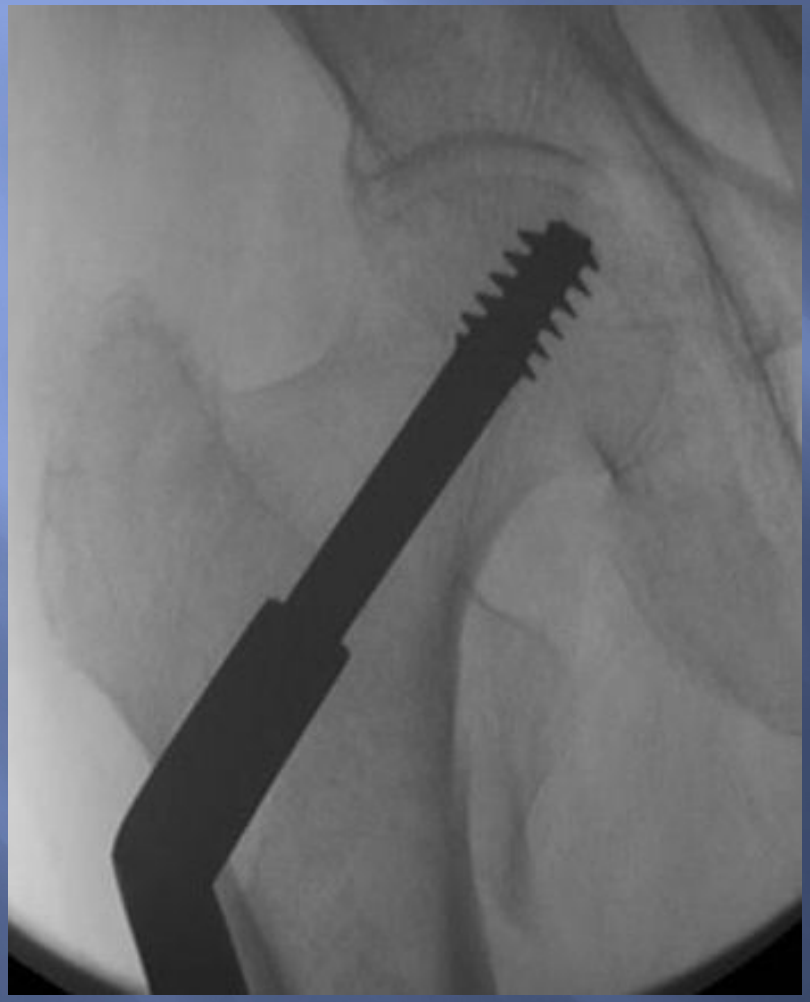
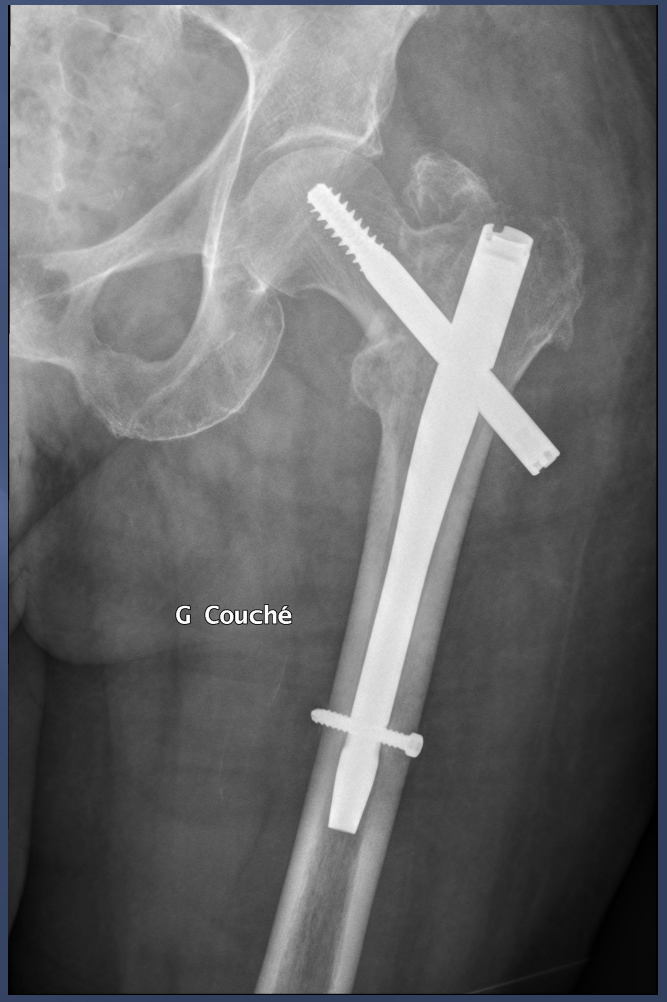
TIPS AND TRICKS FOR FIXATION OF PROXIMAL FEMORAL FRACTURES

