Intertrochanteric Femur Fractures w/ Dr. Sanders- Notes

Mechanism

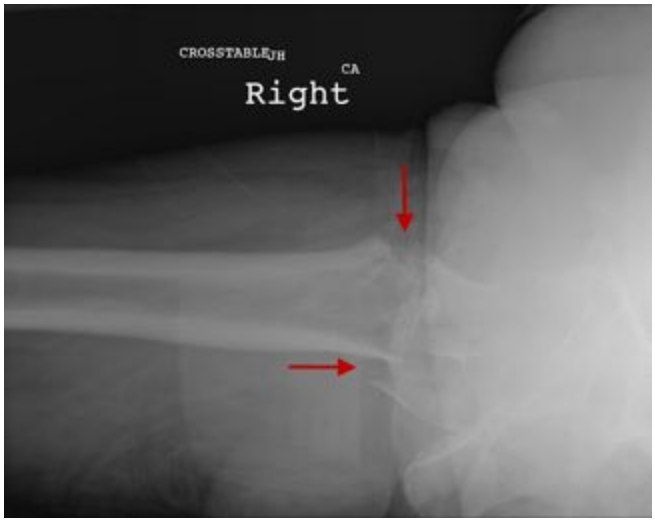
- Low energy in elderly, high in young

H&P

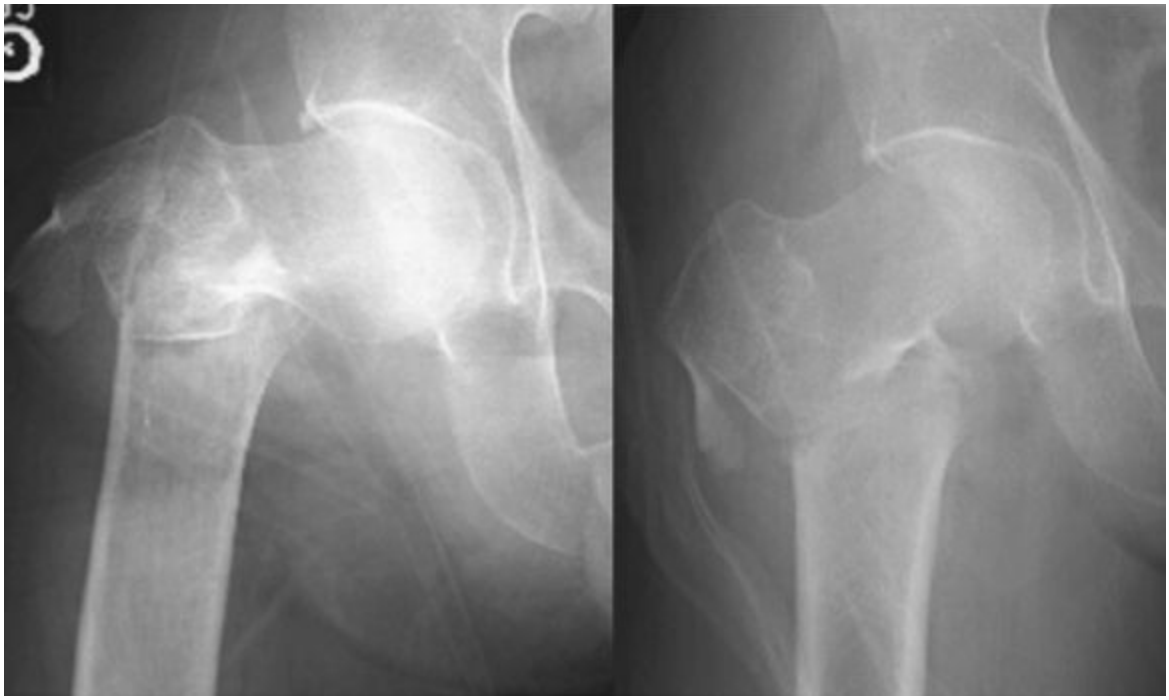
- History of DVT/PE, anticoagulants, prodromic sxs, aortic stenosis, active infections
- Short + ER limb

