

Elderly Challenges - General

- Poor Skin
- Diabetes
- Vascular Problems
- Inability to Comply with Weight-Bearing Restrictions
- Disposition
- BONE QUALITY



Osteoporosis – Surgical Issues

- Reduction
 - Gentle
 - Indirect
 - Impaction - ↑ stability
- Difficult Fracture Fixation
 - Poor Screw Purchase



Ankle Fractures - Elderly

- Criteria for Ankle Stability Do Not Change with Age
- Surgical Fixation for Instability is Justified
- What about Arthritis Prevention?
 - How about a 85 yo Diabetic Female Household Ambulator with a Mildly Displaced Fibula and Slight Talar Shift?

Ankle Fractures

- Surgical Approaches
 - Direct Lateral
 - Minimize Periosteal Stripping



Ankle Fractures

- Surgical Approaches
 - Posterolateral
 - Interval between the Peroneus Brevis and FHL
 - Prone or "Sloppy Lateral" Position



Ankle Fractures

- Surgical Approaches
 - Medial

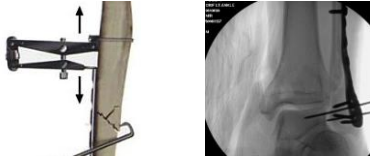


Ankle Fractures

•Fibula

–Reduction Techniques

- Direct Clamp application for Simple Patterns
- Indirect - Regain Length and Alignment
 - push screw + lamina spreader
 - pin distal segment to talus
 - fix medial side first



Ankle Fractures - Elderly

•Clamps

•Serrated vs Pointed

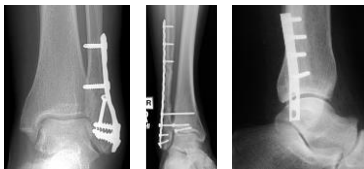


Ankle Fractures

•Fibula

–Fixation Techniques

- Lag Screw + Neutralization Plate (Straight or Contoured)
- Bridge Plate (Tapered Plate)
- Anti-glide Plate (Posterior)



Ankle Fractures - Elderly

• Rescue Screws

Mechanical Evaluation of a 4-mm Cancellous "Rescue" Screw in Osteoporotic Cortical Bone: A Cadaveric Study
J Orthop Trauma • Volume 24, Number 6, June 2010
 Simon J. Hull, FRCS (Trauma and Orth), Sumleop P. Soor, BS, Trevor A. Knight, BS, Simon C. Moore, MD, PhD, and Stephen M. Bellaff, PhD



2.7 mm Cortical → 3.5 mm Cortical → 4.0 mm Cancellous

Ankle Fractures

• Intramedullary Implants

- Alone
- Supplemental



Courtesy of G. Haidukewych

Ankle Fractures - Elderly

• Locking Plates

- Indications
 - Osteopenia
 - Short Articular Segments
- Anatomic
 - Pre-contoured
 - Thin
- Variable Angle

***Remember - "Lag before you Lock"

1. Pin-pin
2. Lag-lag
3. Lock-lock

Ankle Fractures

- Medial Malleolus

- Reduction Techniques

- Direct Clamping for simple patterns



Ankle Fractures - Elderly

- Medial Malleolus

- Reduction Techniques

- Hold in place and provisionally pin



Ankle Fractures

- Medial Malleolus

- Fixation Techniques

- Partially Threaded Cancellous Screws
- Buttress Plate
- Mini-fragment T-plate



Ankle Fractures

•Chaput Fragment

–Reduction Techniques

- Direct Reduction
 - Anterolateral Approach

–Fixation Techniques

- Lag Screws
- Buttress plate (straight, T-, or L- plate)

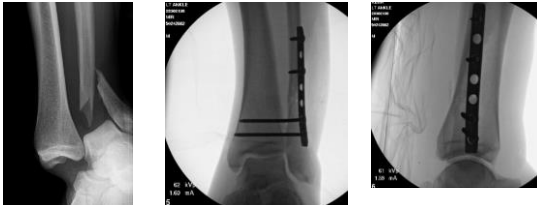


Ankle Fractures

•Syndesmosis

–Reduction Techniques

- Peri-articular clamp rather than a Weber clamp
- Contralateral Films in Difficult Cases
- Open Reduction in Select Cases
 - Work through Ligament Tear



Ankle Fractures

•Syndesmosis

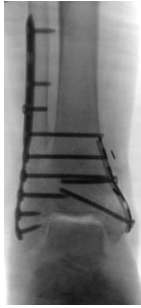
•Fixation Techniques

- Screws are most commonly used
 - Size? 3.5mm
 - Number? 1 for Mild Instability, 2 for Highly Unstable
 - Cortices? Three
- Non-absorbable heavy suture implants?



Ankle Fractures - Elderly

- Fixation into Tibia



Ankle Fractures

High-Energy Transsyndesmotom Ankle Fracture Dislocation—The “Logsplitter” Injury

Jesse E. Bible, MD, MHS, Priya G. Sivaramaniam, BA, A. Alex Jahangir, MD, Jason M. Evans, MD, and Hassan R. Mir, MD
J Orthop Trauma • Volume 28, Number 4, April 2014

- “Logsplitters”
 - Significant Syndesmotom Disruption
 - Soft-tissue Compromise
 - Associated Plafond Injuries
- Outcomes Comparable to Pilon Fxs



Outline Conclusions

• Ankle Fractures

- Lateral Malleolus
- Medial Malleolus
- Posterior Malleolus
- Chaput
- Syndesmosis



• Challenges in the Elderly

- General Issues
- BONE QUALITY
 - Clamps
 - Rescue Screws
 - Intramedullary Supplementation
 - Locking Screws
 - Fixation to Tibia

