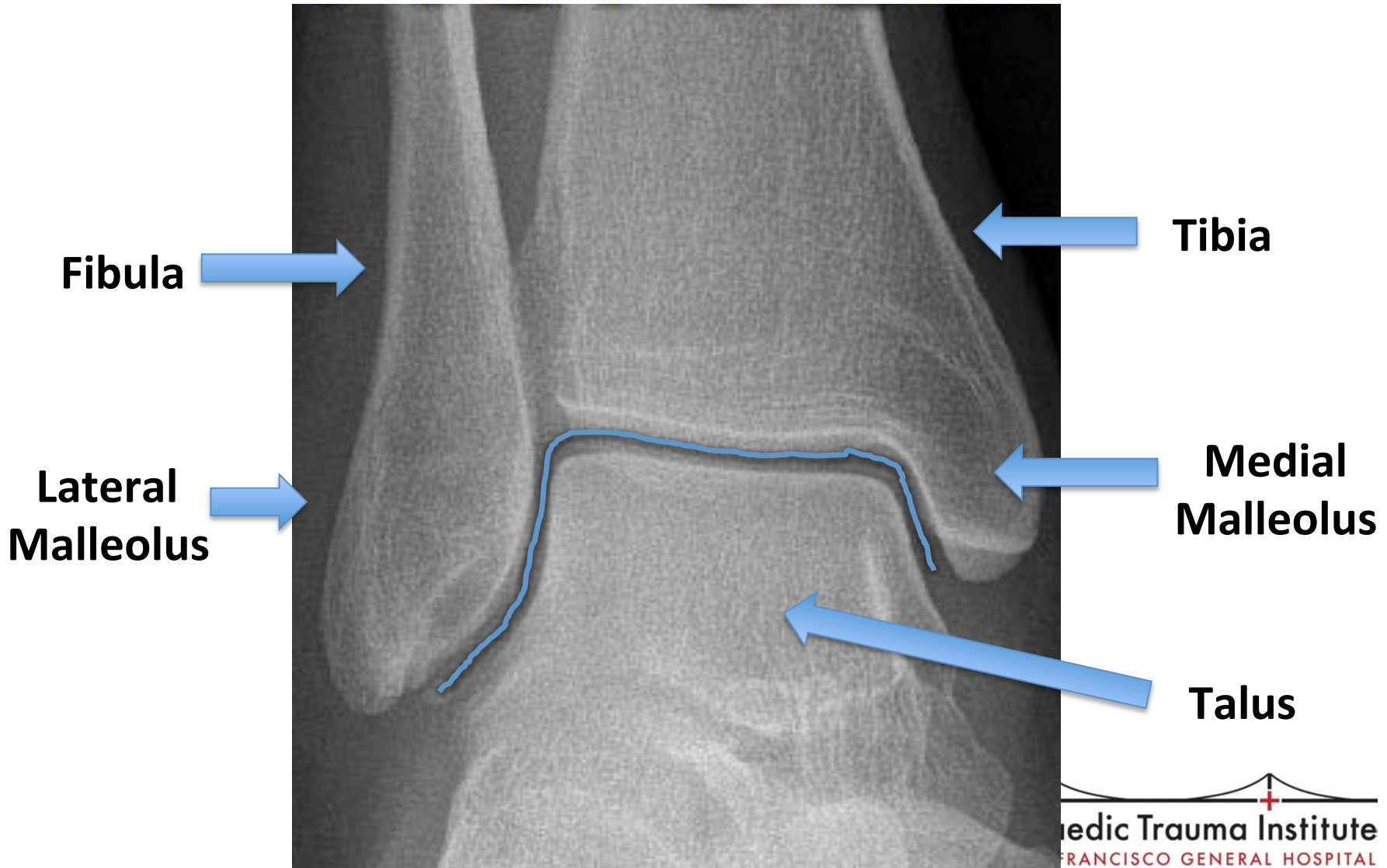
What are the challenges?