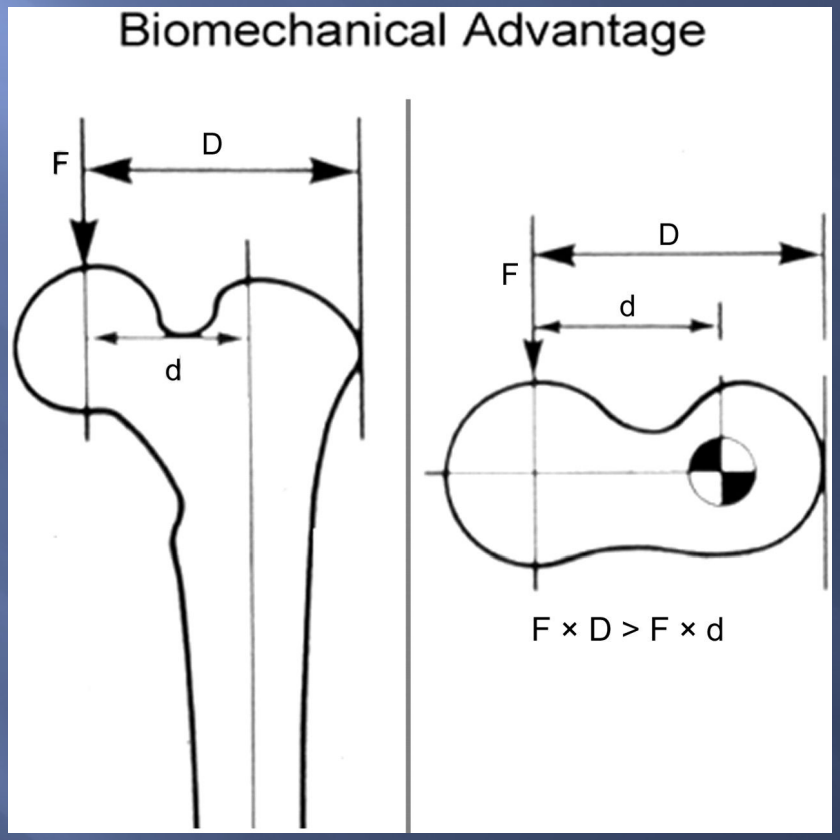
Stephen Aldridge

DHS vs Nailing





DHS vs Nailing



Intramedullary so does not cut out laterally

DHS vs Nailing

	Studies		Short nails	DHS	Favours
Pain	8		36.5%	33.5%	Neither
Mortality	23		18.4%	19.3%	Neither
Return home	9		42.7%	42.4%	Neither
Cut out	27		3.1%	2.6%	Neither
Nonunion	14		0.7%	0.7%	Neither
Femoral fracture	26		2.3%	0.1%	DHS
Technical complications	28		8.0%	4.0%	DHS
Reoperation rate	23		6.2%	3.8%	DHS
Deep infection	18		1.0%	0.9%	Neither

Parker 2005 Cochrane review

DHS vs Nailing

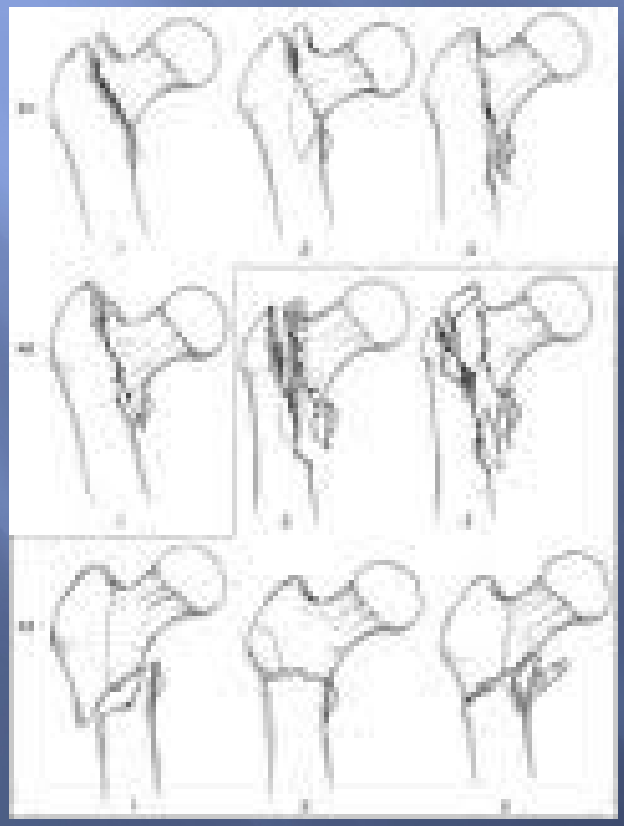
- Some softer outcomes in favour of nailing:
  - Leg length discrepency
  - Blood loss
  - Fluoro time
  - Operative time