Imaging

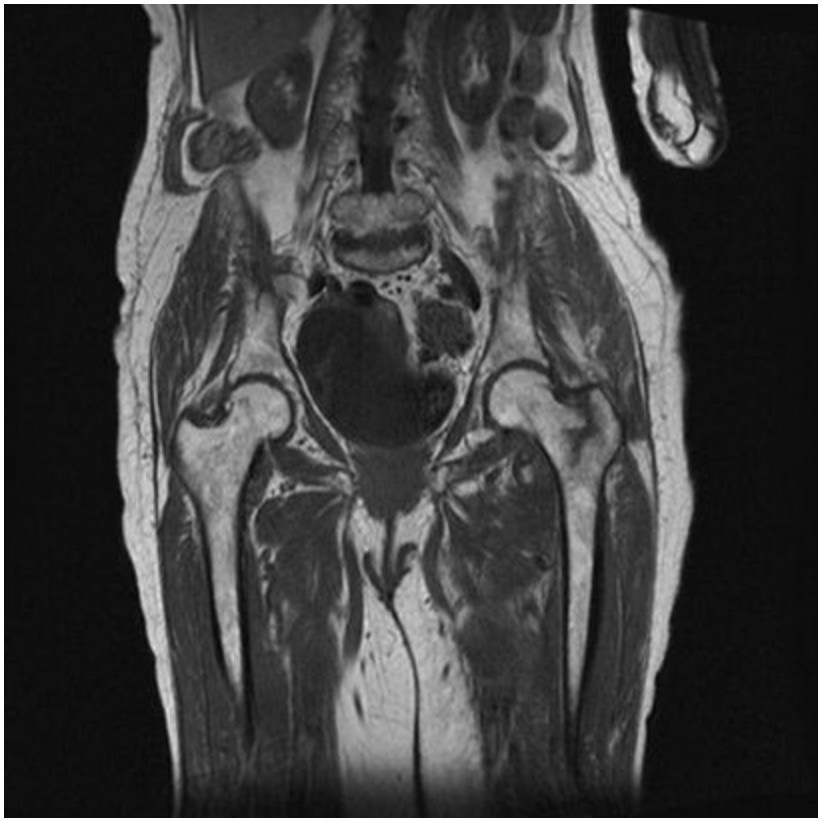
- AP/ Cross table lateral/ Femur/ Knee
- Traction w/ IR
- MRI- higher sensitivity/ specificity if suspected



Traction films:



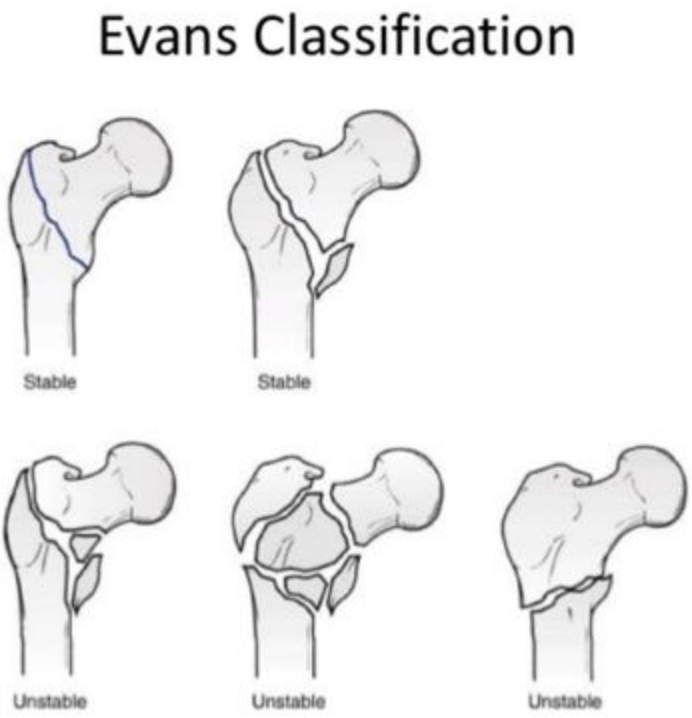
MRI



Classification

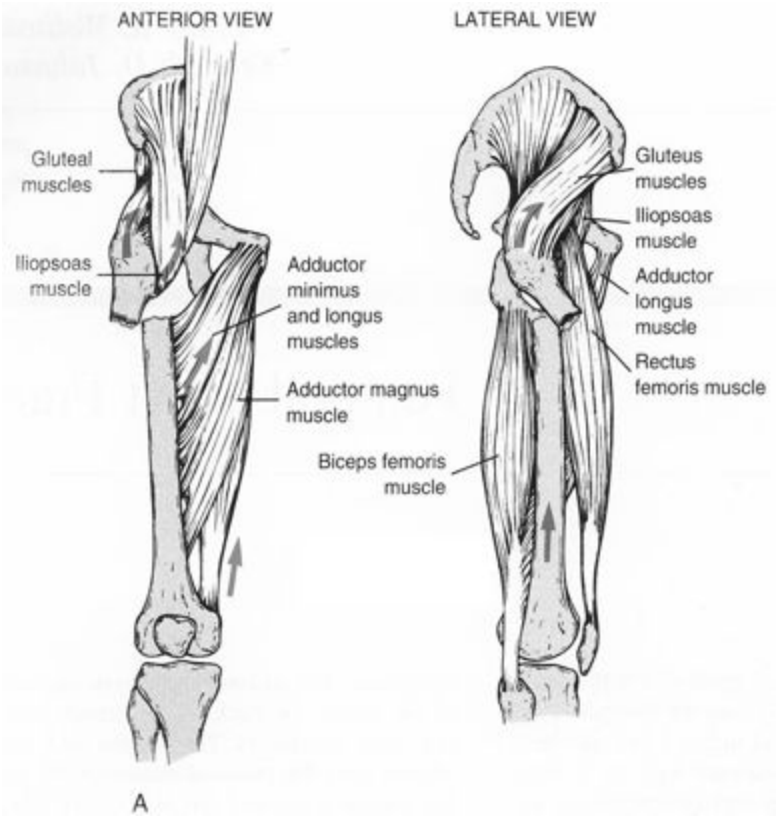
- Stable V Unstable

- Unstable: PM fragmentation,reverse obliquity, displaced GT fx (lateral wall blowout), subtrochanteric extension



Pathoanatomy

- Calcar is important- if fx- leaves the AM cortex potentially for stable repair
- Structural attachments: Hip Capsule + musculotendinous structures
    - Capsule important in reduction- can help due to attachments
        - § If disrupted- Fx displaces due to tendon attachment
            - · GT- abductor & ER. Shaft- posterior/ medial
            - · (shortening/ coxa vara)



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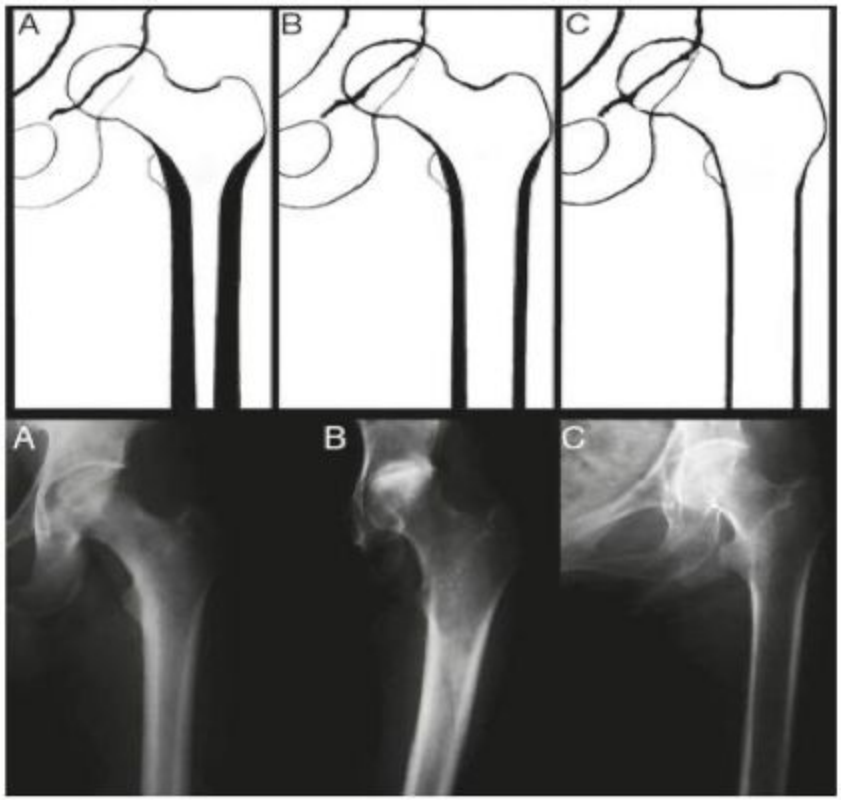
Dorr classification