- Increasing # of fractures to treat
- Weaker bone
- Poor circulation
- Increasing number of diabetics
- Unable to Non-weight bear or use crutches/walker
- Decreasing mental/visual capacity

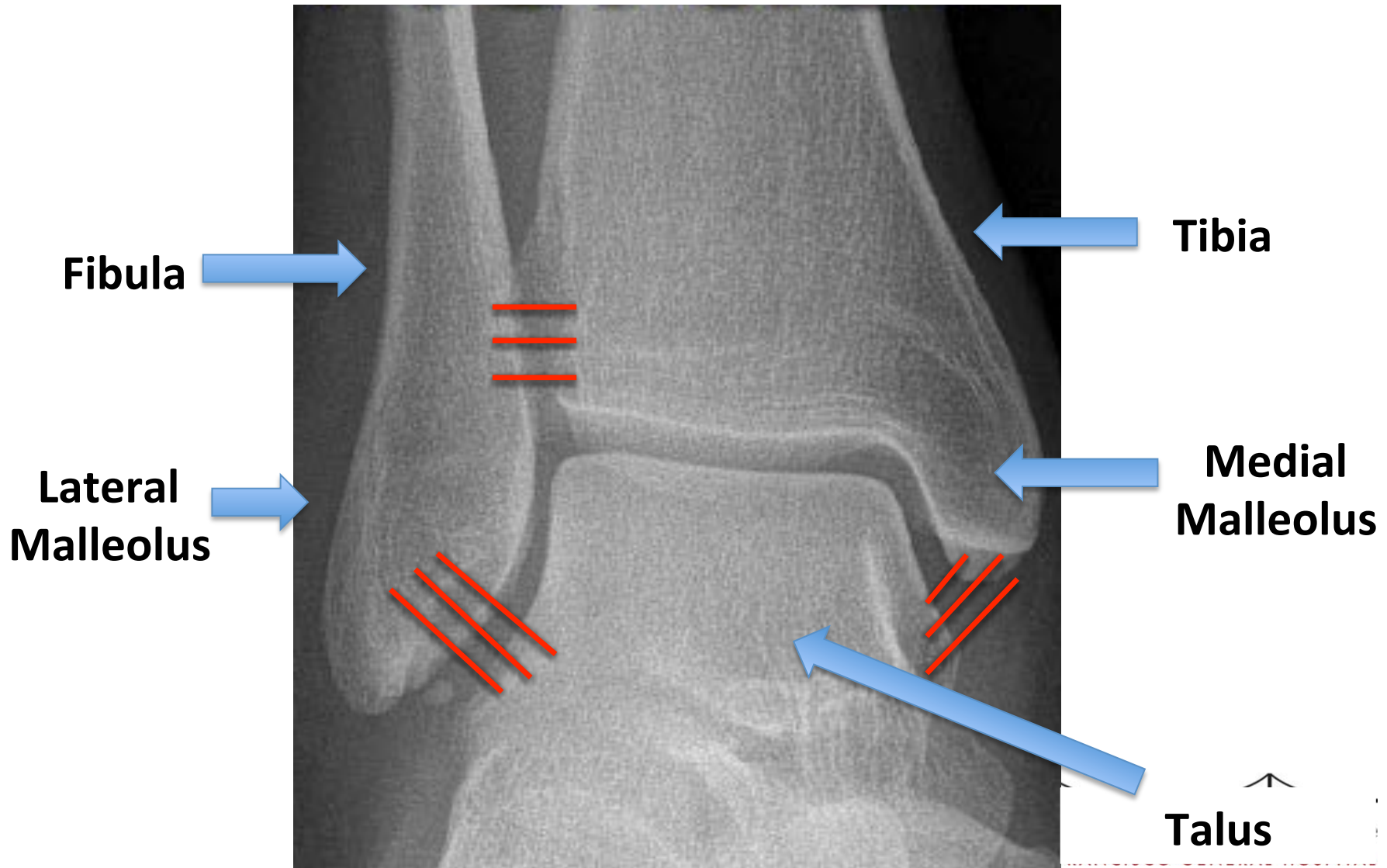
What is an ankle fracture?

- Fracture(s) around the ankle joint resulting primarily from twisting mechanism
- May disrupt the stability of the ankle joint

