

Case Presentation: Bisphosphonate Related Femur Fracture

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Disclosure

- Co-Founder / Consultant / Designer
– Revision Technologies LLC
- Educational Consultant
– AO, Stryker, Biomet
- Royalties
– Biomet
- Design Team
– Biomet
– Synthes

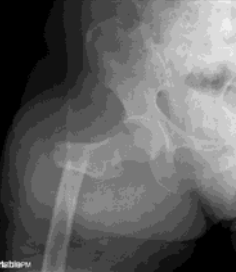
Bisphosphonates

- Etidronate
- Clodronate
- Tiludronate
- Pamidronate
- Neridronate
- Olpadronate
- Alendronate
- Ibandronate
- Risedronate
- Zoledronate



POLL OPEN

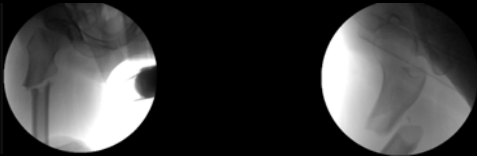
8 years - BP therapy



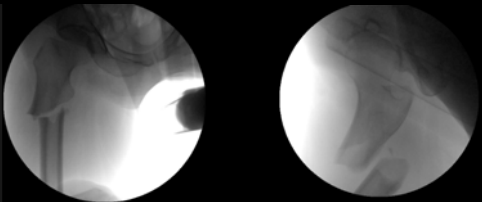
- 1- Fixed angle plate (blade, locked plate) 0%
- 2- Dynamic Plate (Sliding Hip Screw) 0%
- 3- IMN (GT-to-LT interlocking) 0%
- 4- IMN (cephalomedullary screw) 0%

POLL OPEN

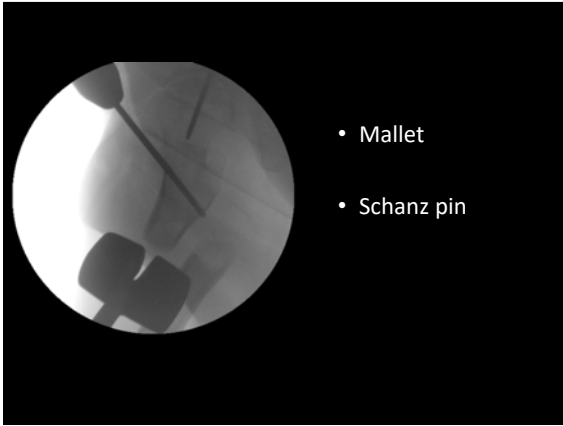
Fracture Table

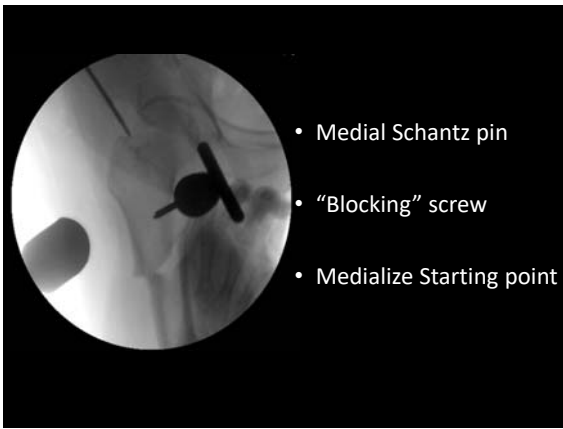


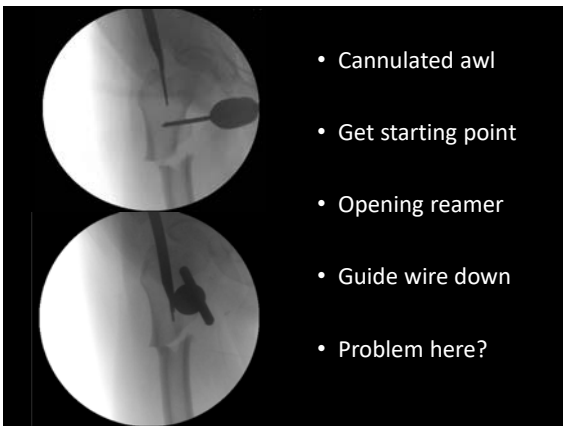
1. Open Reduction 0%
2. Percutaneous Reduction 0%
3. Closed Reduction 0%

