


Ipsilateral Neck-Shaft Fractures Mechanism Of Injury

- High Energy Trauma
- Longitudinal Force
- Flexed & Abducted Hip
- Flexed Knee



Ipsilateral Neck-Shaft Fractures Resultant Femoral Neck Fracture


- Basilar In Location
- Vertical In Orientation
- Displacement Variable
 - Hard To Visualize
 - Sub-Optimal X-Rays
 - Missed Diagnosis



Ipsilateral Neck-Shaft Fractures Literature


- Up To 1/3 Femoral Neck Fractures Are Missed
- When The Femoral Neck Fracture Is Missed
Treatment Options Later Become More Limited And
Difficult With Outcomes Worse
- Dedicated Hip X-Rays & CT Scans On Initial Trauma
Work-Up Decrease Incidence Of Missed Fractures

My Case 1982




Ipsilateral Neck-Shaft Fractures Knee Injuries

- Knee Injuries In 25% - 50%
 - Patella Fractures
 - Femoral Condyles
 - PCL Injuries
- Easily Missed
- Pre-Op Exam Difficult
- High Index Of Suspicion
- Late Morbidity




Ipsilateral Neck-Shaft Fractures Treatment

Wide Consensus That
Fractures Of The Hip
Should Take
Precedence Over The
Femoral Shaft Fracture



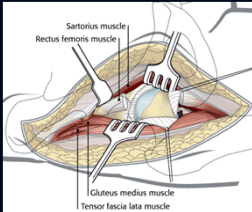
Ipsilateral Neck-Shaft Fractures Consequences Of The Neck Fracture

- Avascular Necrosis
- Non-Union
- Varus Mal-Union
- All Challenging To Treat
- Arthroplasty Unattractive




Ipsilateral Neck-Shaft Fractures Femoral Neck Fracture

- Non-Displaced Fxs In-Situ ORIF
- Displaced Fractures
 - Direct Anterior Approach
 - Antero-Lateral Approach
- Goal Is Anatomical Reduction



Ipsilateral Neck-Shaft Fractures Treatment Alternatives

- Reconstruction Nail
- Antegrade Nail & Screws @ Nail
- Cannulated Screws & Retrograde Nail
- SHS And Retrograde Nail
- Femoral Neck Screws And Plate




Ipsilateral Neck-Shaft Fractures Treatment Alternatives

- Reconstruction Nail
- Antegrade Nail & Screws @ Nail
- Large Screws & Retrograde Nail
- SHS And Retrograde Nail
- Femoral Neck Screws And Plate




Ipsilateral Neck-Shaft Fractures Treatment Alternatives

- Reconstruction Nail
- Antegrade Nail & Screws @ Nail
- **Cannulated Screws & Retrograde Nail**
- SHS And Retrograde Nail
- Femoral Neck Screws And Plate




Ipsilateral Neck-Shaft Fractures Treatment Alternatives

- Reconstruction Nail
- Antegrade Nail & Screws @ Nail
- Cannulated Screws & Retrograde Nail
- **SHS And Retrograde Nail**
- Femoral Neck Screws And Plate




Ipsilateral Neck-Shaft Fractures Treatment Alternatives

- Reconstruction Nail
- Antegrade Nail & Screws @ Nail
- Cannulated Screws & Retrograde Nail
- SHS And Retrograde Nail
- **Femoral Neck Screws And Plate**



Ipsilateral Neck-Shaft Fractures Treatment

- Anatomical Reduction & Stable Internal Fixation Of The Femoral Neck Fracture Is Mandatory
- Attempts To Fix Both Fractures With One Implant Have Been Unpredictable



Alho A. Concurrent Ipsilateral Fractures Of The Hip & Femoral Shaft: A Meta-Analysis Of 659 Cases
Acta Orthop Scand 67: 19-28, 1996