Stability/Bony anatomy



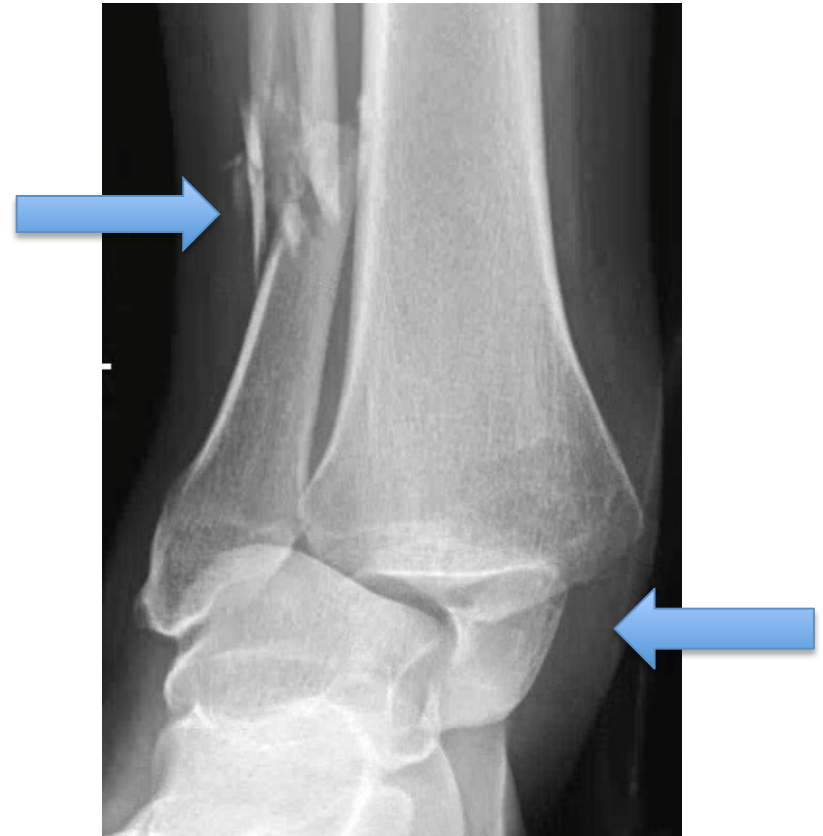
Stability/Ligament anatomy



Understanding Malleoli/**Stability**



Lateral Malleolus Fracture



Bimalleolar Fracture

Trimalleolar Fracture/**Unstable**



Ankle fracture vs. Pilon fracture



When is surgery necessary?

- When talus cannot be reliably maintained in the ankle mortise with a cast
- Bimalleolar and trimalleolar fractures **always unstable**
- Lateral malleolus fractures **SOMETIMES** unstable