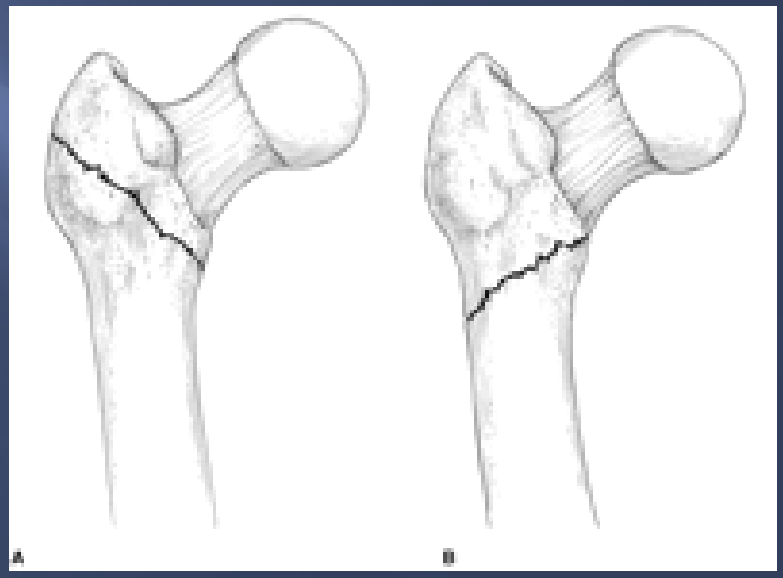
Baumgaertner 1998

Hardy1998

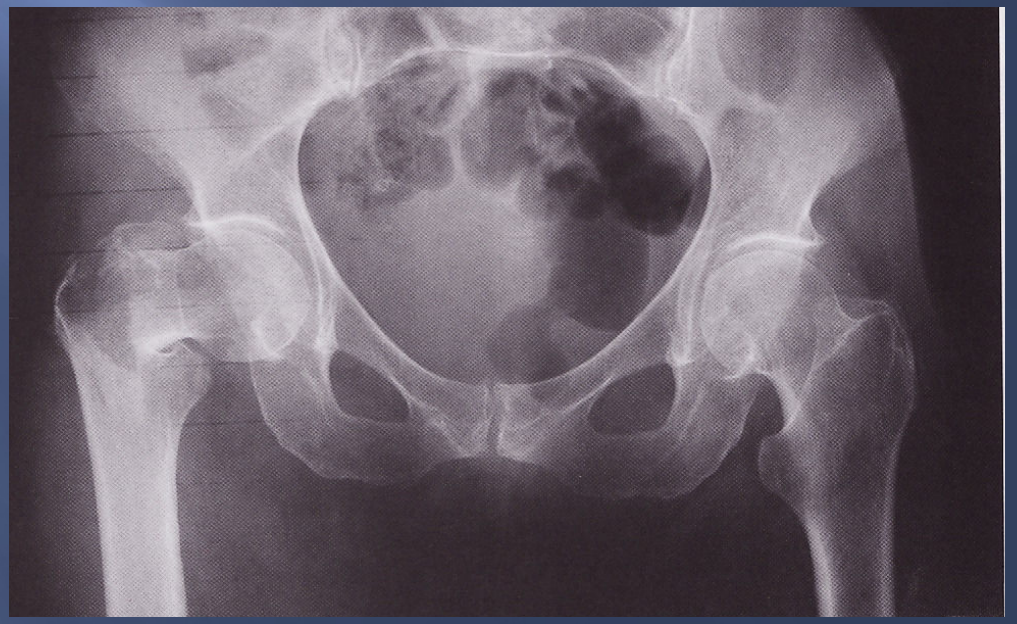
DHS vs Nailing

- Stable vs unstable fractures
- Reverse oblique fractures





DHS

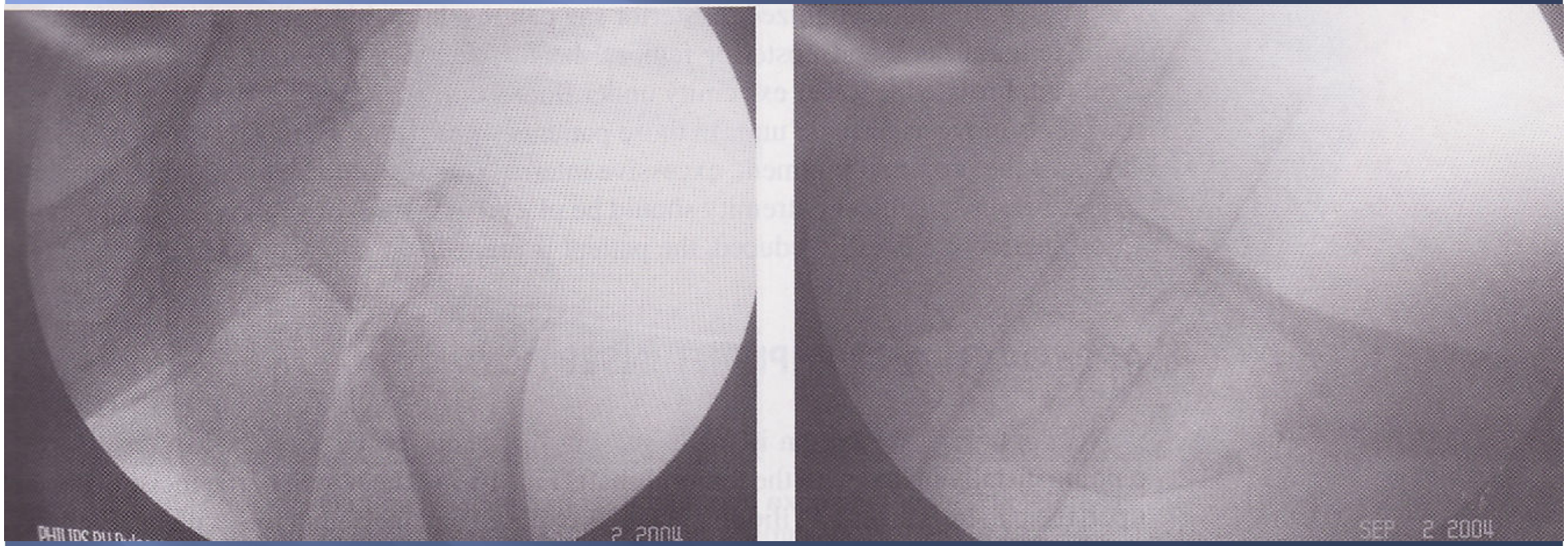


DHS

- Setting up
  - II
  - Traction
  - Acceptable Reduction
  - Consider direction of guidewire at this stage

