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

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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

Incidence

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

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

Consequences of hip fracture

One year after hip fracture

- 40% Unable to walk independently
- 30% Permanent disability
- 20% Death within one year
- 80% Unable to carry out at least one independent activity of daily living

Radiographs

- Plain Films
  - AP Pelvis
  - Cross
  - Table Lateral
  - ER Traction view
Radiographs

- Plain Films
  - AP Pelvis
  - Cross Table Lateral

Special Studies

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

Perioperative Medical Management

- Optimize Medical Problems
- DVT Prevention
- Perioperative Antibiotics
- UTI Treatment
- Nutritional Optimization
  - Decrease 1yr Mortality
- Fragility Fracture programs
Classification: Stable vs. Unstable

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

Classification
• Unstable -
  – Lesser trochanter fx
  – Greater trochanter comminution
  – 4 part fractures
• Collapses in varus or shaft medializes
Implant Options

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

Implant Options

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

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

Intra-Operative Positioning

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

Fracture Reduction

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

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

Tip-Apex Distance (TAD)

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

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%
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

Increase awareness and treatment

- Fewer than 5% of patients with fractures receive evaluation and treatment of osteoporosis, the underlying cause of most fragility fractures
- 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

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

1. Eastell et al. QJM 2001; 94:575-9
• 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 outpatient DEXA if one has not been performed within the past 2 years

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

Thank you