59 Studies
78% Motor Vehicle Accidents, Median Age 34 Yrs
1/3rd Had Multiple Injuries
1/2 Had Ipsilateral Knee Injuries
Femoral Neck Fracture Mostly Basilar In Location
AVN Rate 3%, 99% Healed
Locked Nails Gave Better Results Than Unlocked Nails or Plates
Reconstruction Nails Gave Equal Results To Separate ORIF

Tornetta P, Kain M, Creevy W. Diagnosis of Femoral Neck Fractures in Patients With a Femoral Shaft Fracture
J Bone Joint Surg 89: 39-43, 2007

Developed A Protocol To Diagnose A Femoral Neck Fracture In Pts With A Shaft Fx

Dedicated AP Internal Rotation Plain X-Ray; 2mm CT Scan Thru Hip; & Intra-Op Fluoroscopic AP And Lateral Views Prior To And After Fixation

N=268 Femoral Shaft Fractures
Identified 16 Associated Femoral Neck Fractures Using Protocol

Conclusion: 91% Reduction In Delay In Diagnosis Compared To Year Prior To Protocol


Ostrum R, Tornetta P, Watson J, et al. Ipsilateral Proximal Femur & Shaft Fractures Treated With Hips Screws & Reamed Retrograde IM Nail
Clin Orthop Relat Res 472: 2751-2758, 2014
N=92
40 SHS 52 Multiple Cannulated Screws All Retrograde Nail

Femoral Neck Union Rate 98%
Femoral Shaft Union Rate 91%
Proximal Femoral Mal-Union 5%
Avascular Necrosis 1%
No Difference Between SHS Vs Cannulated Screws

Conclusion: Independent Screw Fixation Of The Femoral Neck Fracture & Reamed Retrograde IM Nailing Leads To High Rates Of Union & Low Complication Rates

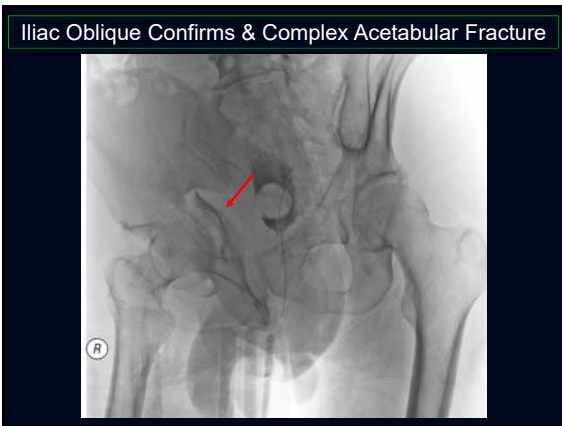
Ipsilateral Neck-Shaft Fractures Conclusions

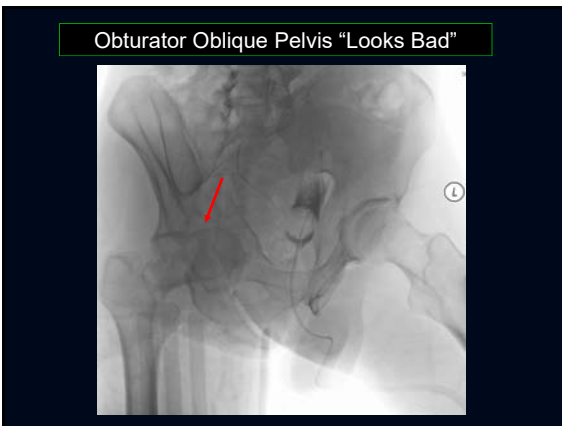
- Independent Fixation Both Fractures
- Often Requires Open Reduction Of Neck Fx
 - Cannulated Screws Or SHS
 - Retrograde Locked Nailing
- Reconstruction Nails Only In Truly Non-Displaced Femoral Neck Fractures