- Stress examination may be necessary

Stable vs. Unstable: The ankle mortise



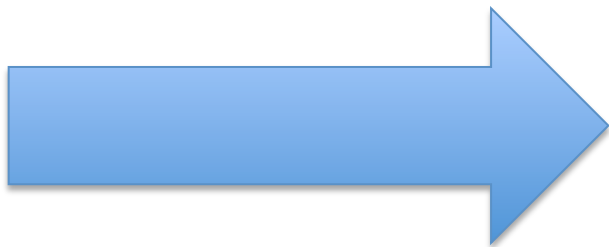
No stress



Stress

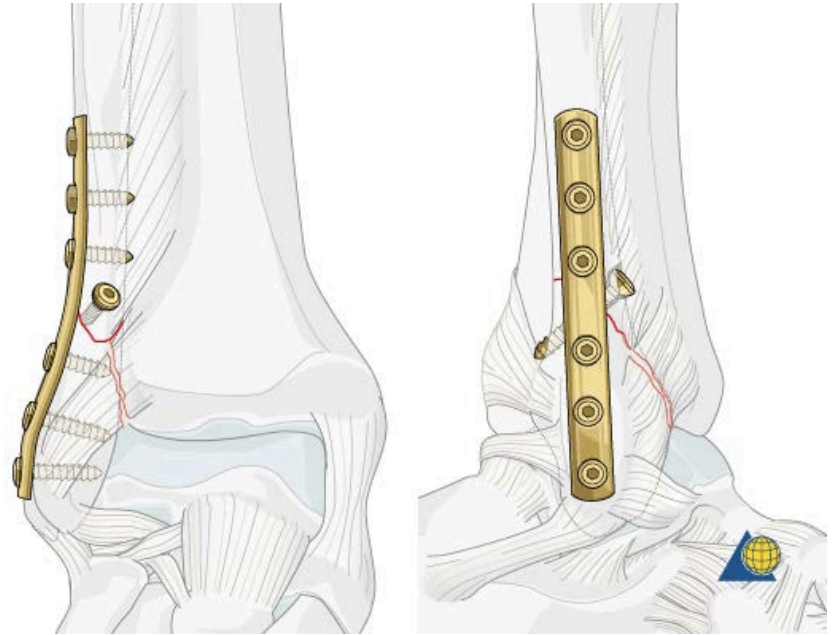
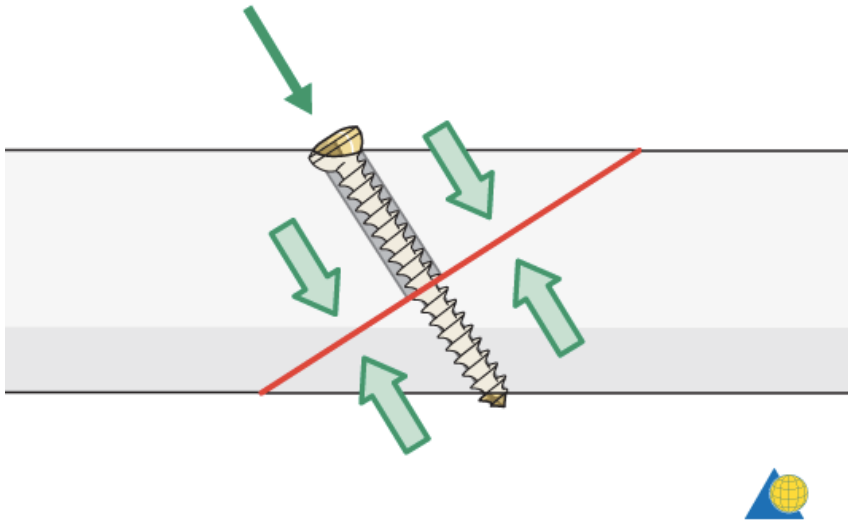
Goals of Surgery

- Restore **stability** of the ankle mortise
- Prevent abnormal loading of the joint



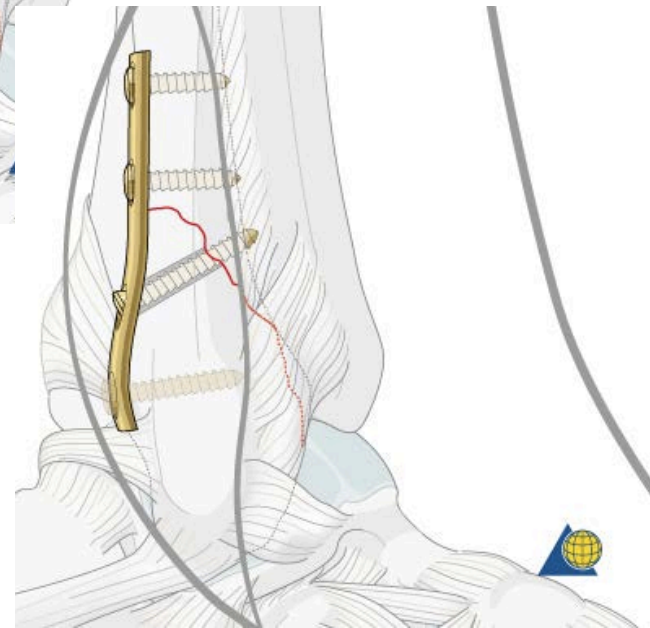
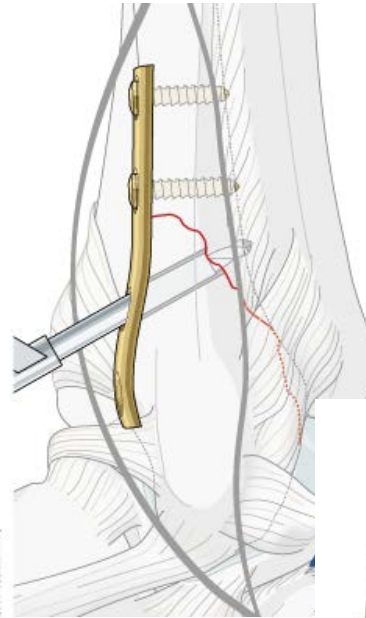
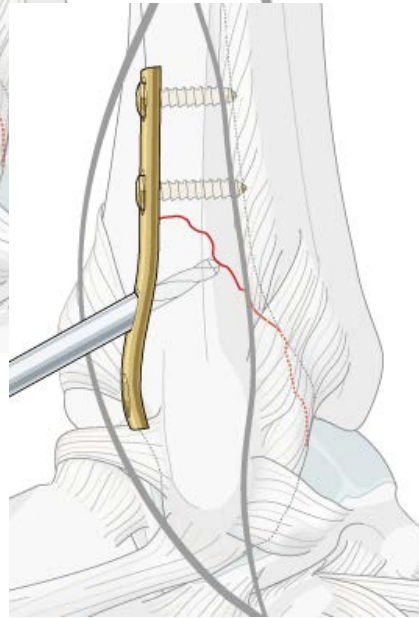
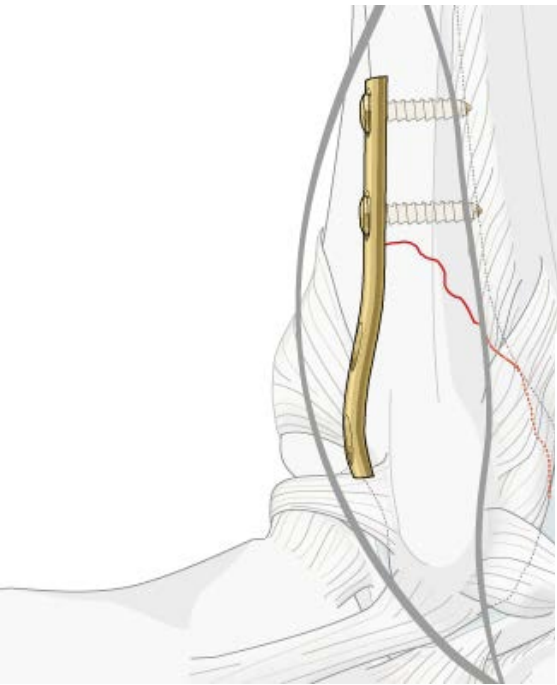
Prevent Instability/Arthritis
and Pain Long-term