DHS

DHS



DHS

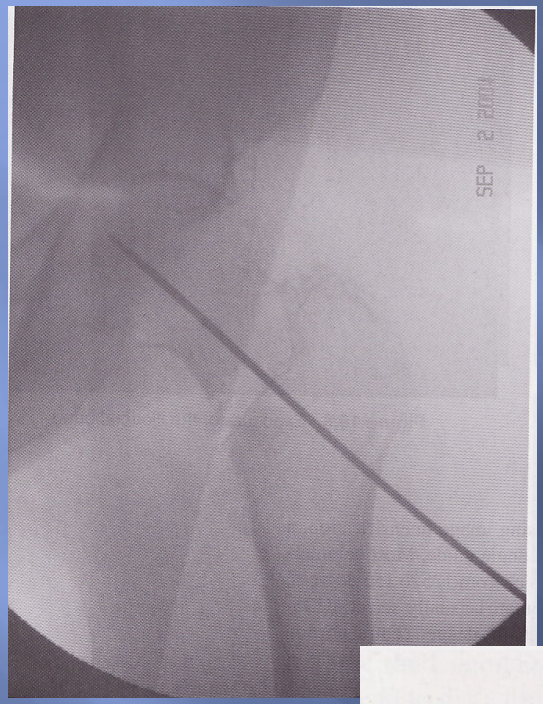
- Approach
  - Distal to trochanter
  - Split fascia lata
  - Elevate vastus lateralis
  - Clear remaining muscle fron periosteum using Bristow's
  - Holman's retractor + Self-retainer

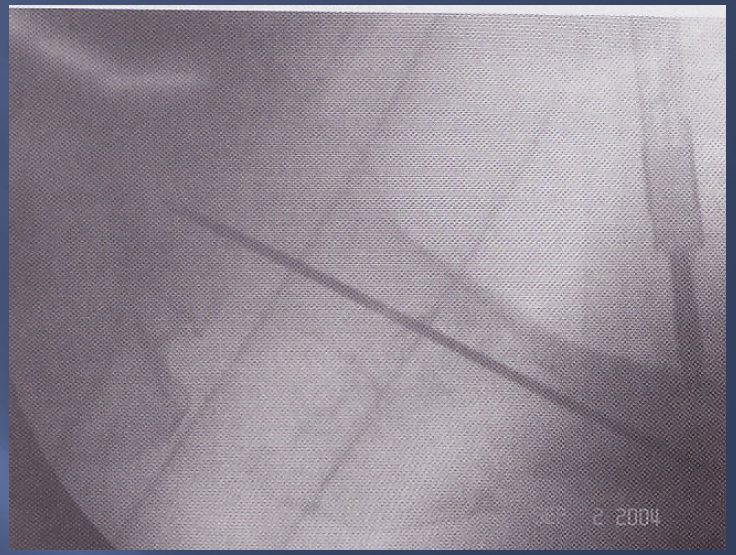
DHS

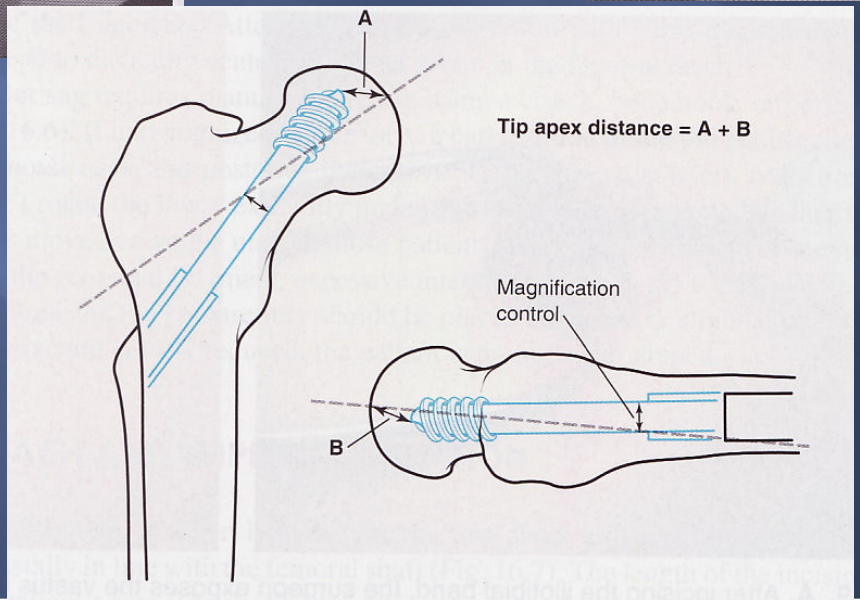
- Guidewire
  - Aim for centre of head on both views
  - Centre of neck and head on lateral

