

## “Peritrochanteric” Hip Fractures (Subtrochanteric and Intertrochanteric ) Treatment with Plate ORIF



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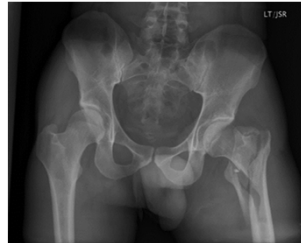
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## Peritrochanteric Femur Fractures

- Extra-capsular hip fractures
- Involving the trochanter and frequent extension into the subtrochanteric region
- \*evaluate for pathologic fracture if radiographs or medical history indicate




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## Incidence

- Elder patient population
- Falls from standing height
- 250,000+ Hip Fractures/year
- Double by 2040 to 500,000




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## Etiology

- Osteoporosis
- Low energy fall
- Slightly older, sicker on hospital admission
- 90% >65y/o
- Peak @ 80y/o
- F>M
- Occasional High Energy




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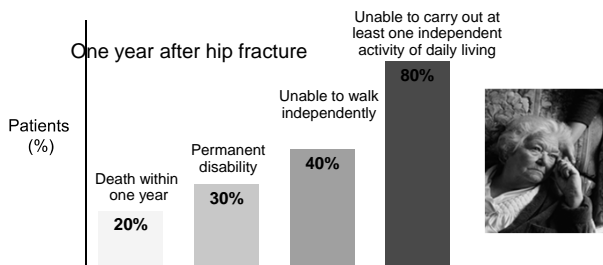
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## Consequences of hip fracture



Cooper. Am J Med 1997; 103(2A):12s-19s.

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## Radiographs

- Plain Films
  - AP Pelvis
  - Cross Table Lateral
  - \*ER Traction view




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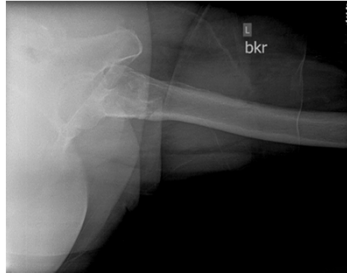
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## Radiographs

- Plain Films
  - AP Pelvis
  - **Cross Table Lateral**



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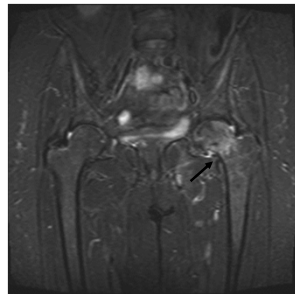
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## Special Studies

- CT Scan Rarely Indicated
- Occult Fractures
  - **MRI**
    - Imaging modality of choice
    - Sensitive in first 24 hrs



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## Perioperative Medical Management

- Optimize Medical Problems
- DVT Prevention
- Perioperative Antibiotics
- UTI Treatment
- Nutritional Optimization
  - Decrease 1yr Mortality
- Fragility Fracture programs

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## Classification: Stable vs. Unstable



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## Classification

- Stable = intact cortical contact posteromedially preventing varus or retroversion
  - Posteromedial “calcar” has the thickest/most structural primary compressive trabeculae
  - Has the ability of the reduced fracture to support physiologic loading



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## Classification

- Unstable -
  - Lesser trochanter fx
  - Greater trochanter comminution
  - 4 part fractures
- Collapses in varus or shaft medializes



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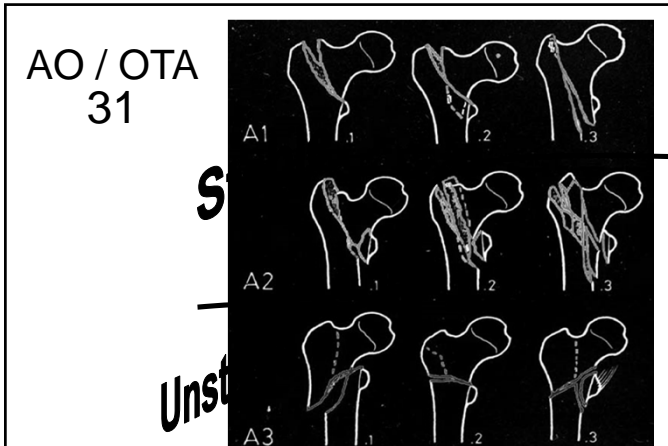
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### Implant Options

- Compression Hip Screw & Side Plate (CHS)
- Fixed angle blade plate
- Locking proximal femoral plating system
- Intramedullary Sliding Hip Screw
- Calcar Replacing Prosthesis

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### Implant Options

- Compression Hip Screw & Side Plate
  - Controlled Impaction of Fracture
  - Higher Angles Greater Tendency for Impaction




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## Implant Options

- Intramedullary Sliding Hip Screw
  - Peritrochanteric fractures (Shaft ext)
  - Reverse Obliquity
  - Pathologic Shaft Fracture