What is done in surgery?





Antiglide Plate

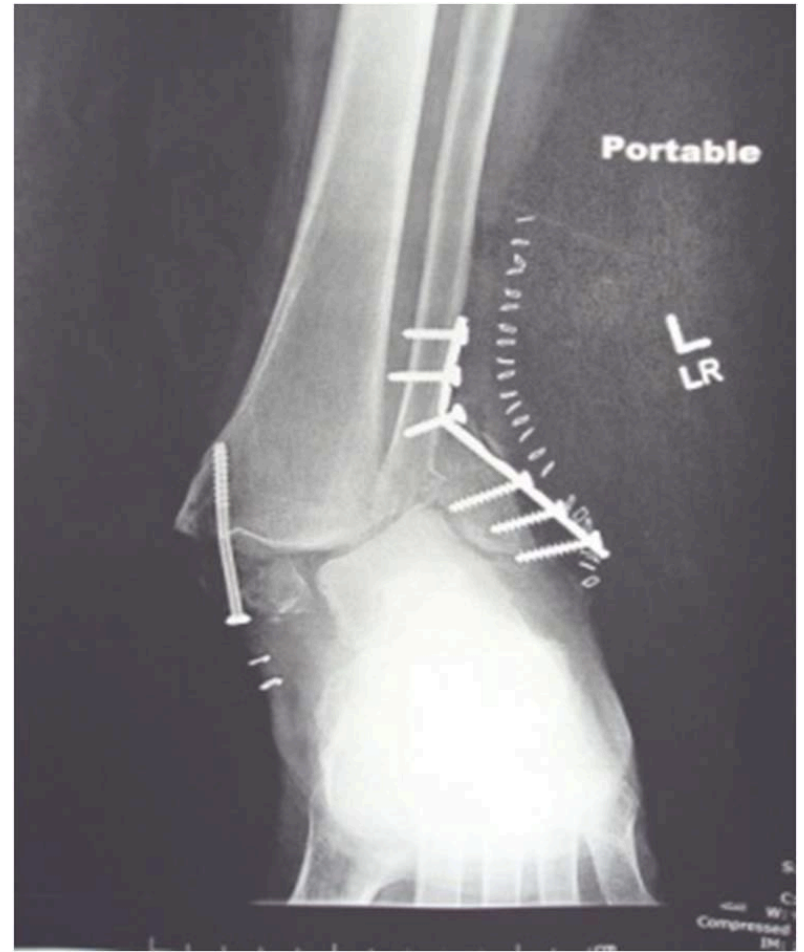




What happens with age?