  - Correcting placement
    - Leave wire in place and fire parallel wire
    - Start on reverse if using the same wire with close entry point

DHS







DHS

- Difficult reduction techniques
  - Sagging femur – crutch
  - Open reduction
    - Wires
    - Holman's
    - Steinmann pins
  - Indirect reduction

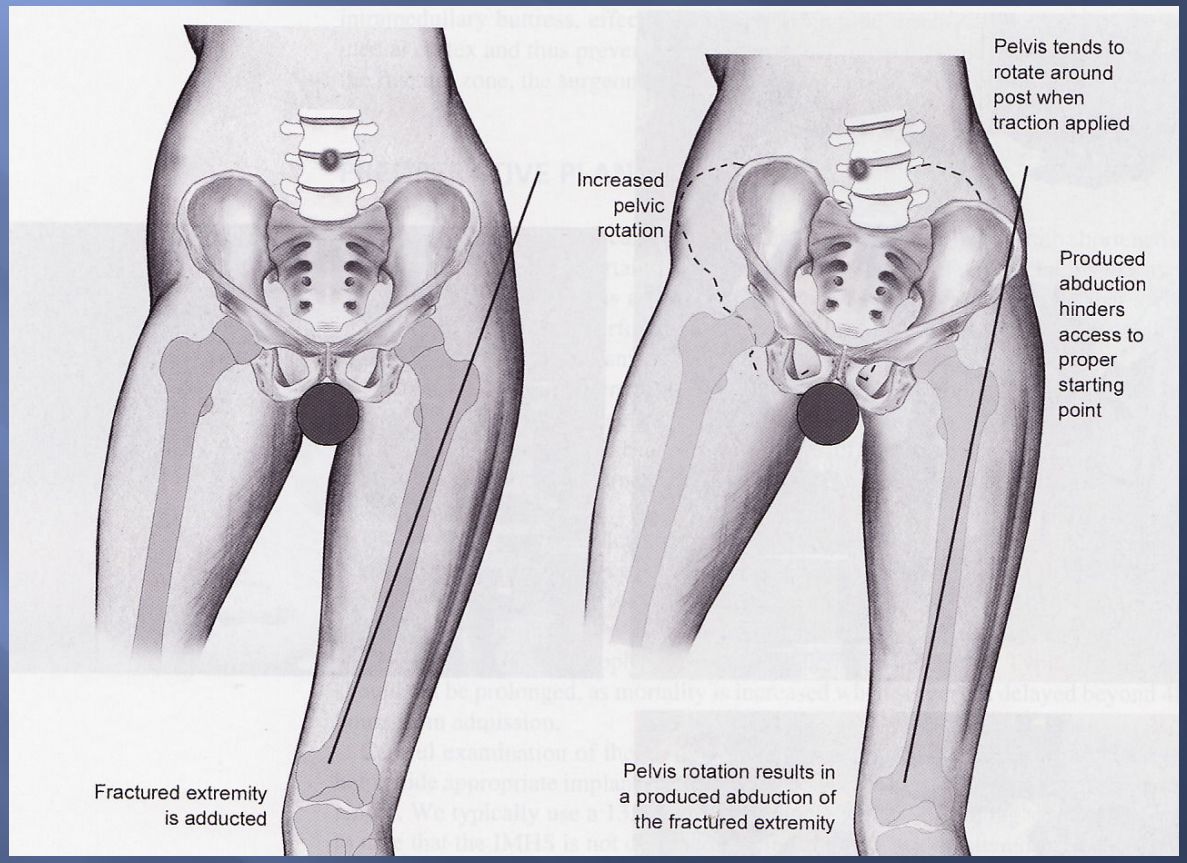
DHS

- Complications
  - Cut out
    - Anterosuperior screw placement
    - Tip apex distance > 25mm
    - Collapse > sliding capacity (>10mm available slide)
    - Inability to get stable reduction
    - Severe osteoporosis
  - Wound infection
    - Operating time, UTI, confusion, decubitus ulcers

Intramedullary Nail

- Setting up
  - II
  - Traction
  - Acceptable Reduction
  - Consider direction of intramedullary wire

Intramedullary Nail



Intramedullary Nail

- Approach
  - Mark out Gt trochanter and line of guidewire entry
  - Incision through skin 5cm from tip of GT
  - Incision through fascia more proximal, and longer
    - Avoid losing entry point
    - Avoid fighting the fascia when inserting nail