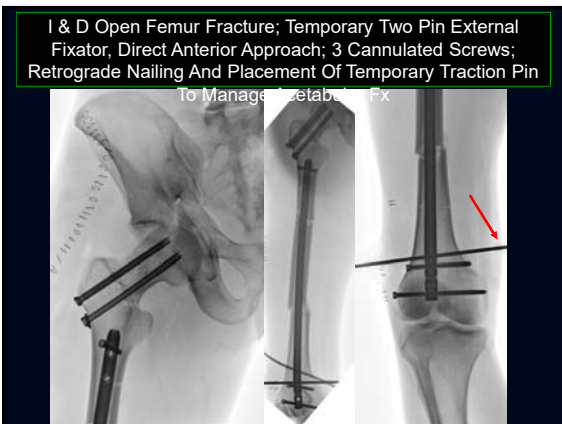


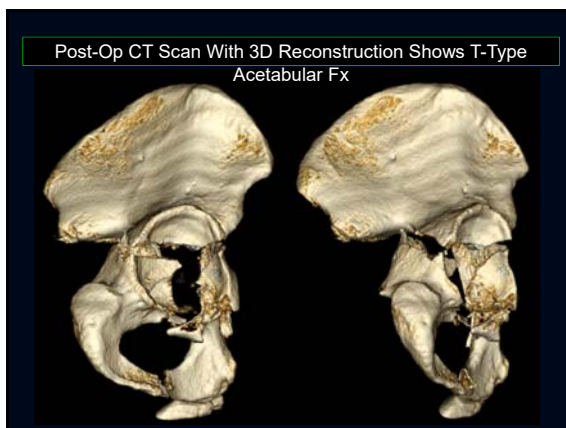
Illustrative Cases

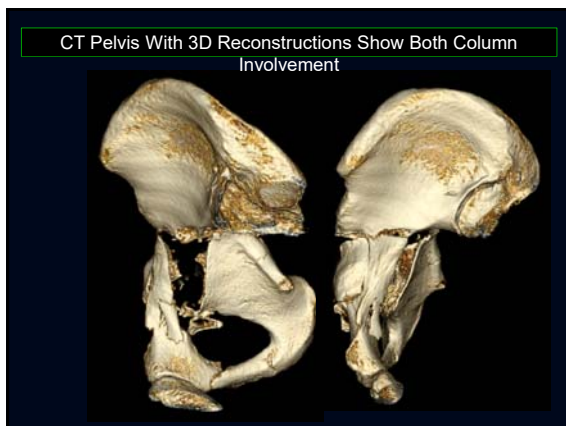


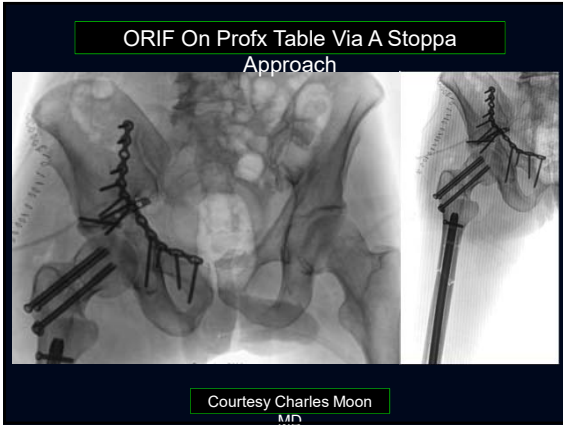


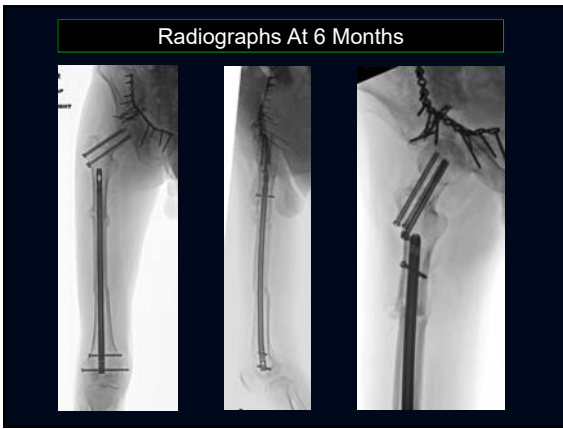


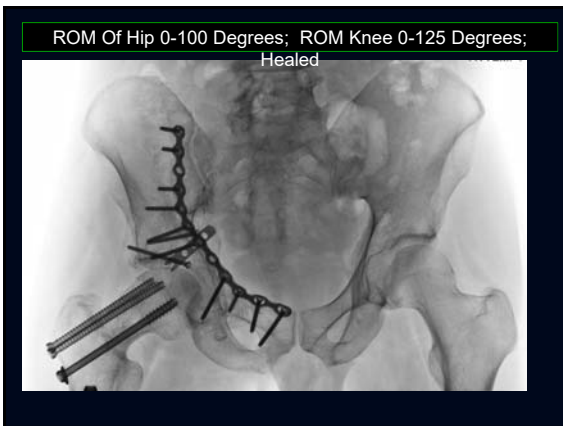


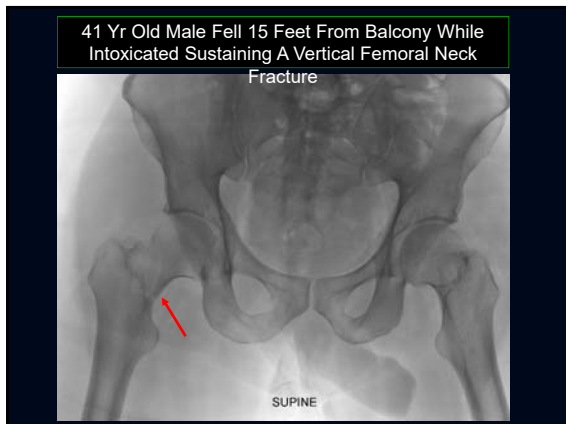




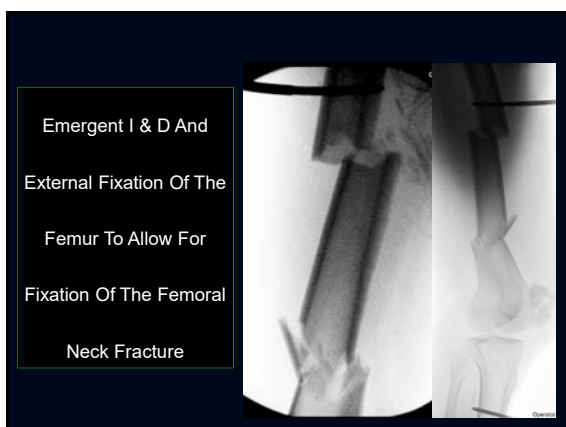


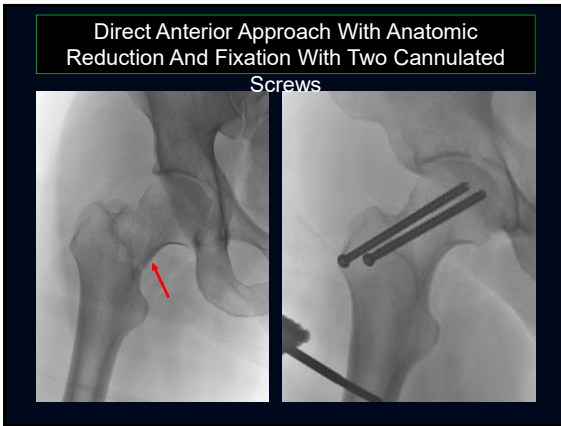