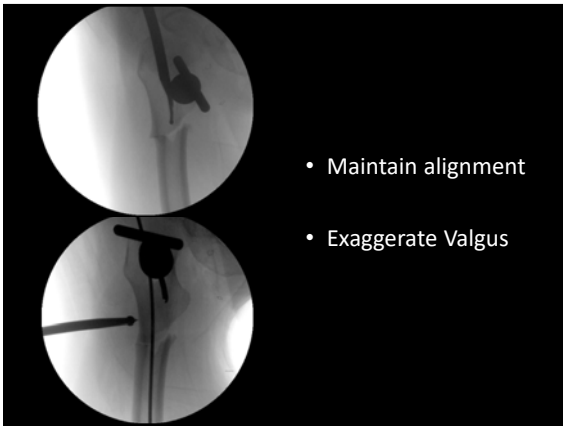


- Don't be afraid to "Make an Incision"
- Proximal fragment unstable

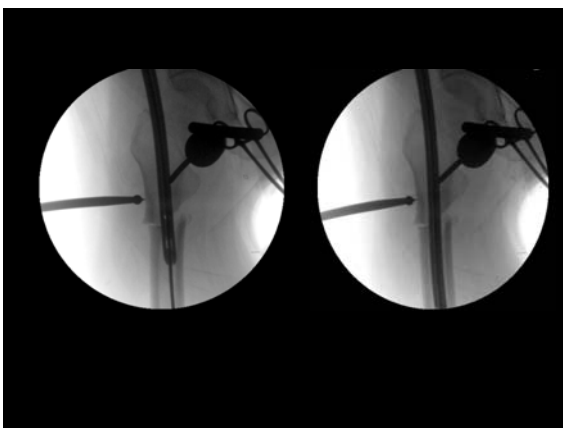






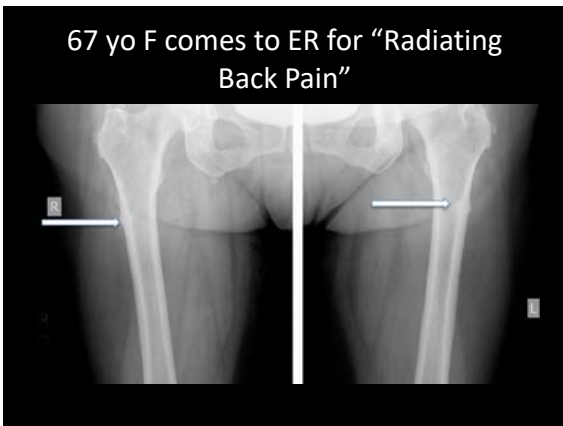









When do we Prophylactic nail ???

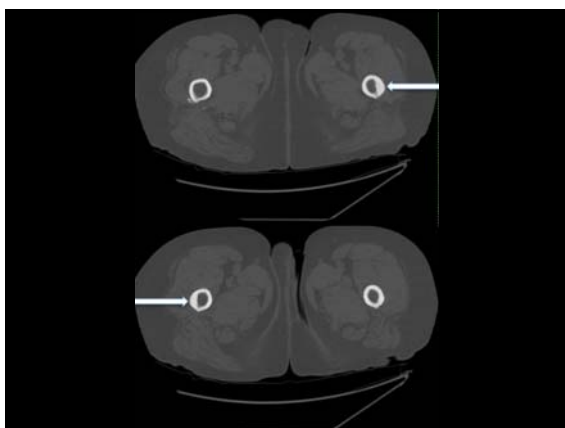


POLL OPEN



Now what?

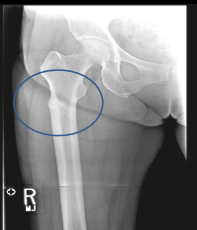
1. Pain Meds and Office Follow up 0%
2. Other Studies 0%
3. Admit and Bilateral IMN 0%
4. Schedule elective IMN as outpatient 0%



Fracture Characteristics

Incomplete:

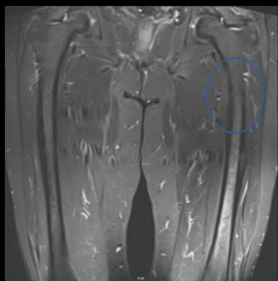
- Thigh Pain
- Lateral cortical thickening
- Radiolucent line
- MRI findings: 'lights up'

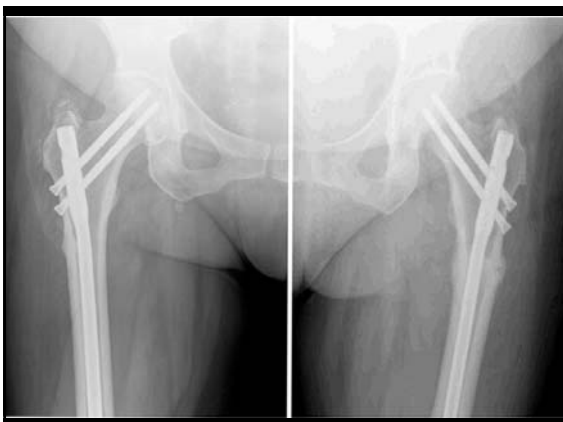


Ones that need surgery

- Presence of 'unremitting' thigh pain in spite of protected weight bearing.
- Presence of 'stress reaction' or 'black line' on MRI exceeding 50% of femoral diameter.
- Both these factors are more important if the other side has already had a fracture.

MRI showing stress reaction:
the dreaded 'black line'





How do we fix these?

- **IMN: cephalo-medullary**
 - Preferred method
 - Delayed healing noted (average 7 months)
 - No failures/non-union
- **Prox Femur Plate**
 - High failure rate

Prasam et al; CORR 2012

- Compared to patients with similar fractures not on bisphosphonates
- Osteoporosis (24% vs 5%)
- Mean cortex to shaft diameter ratio (24% vs 15%)
- **High rate of complications if treated with plate (30% vs 0%)**

Management Algorithm