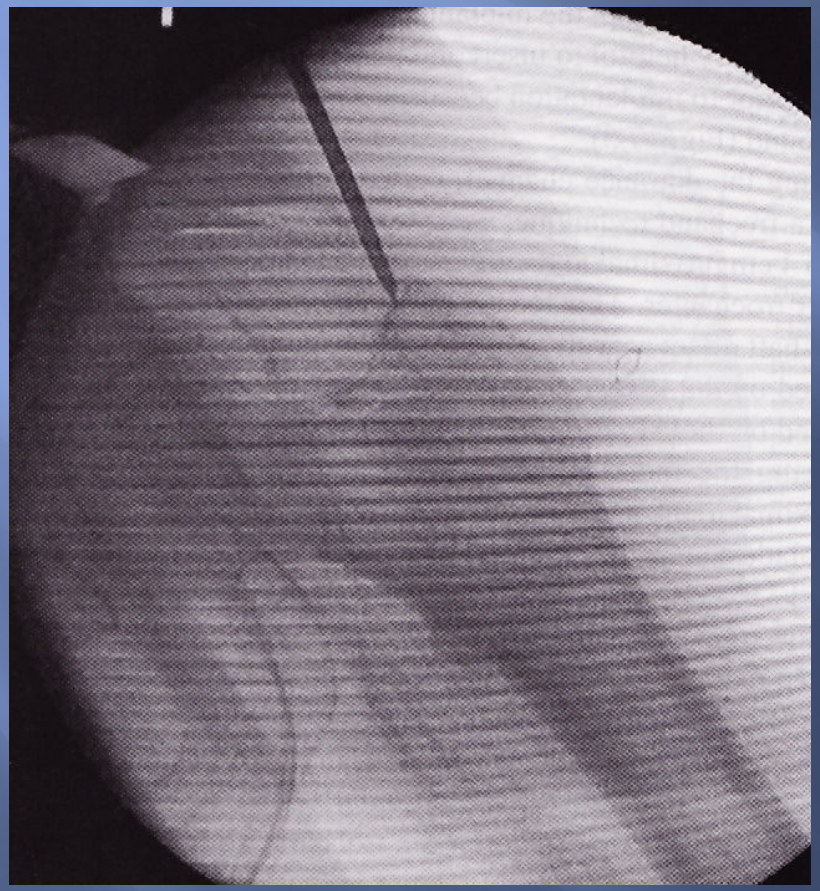
Intramedullary Nail

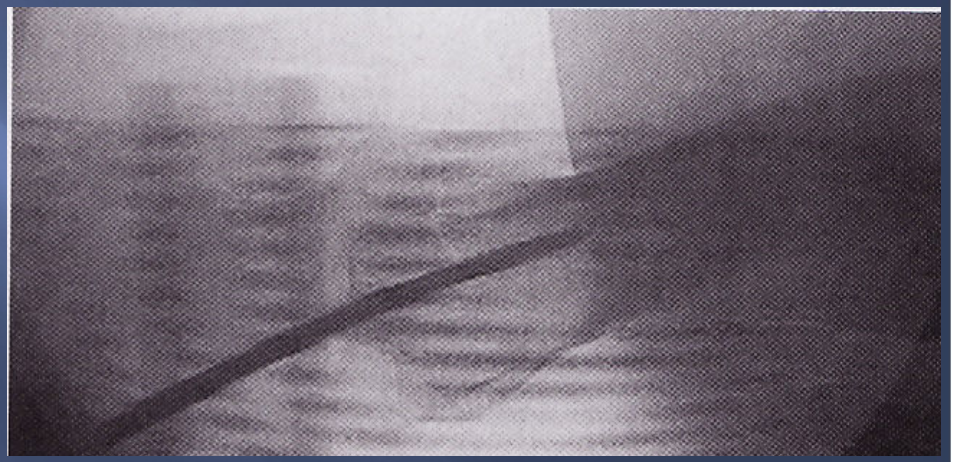
- Open reduction
  - Low threshold for open reduction as once the nail is inserted and reamed difficult to address most displacements
  - Same approach as for DHS, but can be done through smaller incision
  - Be clear what you want to do to undertake and maintain the reduction – circlage, reduction forceps?

Intramedullary Nail

- Entry point
  - Tip trochanter/Medial
    - NB lateral entry nails
  - Account for anterior bow of femur
    - Point tends to be more posterior than expected
  - Guidewire driven past lesser trochanter to allow prox reaming