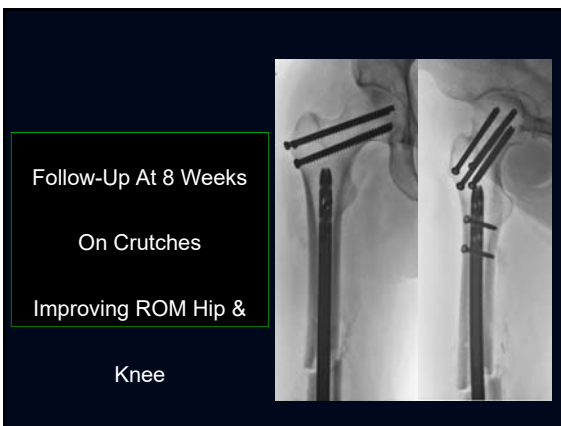













ROM Hip 0-90 Degrees
ROM Knee 0-70
Degrees
Lost To Follow-Up



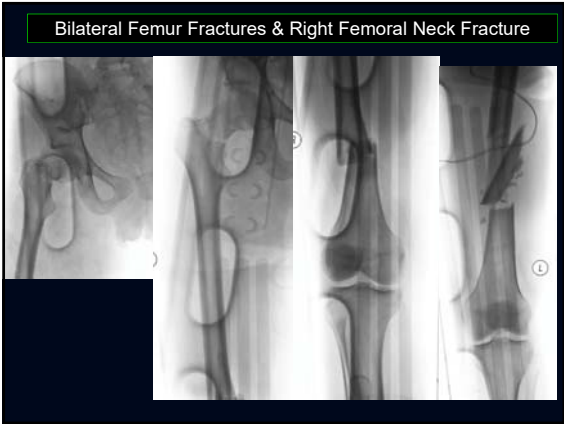
24 Yr Swedish Female Working /Living In LA Related To Film Industry
Suicide Attempt Following Jump From 6th Story Apartment Building

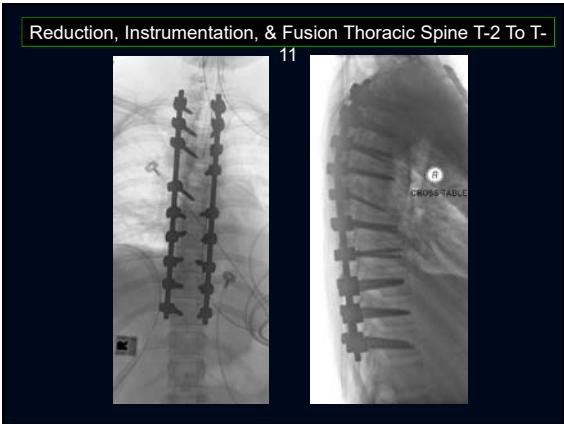
Hemodynamically Unstable Pelvis Fracture
Bilateral Pneumothorax & Multiple Rib Fractures
Unstable Thoracic Spine Fracture and T-6 Paraplegia
Bilateral Closed Femur Fractures
Displaced Right Femoral Neck Fracture
Left Supracondylar Humerus Fracture

Distraction-Compression Injury & Burst Fracture T-Spine



Complete T-6 Paraplegic



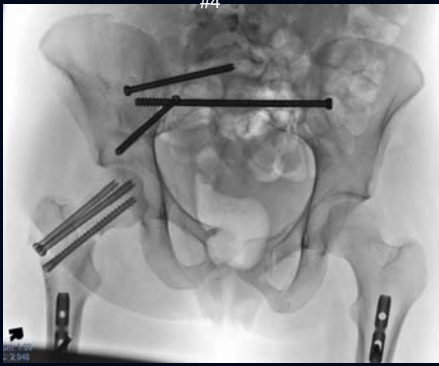




Post-Op ORIF Right Femur



Closed Reduction & Percutaneous Pinning Of The Pelvis POD #4



ORIF Segmental Humerus, Clavicle, & Calcaneus Post-Op Day 9



