

**Orthopedic Clinical Case
Discussion (Proximal femoral fractures)**

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60 year old hx of falling down, Rt hip pain



65 year old female Pt, twisting injury, Rt hip pain



Intertrochanteric Fractures

- Intertrochanteric fractures are defined as extracapsular fractures of the proximal femur that occur between the greater and lesser trochanter
- These fractures occur both in the elderly and the young, but they are more common in the elderly population with osteoporosis due to a low energy mechanism.
- The female to male ratio is between 2:1 and 8:1.
- These patients are also typically older than patients who suffer femoral neck fractures.
- In the younger population, these fractures typically result from a high-energy mechanism

Intertrochanteric Fractures

- The calcar femorale is the vertical wall of dense bone that extends from the posteromedial aspect of the femur shaft to the posterior portion of the femoral neck.
- This structure is important because it determines whether or not a fracture is stable.
- The vast metaphyseal region has a more abundant blood supply, contributing to a higher union rate and less osteonecrosis compared to femoral neck fractures

Intertrochanteric Fractures

- Complications:
- 20% to 30% mortality risk in the first year following fracture.
- **In patients who are treated nonoperatively**, cardiopulmonary, thromboembolic events and sepsis are the most common complications seen.
- **Operative complications** include blood loss anemia, infection and collapse.
- complications of implant-related failure is screw cutout

70 year old male Hx of FD, Rt hip Pain, limited ROM



Femur neck fracture

- Increasing due to increase aging population
- high energy in young patients
- low energy falls in older patients
- **healing potential**
 - femoral neck is intracapsular
 - lacks periosteal layer
 - callus formation limited, which affects healing due to synovial fluid.
- **mortality**
 - ~25-30% at one year
- predictors of mortality
 - pre-injury mobility is the most significant determinant for post-operative survival

High-energy proximal femoral fracture

- 53-year-old man
- Motor vehicle accident
- Closed head injury
- Flail chest on the same side
- Intubated in ICU

Describe the Fracture?
complications?

Day 0



High-energy proximal femoral fracture



High-energy proximal femoral fracture



Nonunion proximal femoral shaft

- 26-year-old pedestrian versus car
- Closed injury
- NV intact
- No other injuries

Day 0



Nonunion proximal femoral shaft

Early nailing

Day 1



Nonunion proximal femoral shaft

9 months later

Removal of distal interlocking bolt

(at other clinic)

Patient still has leg pain

- describe what do you see?



Nonunion proximal femoral shaft

- NO Bone graft



Nonunion proximal femoral shaft

Postoperative x-rays



1-year follow-up



Nonunion proximal femoral shaft

- **Hypertrophic**
 - Vascularized
 - Callus formation present on x-ray
 - “Elephant’s foot” - abundant callus
-
- Biology is more than sufficient but can’t consolidate
 - likely need mechanically favorable solution

Nonunion proximal femoral shaft

- **Atrophic**
- No evidence of callous formation on x-ray
- Ischemic or cold on bone scan Not enough biology
likely need biologically favorable solution