Intramedullary Nail





Intramedullary Nail

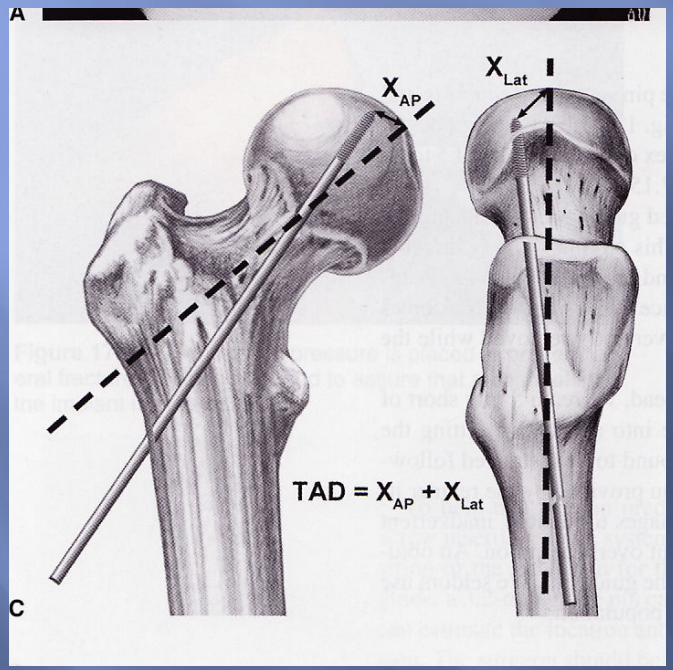
Intramedullary Nail

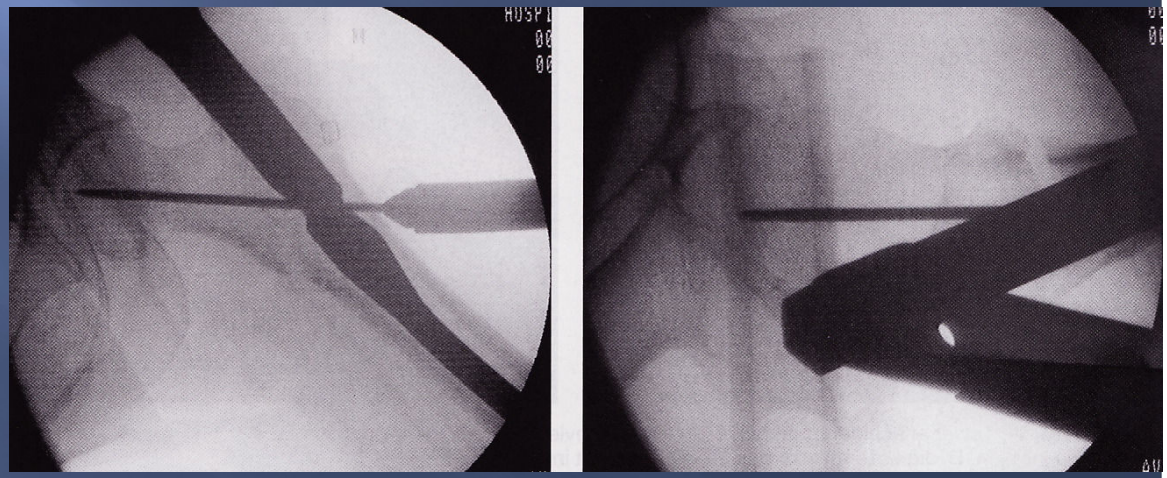
- Proximal Reaming
  - Be generous in diameter
  - Confirm that you are reaming, not just displacing fracture
- Distal reaming

Intramedullary Nail

- Nail insertion
  - Avoid hitting if possible
  - NB twisting fluted nails – long spiral extension
  - II to confirm inserted enough
- Head wire insertion
  - Reduction fixed at time of wire insertion
  - Aim for centre of head in both planes
  - If not in centre of neck then shaft is likely sagging or prox fragment flexed

Intramedullary Nail





Intramedullary Nail

- Screw insertion
  - Left side tends to displace fracture
  - Right side tends to reduce fracturer

Intramedullary Nail

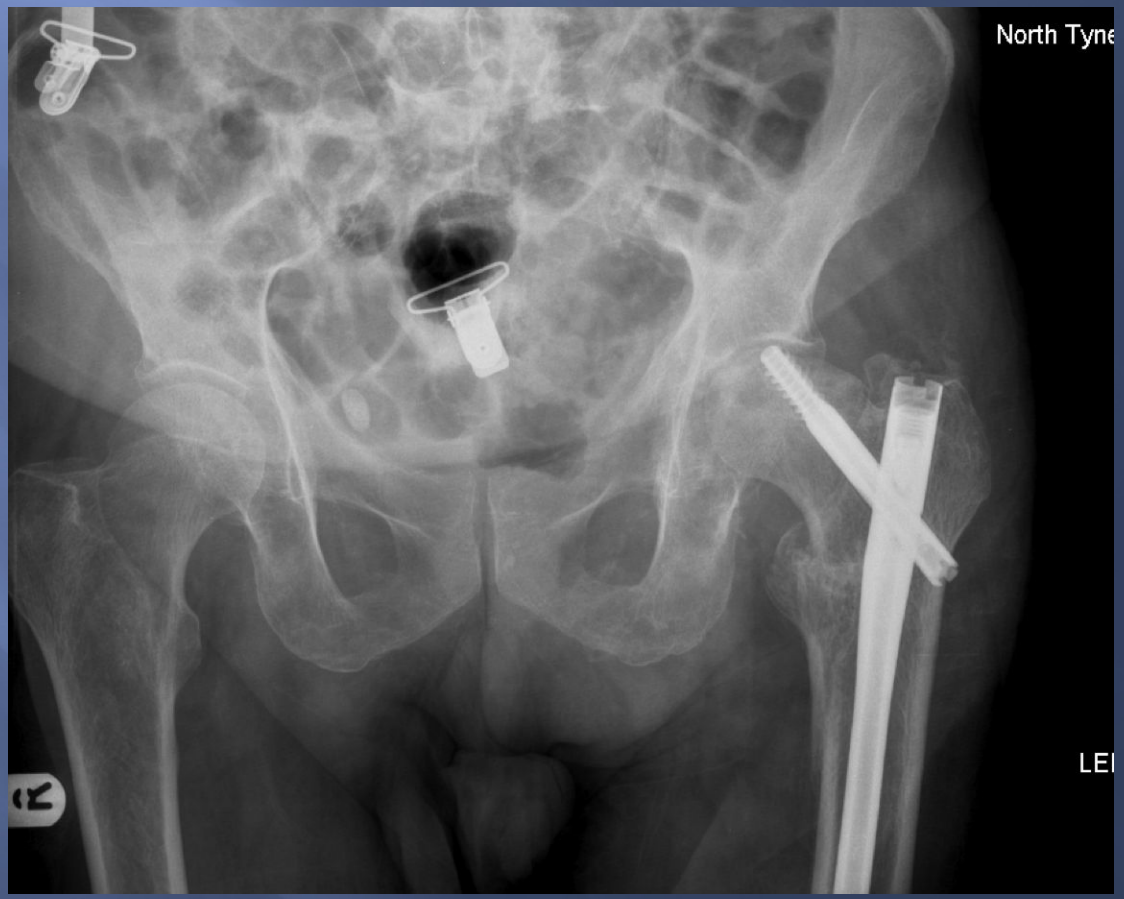
- Difficult reduction
  - Use the aiming guide to control distal fragment
    - Sagging and some flexion
  - Low threshold for open reduction
    - Wires
    - Holman's
    - Steinmann pins
  - Not able to do indirect reduction

