Type and Treatment of Hip Fractures

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Hip Fractures
Hip Anatomy

- Femoral head
- Femoral neck
  - Subcapital
  - Mid neck
  - Basi-cervical
- Intertrochanteric
- Subtrochanteric
- Intracapsular- FH, FN (subcap, midneck)
- Extracapsular- BC, IT, ST
Types of Hip Fractures

- **Femoral Head Fractures**
- **Pipkin Classification**
  - 1- low inf to fovea
  - 2- above fovea wt bearing
  - 3- head and fem neck
  - 4- head and acetab
  - 5- depression fx, acetab impaled on head
Types of Hip Fractures

- **Femoral Neck** (intracapsular)
  - Non-Displaced or minimally displaced
    - Stable (valgus impacted)
  - Displaced unstable
- **Young, high energy, more vertical on xray**
- **Elderly ground level fall** (similar to pictures)
Types of Hip Fractures

- Young, high energy
  - Pauwel’s Classification
  - Sheer injury
- Much different than elderly hip fracture from fall
- Blood supply cut off from fracture
- Orthopedic urgency
Types of Hip Fractures

- Peritrochanteric hip fractures (extracapsular)
- Basicervical
- Intertrochanteric
- Greater Trochanteric
- Combination of IT, GT, and LT
- Again, stable and unstable classification
Other Types of Hip Fractures

- Subtrochanteric hip fractures (some are femur fractures and not hip fractures)
- Often associated with an intertrochanteric fx
Patient Presentation

- Painful groin, lateral thigh, anterior thigh to knee
- History- simple ground level fall, mvc, mcc, fall from a height, sports injury
- Think hip fracture!!!!
- Do not send home, more studies, keep overnight if needed, keep npo after midnight and non-wt bearing
Radiology of Hip Fractures

- Xrays
  - AP Pelvis
  - AP, Lateral painful hip
  - AP, Lateral femur if first 3 negative
- MRI if groin pain and xrays negative
- CT scan if MRI not available or if unable to do MRI (pace maker)
- Traction view in ER
Physical Exam

- Usually not a lot to do unless non-displaced or stress fracture
- Leg externally rotated and shortened
- Check neurovascular status
- If high energy, if bone looks close to skin on xray, look for blood, cut clothes off and look for open fracture
What to do?

- Non displaced or too sick for surgery
  - Non operative treatment
  - Non wt bear with walker or crutches or wheelchair
  - Home or rehab unit
  - Follow up 1-2 weeks new x-rays
- Completion 6-8 weeks
- Increase wt bearing progressively to pain
  - WBAT if not demented
  - Protect WB if demented or fix if medically able
Pipkin Femoral Head Fractures

- 1s can be treated non op or remove fragment
- 2s ORIF fem head
- 3s ORIF young patient, replace older with hemi or total hip (previous arthritis or active)
- 4s ORIF acetab and ORIF head or replace with total
- 5s reduce hip, remove loose bodies if need be
Physical Therapy
Pipkin Fractures

• If ORIF- flat foot only with walker or crutches until signs of healing 8-12 weeks
  – Can MRI and make sure head is living
• If replaced, wt bear as tolerated with walker or crutches post op day 1 just like total hip protocol
• If ORIF with replacement, protect wt bear until acetabulum healed (8-12 weeks, then follow protocol for THA)
• If anterior approach for THA no precautions, if ant lateral or posterior, hip precautions 6 weeks
Therapy for Femoral Neck Fractures

- Elderly, GLF, Stable subcap or mid neck, CRPP with 3 cannulated screws- WBAT with walker

- Young high energy subcap or mid neck, urgently get to OR, perform ORIF with anatomic reduction
  - Non wt or flat foot only, 6 to 8 weeks, then progress slowly to WBAT with walker or crutches
Femoral Neck Fractures

- Elderly displaced or younger displaced and unable to perform ORIF, then hemiarthroplasty or total hip

- Indications for total hip
  - Previous groin pain and arthritis
  - Very active, would do better clinically with total, not demented

- Weight bear as tolerated with walker or crutches
  - Total hip protocols
Intertrochanteric Hip Fractures

- Rare non-displaced ones can go flat foot weight bear with walker and advance as tolerated 4-6 weeks
- Displaced ones need ORIF, lateral incision
- Plates and screws or Intramedullary Nail???
- Reverse obliques, unstable 3 or 4 parts and subtrochs should have IM nail
- WBAT with IM nail, walker or crutches, nail is load sharing device
- No hip precautions
Subtrochanteric Hip Fractures

- ORIF with IM nail
- Use of fracture table
- Rare to use plate and screws here
- WBAT with IM nail, crutches or walker advance as tolerated
Summary

• Start out with flat foot touch down with ORIF hips young patients
  - No non wt bearing, more forces across hip holding hip in air than touch down to ground

• All hemis, totals and nailings should be WBAT unless a specified reason given

• Hip fractures take from 6 to 12 weeks to typically heal with subtrouchs taking the longest

• Hemiarthroplasties do well for older, less active patients

• Totals have better outcomes than hemis in active patients
Summary

• Totals can be anterior approach (no hip precautions and WBAT)
  – Anterior lateral approach (Hardinge), hip precautions 6 weeks
  – Posterior approach (Kocher-Langenbach), hip precautions 6 weeks

• If right leg, driving almost immediate with Anterior approach, 4 weeks typically for other 2
Remember, Kids can hop, Octogenerians, not so much!!!!!!!
CONCLUSIONS

• If the technique is bad then it should never be used
• ...regardless of the circumstance

Distal Femoral Case by Dr. Maxson when he was a fellow with us.
CONCLUSIONS

• Know your limitations
• Bad techniques (surgical, nursing or physical therapy) result in bad outcomes
• Not the fault of the nail, choose wisely!

Courtesy AJ Shah, MD
Before his trauma fellowship with FOI!
THANK YOU

ORTHOPAEDIC TRAUMA SERVICE