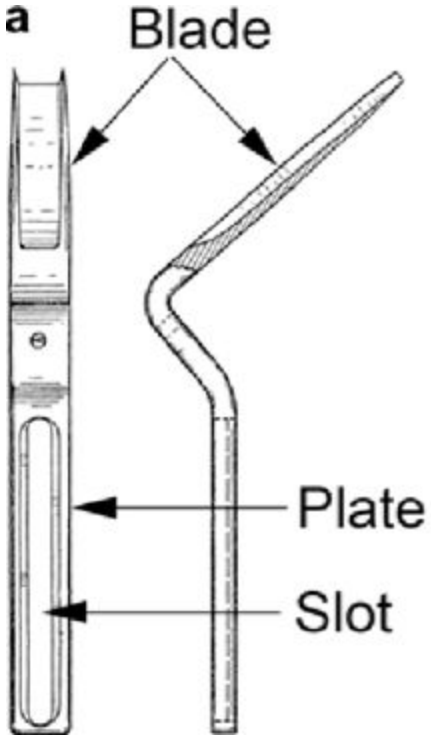


Non-op Treatment

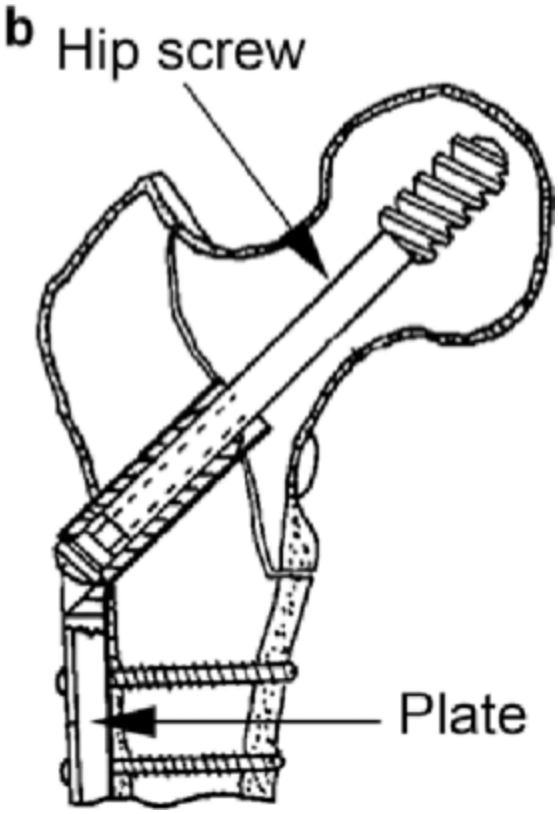
- Rare. Imminent death

Operative tx- Plating

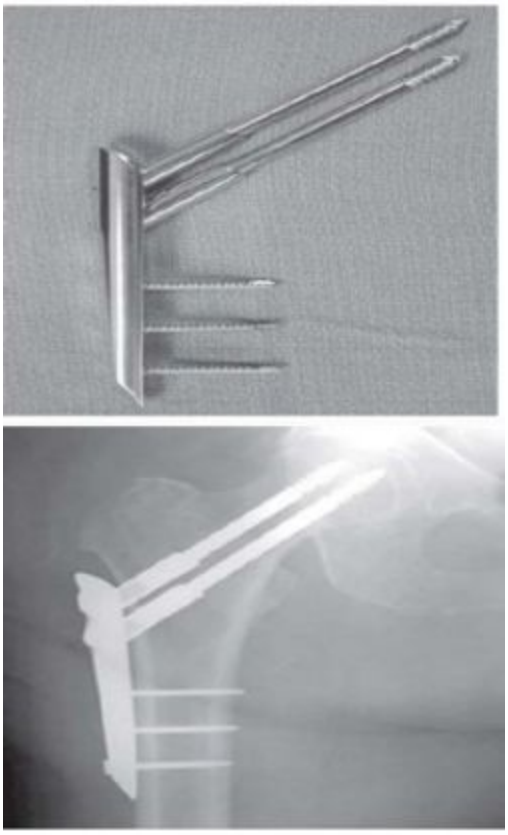
- 4 types
  - Fixed angle devices- impacted nail-type plate devices (blade plate/fixed angle plates)
    - § Inc risk cutout, nonunion, & implant breakage compared to sliding)