Intramedullary Nail

- Complications
  - Intraoperative Fracture
  - Cut out
    - Varus neck shaft angle
    - Tip apex distance > 25mm
    - Increased offset
  - Periprosthetic fracture
    - ? Only use long nails
  - Non-union

Intramedullary Nail

Intramedullary Nail


North Tyne
LEI


G Couché

Rehabilitation

- Aim should be for full weight bearing from the outset

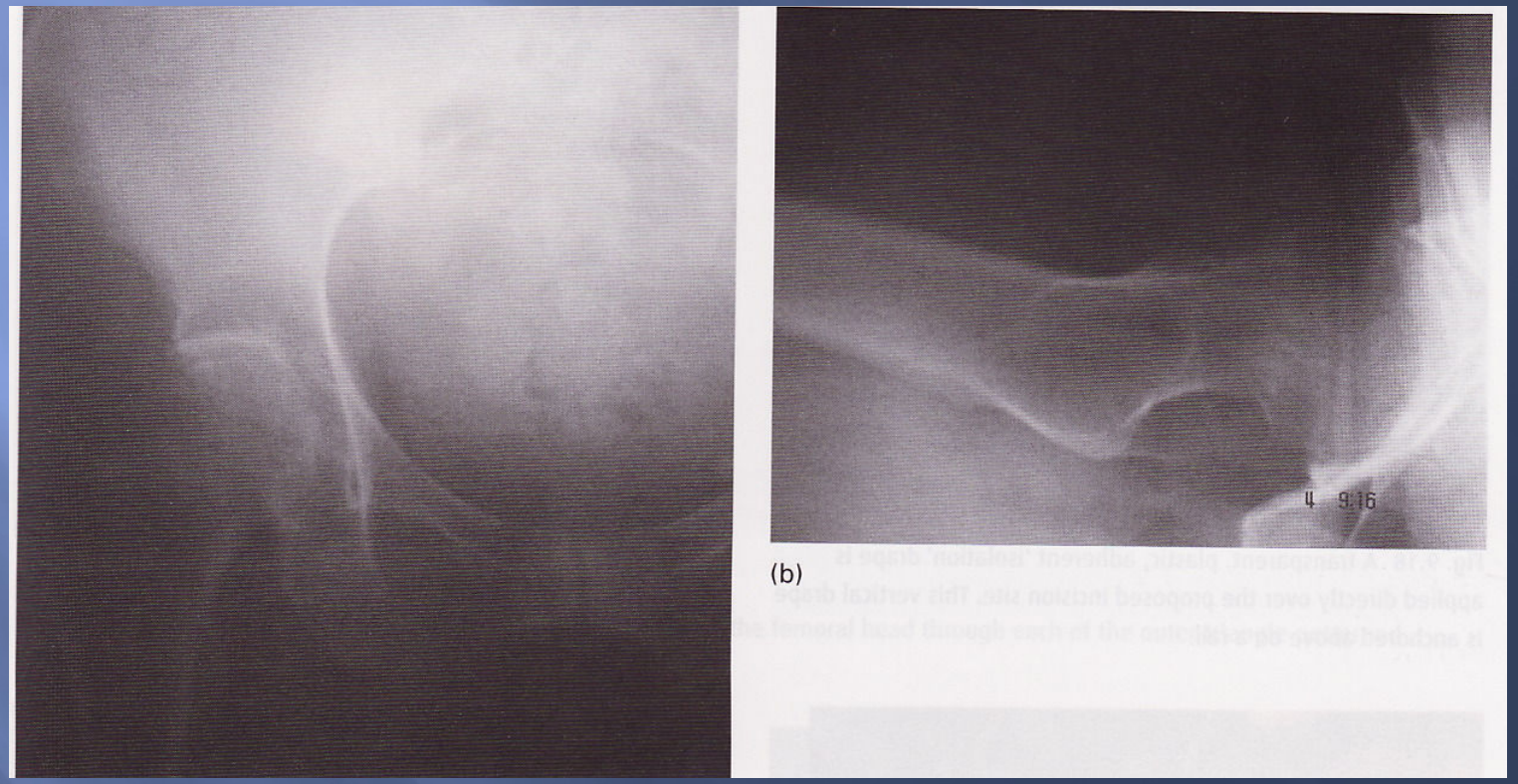
Alternatives

- Blade plate
- DCS
- Proximal femoral locking plate

Things to consider

- Implants
  - DHS
    - How many holes
  - Nails
    - Short/long
    - Large head screw / Recon nail
    - Entry point

Intracapsular Fractures



Intracapsular Fractures

- Leadbetter Manoevre
- Anatomical reduction
- DHS vs Cannulated screws
- Screw position

Intracapsular Fractures