Point / Counterpoint - Intertrochanteric Fractures: The Role For SHS

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November 21, 2016

Tips & Tricks: Proximal Femur Fractures
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- Paid Consultant for Stryker Trauma
- Royalties: Stryker; SLACK Inc.
- Research Support: OTA
- Deputy Editor: JAAOS
- Editorial Review Board: JBJS; CORR; JOT
- Organizational Boards: OTA, Ohio Orthopaedic Society

Archdeacon Concept:

✓ If The Reduction Is Anatomic With Bone To Bone Contact, Then Sliding Hip Screw Has A Role.

✓ If The Reduction Is Not Anatomic & In Comminuted, Unstable Fx's, The Implant Serves As A Bridging Device.

PLATE

NAIL

Sliding Hip Screw - Advantages

Success in Peritroch fx's
- Average 95% Healing Rate
- Low Rates Of Fatigue Failure
  - Dependent On Implant Position & Fracture Reduction / Stability
- Most Orthopods Familiar W/ Device

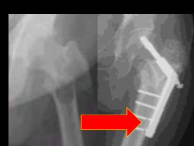
» Waddell et al; J Trauma 1979
» Wile et al; CORR 1983
» Ruff et al; J Trauma 1986

Sliding Hip Screw - Concerns

Successful Healing W/O Implant Failure Depends On Appropriate Implant Position
- Tip – Apex Distance < 25mm

High Rates Of Failure And Loss Of Reduction In Unstable Fractures
- Reverse Obliquity Fx's
- Lateral Wall Fx's

» Haidukewych et al; JBJS 2000



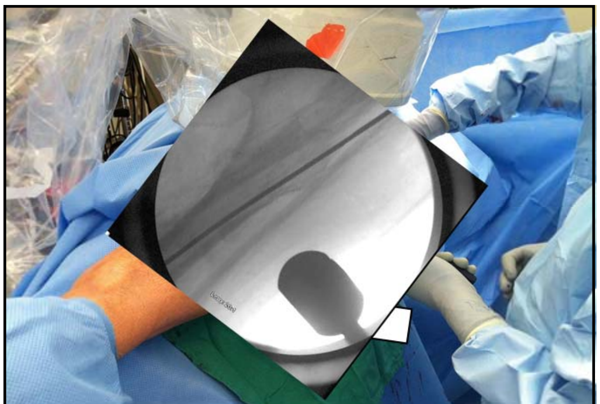
Sliding Hip Screw - Concerns

Unstable, Comminuted Fx's Difficult To Treat
- May Prevent Sliding Of Screw
- Predispose To Head Cut-out
- Medialization Of Shaft
- Head May Spin On Screw B/C High Torsional Loads

Does Not Promote Axial Loading Of Fracture

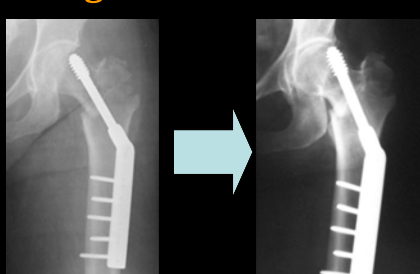
Stable Fracture Reduction – Prevent Unnecessary Collapse

Obtain Reduction Prior To Incision
- Fx Table
  - Gentle Axial Traction
  - Internal Rotation
- Highly Comminuted Fractures (With An Unstable Lesser Trochanter)
  - Proximal Thigh Support To Correct Posterior Angulation
  - Correct Proximal Varus Malalignment
    - Medially Directed Force



Medially Directed Force on Femur Reduces Varus

Sliding Hip Screw – Concerns: Lag Screw Cut-Out



Sliding Hip Screw – Concerns: Lag Screw Cut-Out

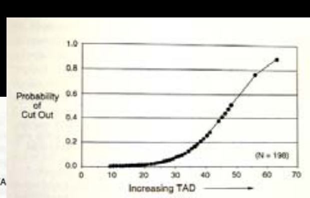
- Implant Designed To Allow Shortening And Impaction = Deformity Or Malunion With Fracture Healing
- Osteoporotic Bone
  - Predisposes To Failure If Implant Position Compromised
- Implant Position
  - Most Predictive Factor For Failure Of Fixation (Cut-Out)

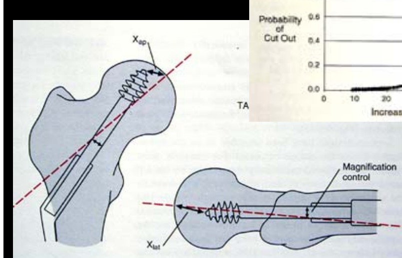
Ideal "Tip – Apex Distance"

- Lag Screw Placement
  - Subchondral Bone
  - Center Of The Femoral Head
  - Both The A/P And Lateral Projections
    - Tip-apex Distance < 25 Mm
- Reduces The Risk Of "Cut-out" More Than Any Other Factor

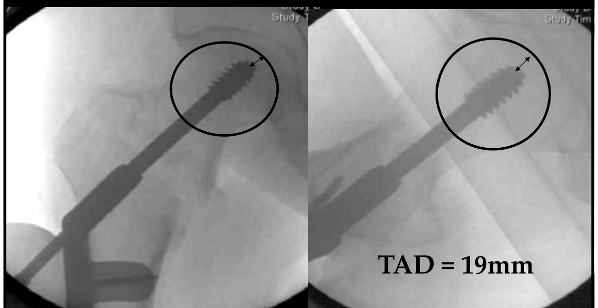
Ideal "Tip – Apex Distance"