  - Sliding hip screws- (large single sliding screw w/ side plate attachment)
    - § Side plate w/ cortical screws w/ barrel on proximal plate- for large threaded screw insertion
    - § Varying barrel angles (125-150deg), 12.5mm large lag screws



- Linear compression class (multiple head fixation components- controls rotation/translation- allows linear compression)



o Hybrid locking class- compression components for fx- locking screws prevent further axial compression w/ fixed angle stability (lateral troch buttress plate)

§ Useful w/ high prox femur comminution of PM cortex extending distal to LT.

CMN

- Piriformis fossa, lateral greater troch, or medical GT entry- based on nail design
- 4 Classes
  - Impaction class – Synthes TFN- helical blade
  - Dynamic compression/gamma class- Large screw into head
  - Reconstruction class- Smaller proximal nail diameter w/ two leg screws
  - InterTAN class- medial troch entry design w/ trapezoidal prox cross section w/ 2 screw construct & linear compression at fx site
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- CMN technical tips
  - Impaction class- TFN
    - § better resistance w/ helical blade compared to single screw design
    - § Used in osteoporotic bone (will cause distraction in non-osteoporotic bone)
    - § AM reduction important. Careful for medial penetration of blade.

  - Gamma (single lag screw dynamic compression)
    - § Nail inserted so guide wire slightly inferior position from center/center
    - § Watch out for lag screw cut out

- Reconstruction nail class
  - Originally design for complex subtroch and pathological fx
  - Not generally used for intertroch fx

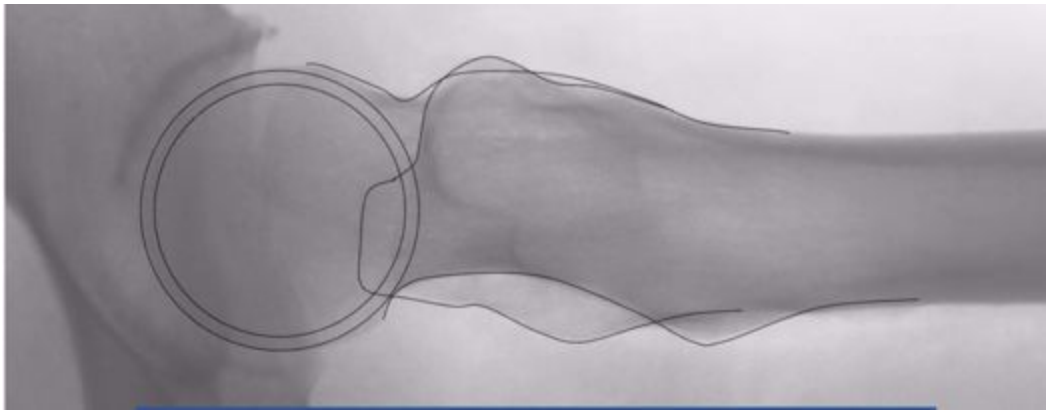
- Intertan
  - Indicated for older patients w/ pertroch fx and door B/C morphology

Pre op planning

- Dorr classification.
  - A- Plate/recon nail for bone conservation?
  - B- short nail or side plate?
  - C- wide metaphysis + stove pipe- larger head CMN may offer advantages
- Neck/Shaft angle measurement
- Radius of curvature- Avoid posterior starting point- anterior cortical perforation

Surgical technical tips

- **Imaging- True AP 10/20 deg rotation. Lateral is 15-30 deg over horizontal**
- Lateral approach. Extensive dissection- anterolateral approach



- Ascending branch of lateral femoral circumflex

- Plating technique
  - Focus on AM cortex reduction (or where you can get a read)

Closed reduction tips

- Traction + Internal Rotation

Open reduction tips

- Reduction tips: pull shaft laterally to disimpact
- Blunt hohman retractor anterior and levered against medial prox femoral neck (see anterior capsule- Connelly and archdeacon technique)
  - They also use temporary 4 hole semitubular plate
  - Distal A-P schanz pins in femur can assist reduction
- K wires from anterior shaft into medial femoral neck

Post op

- WB status? WBAT

Sources:

Rockwood & Green, Fractures in Adults- Intertrochanteric Femur Fractures