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## Intra-Operative Positioning

- Hemilithotomy Position
  - un-injured limb
    - Hip Flexed Abducted
    - Knee Flexed
- Scissors Position
  - un-injured limb
    - Extended Hip



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## Fracture Reduction

- Neck / Shaft Alignment
- Adequate visualization AP/lateral c-arm images
- Reduction Maneuver
  - Traction
  - Internal Rotation
- Anatomic Reduction of Individual Fragments Not Necessary

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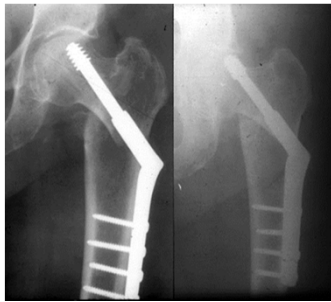
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## Avoid Malreduction

- Malreduction pitfalls
  - Varus
  - Posterior sag
  - Inappropriate internal rotation




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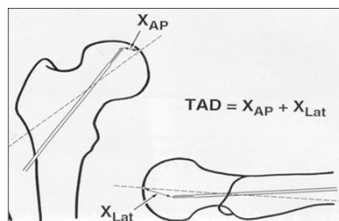
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## Tip-Apex Distance (TAD)

- TAD
  - Strong Predictor of Cut Out
- TAD <25mm
  - Failure Approaches Zero
- TAD >25mm
  - Chance of failure increases rapidly




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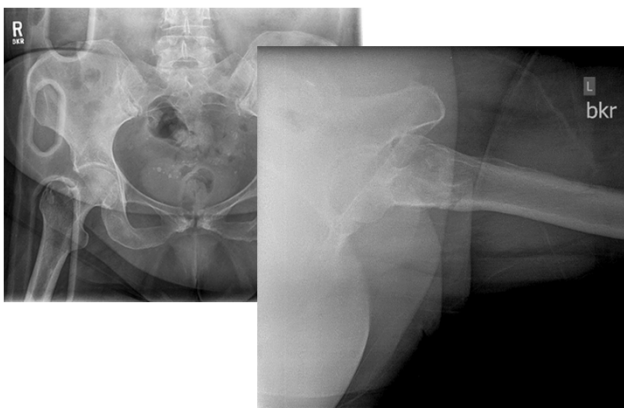
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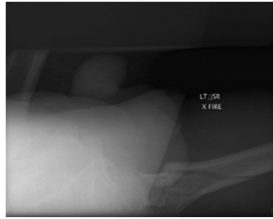
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### Subtrochanteric Femur




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## Rehabilitation

- Mobilize early!!!
  - Weight Bearing As Tolerated
  - Cognitive Intact Patients Auto Protect
    - Unstable Fractures => Less WB
    - Stable Fractures => More WB
    - No Difference @ 6 weeks Post op

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## Outcomes

- With proper fracture reduction, implant selection and implant positioning – these fxs have a high healing rate (up to 98%)
- One-year mortality rate still remain 15-20%

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## Osteoporosis Underdiagnosed

- Fewer than 5% of patients with fractures are referred for evaluation and treatment
- Most older women with hip, wrist, or vertebral fracture received no drug treatment within 1 year
- At hospital discharge, 4.5% of men with hip fracture and 27% of women with hip fracture had treatment for osteoporosis

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## Increase awareness and treatment

- Fewer than 5% of patients with fractures *receive evaluation and treatment of osteoporosis, the underlying cause of most fragility fractures*<sup>1,2</sup>
- A prior fracture increases the risk of a new fracture 2- to 5-fold
- At hospital discharge, 4.5% of men with hip fracture and 27% of women with hip fracture had treatment for osteoporosis
- Awareness and knowledge about osteoporosis is low among fracture patients
- Our response to a fragility fracture must include a determined attempt to prevent another one
  - Needs a system that achieves this automatically

1. Eastell et al. QJM 2001; 94:575-59  
2. Bouxsein et al. J Am Acad Ortho Surg. 2004; 12:385-95

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## Fractures beget Fractures

- A prior fracture increases the risk of a new fracture 2- to 5-fold
- \*History of fragility fracture is more predictive of future fracture than bone density



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- Talk to patients about osteoporosis
- Ca+ 1200-1500mg po qd in 3 divided doses
- Vitamin D3 1,000 IU po qd
- Send letter to PCP about evaluation/tx for osteoporosis
- Schedule an outpt DEXA if one has not been performed within the past 2 years

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## Conclusions

- Common fracture patterns with increasing incidence with aging population
- Optimize Perioperative Medical Management
- Surgeons technique (TAD <25mm) shown to significantly reduce complication rates
- Mobilize patients early

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Thank you




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