Five Tips: Peritroch Fractures

1) Critically understand fracture stability
2) Use of tools in your REDUCTION is critical
3) Choose Appropriate Fixation
   - Plate Fixation
   - Nail Fixation
4) Starting Point for IMN
5) Always lock distally

What is a peritrochanteric fracture?

AO OTA 31A
- Inter-trochanteric femur fractures
- More complex = more unstable
- Transtrochanteric
- Intertroch/Subtroch extension
- Reverse Obliquity
- Stability guides treatment
Factors affecting fracture fixation outcomes

- Surgeon independent
  - Fracture pattern
  - Bone quality
  - Patient comorbidities

- Surgeon dependent
  - Your understanding of the fracture pattern
  - Quality of reduction
  - Implant choice
  - Implant position

Understand the Fracture

- Stable Fracture Patterns
  - Simple fracture pattern
  - Standard obliquity
  - Amenable to compression across the fracture (after reduction)

- Unstable Fracture Patterns
  - Large/comminuted posteromedial cortex
  - Subtrochanteric extension
  - Reverse obliquity
  - Incompetent lateral cortex
Stability drives decision making

Understand the Fracture

- Peritrochanteric Fractures are Biplanar

USE THE LATERAL VIEW!
Understand the Fracture

Integrity of the lateral femoral wall in intertrochanteric hip fractures: An important predictor of a reoperation

- 214 pts intertrochanteric fracture treated with 135 sliding hip screw
- 3% with lateral wall intact post-op had reoperation
- 22% with fractured lateral wall post-op had reoperation
Fracture Pattern

• Obtain a Traction view
  • Does the fracture?
    • Involve the greater troch
    • Violate the lateral wall
    • Have medial comminution
    • Have subtroch extension
    • Have neck extension

Reduction more important than choice of implant!

• Correct varus, flexion, external rotation
• The fracture table doesn’t always do it
• An open reduction is better than no reduction

Deforming Forces

• Flexed
• Abducted
• Externally rotated
This still occurs in 2017

Reduction, Reduction, Reduction

Reduction, Reduction, Reduction
NAIL VS PLATE?

• Why the trend toward nails?
  • Advantages:
    • Biomechanical advantage
    • Percutaneous technique
    • Decreased OR time
    • Protects the shaft
  • Disadvantages
    • Abductor mechanism
    • Reaming
    • Expensive
    • Iatrogenic fx

SLIDING HIP SCREW:
NEED A BACKSTOP

CONTROLLED COLLAPSE:
WHY IT FAILS
You Can Successfully Plate Peritrochanteric Fractures

- Shorter lever arm
- Decreased strain on implant
- Decreased bending moment on lag screw
- Load sharing
- Can span zone of injury
- Cortical substitution

WHY IS A NAIL BETTER FOR MORE UNSTABLE PATTERNS?

- Shorter lever arm
- Decreased strain on implant
- Decreased bending moment on lag screw
- Load sharing
- Can span zone of injury
- Cortical substitution
Reduction Remains Key

- No Varus
- Do not accept poor reduction
- Remember deforming forces

Trochanteric Nails

- Lateral start → Varus
- Medial start → Valgus

Medial Trochanteric Starting Point
- Toney Russell

Implant application

Tip-Apex Distance (TAD) < 25mm
Five Tips in Peritroch Fractures

1) Critically understand fracture stability
2) Use of tools in your REDUCTION is critical
3) Choose Appropriate Fixation
   - Plate Fixation
   - Nail Fixation
   4) Starting Point for IMN - Medial
   5) Always lock distally