- Poor bone quality
 - Higher risk of fracture
 - More complex patterns even with simple falls
 - Hardware failures
- More medical problems (e.g. Diabetes/poor circulation)
 - Higher risk of infection
 - Difficulty with weight bearing restrictions

What we fear



Case Examples:

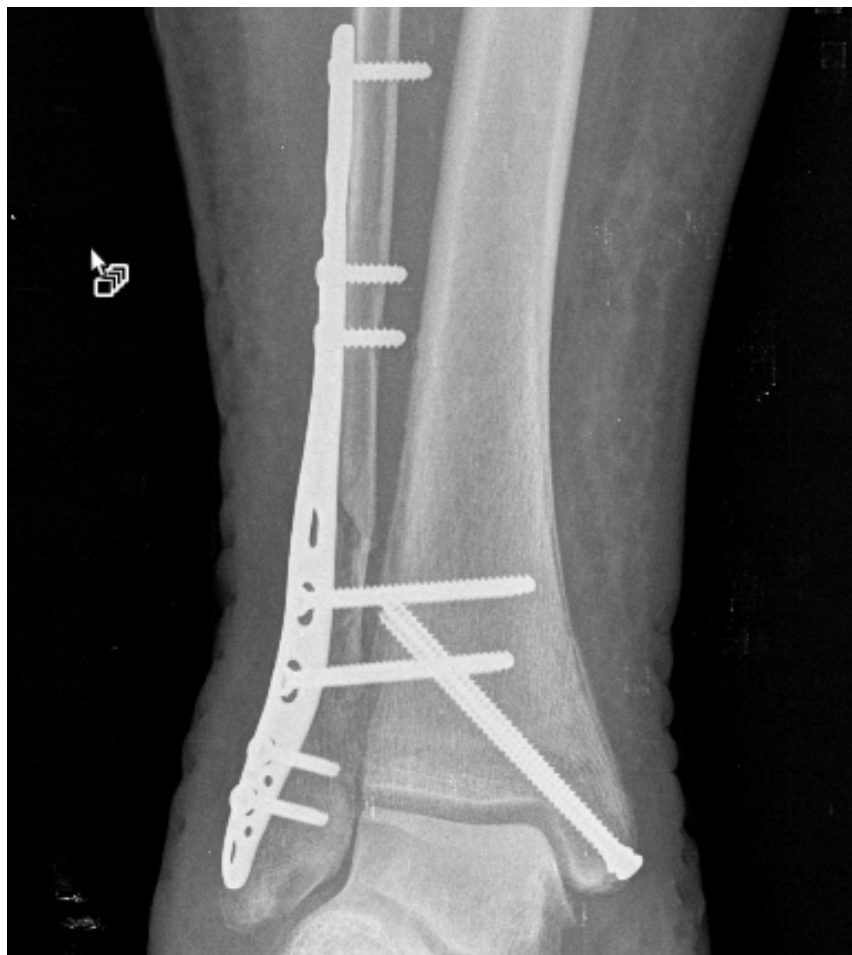
Case

70yo woman mechanical fall





Follow up



Case

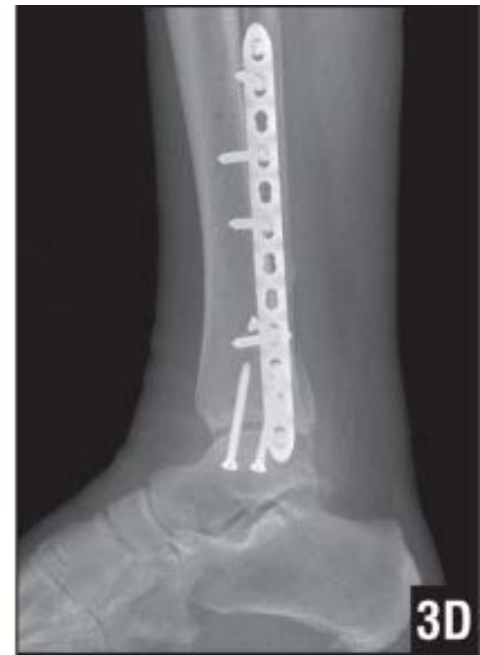
60-year-old woman tripped on curb

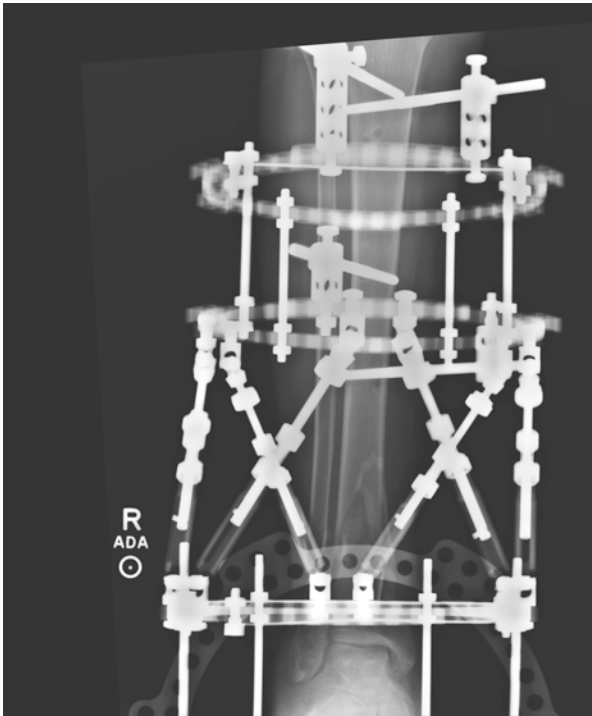