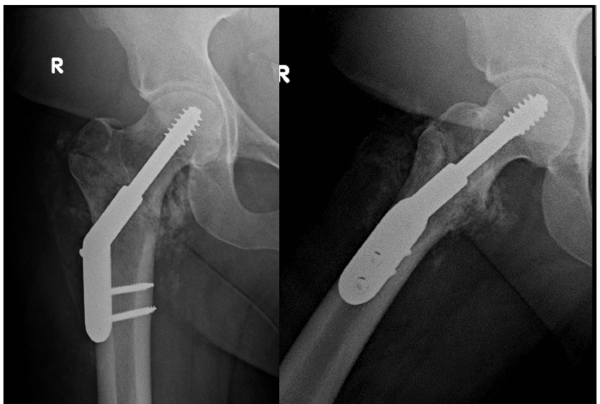
TAD = $X_{ap} + X_{lat}$

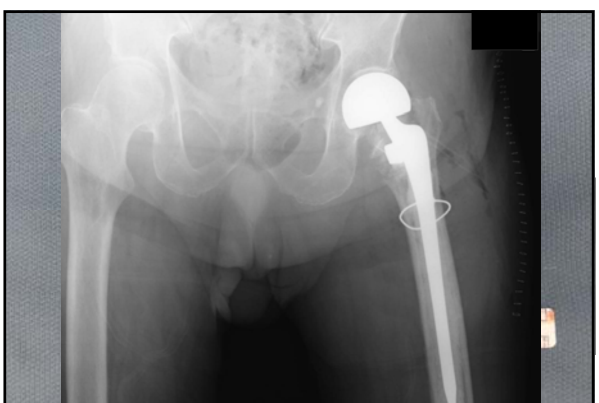


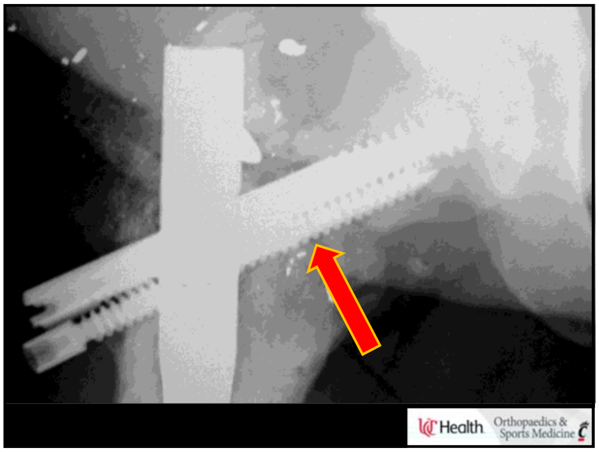


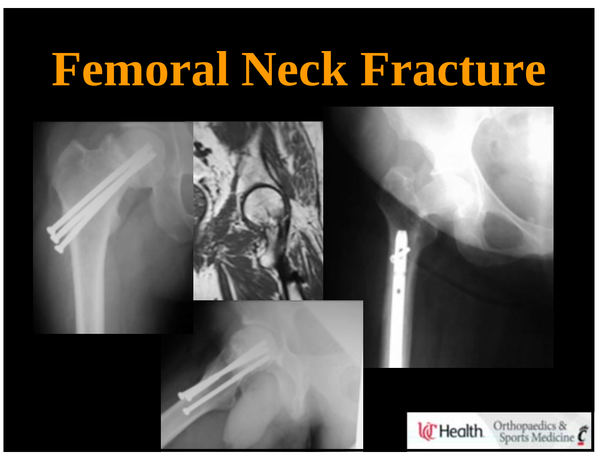
Ideal "Tip – Apex Distance"

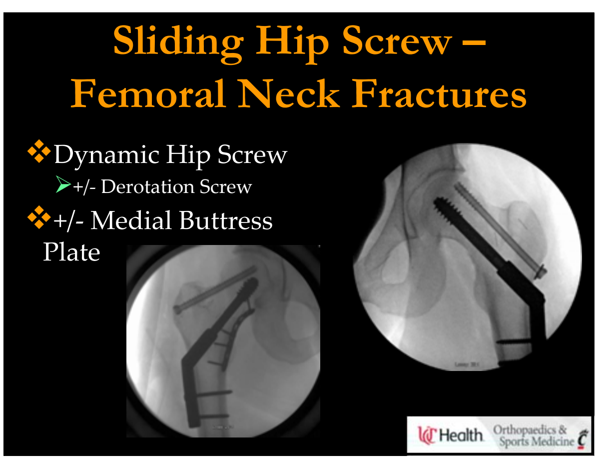


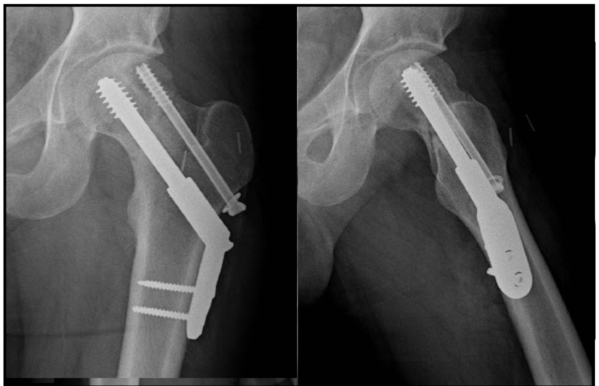







Femoral Neck Fracture


Sliding Hip Screw –
Femoral Neck Fractures
Dynamic Hip Screw
+/- Derotation Screw
+/- Medial Buttress
Plate



Summary

- SHS Indications
  - Stable IT Fx With Near Anatomic Reduction
  - High Energy Vertical Femoral Neck Fx's
- Reduce Risk Of Failure
  - Stable Reduction
  - Prevent Varus
  - Tip-Apex Distance < 25 mm