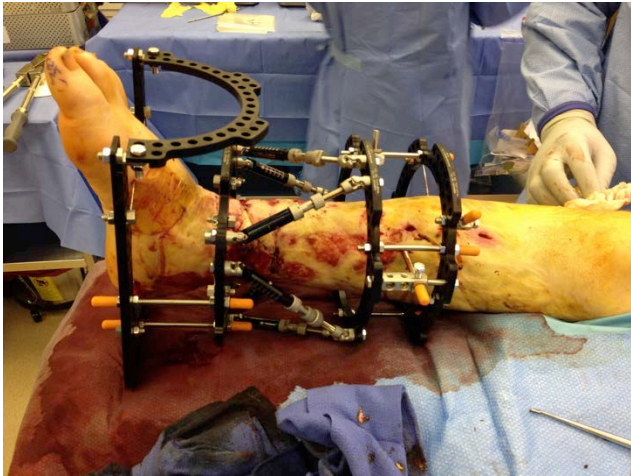




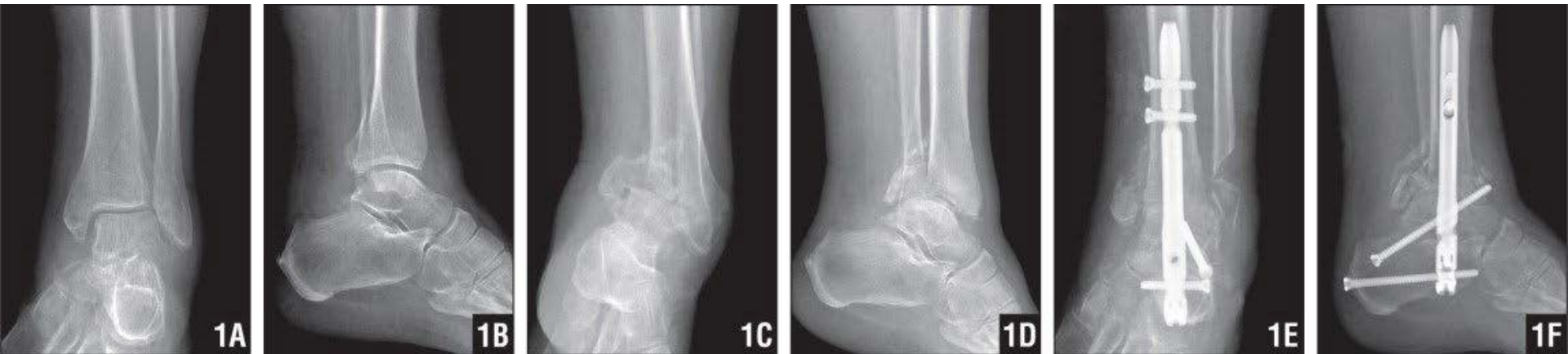
Follow up







Low energy/Charcot fracture/Fusion Nail



Geriatric Open Ankle Fractures/ Amputation

25 % Complication rate

11% Reoperation/amputation

Take-home points

- Ankle fractures are common and increase with age
- Need for surgery depends on stability of the ankle mortise
- Increasing age leads to more complex injury patterns and higher risk of surgical complications
- **Challenging!**