

OSTEOPOROSIS AND OSTEOPOROTIC FRACTURES & COMPLICATIONS OF PROXIMAL HIP FRACTURES



DEFINITION

- Disorder of bone characterized by
 - Low bone mass
 - Deterioration of bone architecture
 - Fragility fractures
 - Spine
 - Hips
 - wrist



INCIDENCE

- Common disease
- Females > male
- Age – 3rd of females > 65
 - White females

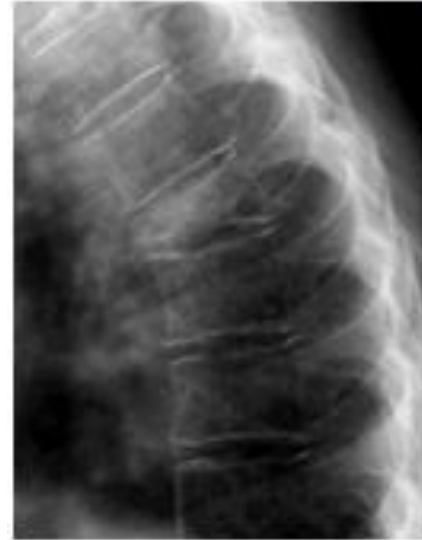


- Costly because of fracture related complications

CLASSIFICATION

- Primary (idiopathic)
 - Post menopausal
 - Age related

- Secondary
 - Identifiable disease – RA ,
HIV , Cancer , metabolic etc



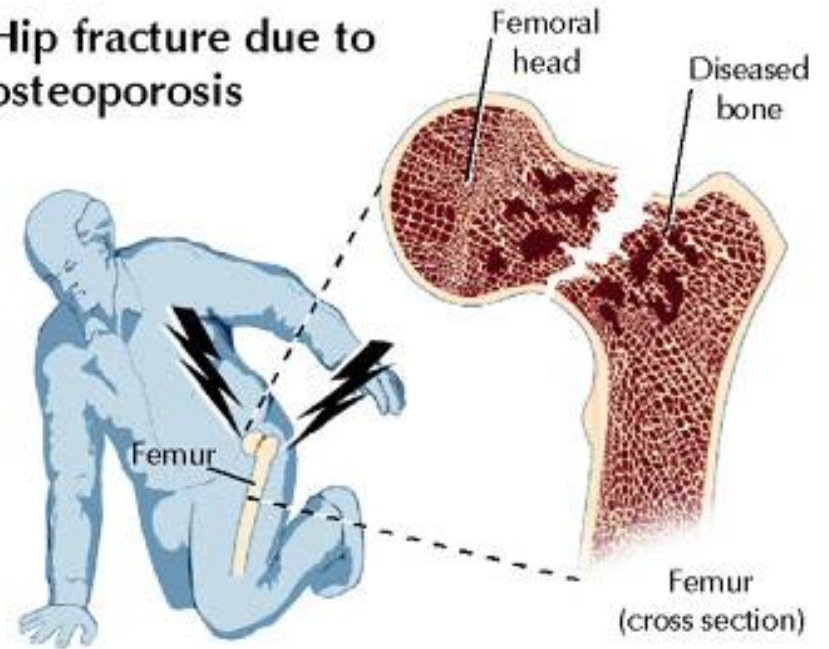
RISK FACTORS

- GENETIC
 - Family history
 - Caucasian
 - Early menopause
- Environmental & behavioural
 - Alcohol
 - Smoking
 - Malnutrition
 - Inactivity
- Metabolic
 - Hyperparathyroidism
 - Hyperthyroidism
 - Cushing's
- Drugs
 - Phenytoin , immunosuppressant's
- Malignancies
 - Multiple myeloma
 - cancer

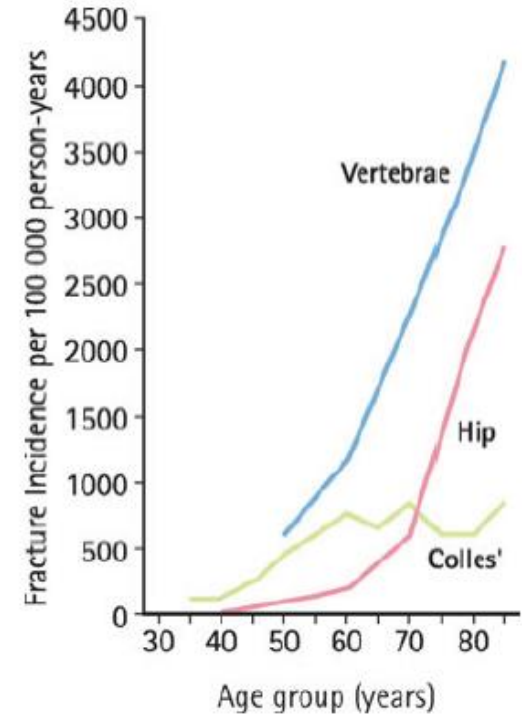
CLINICAL FEATURES



Hip fracture due to osteoporosis



CLINICAL FEATURES



DIAGNOSIS

- HX
 - >50 yrs – with hip/wrist/ spine fracture investigate
 - Look for secondary causes/ risk factors
 - Laboratory investigation
 - » FBC
 - » ESR
 - » CU&E
 - » Ca, LFT, VIT D , phosphate ,albumin

RADIOLOGY

- Not always diagnostic
 - Need to loose 30-50 bone mass
- Spine – lateral x ray
 - Decrease body height
 - Bi concave
 - egg shell vertebra
 - Schormls nodes (nucleous pulpsosus) extrudes into vertebra

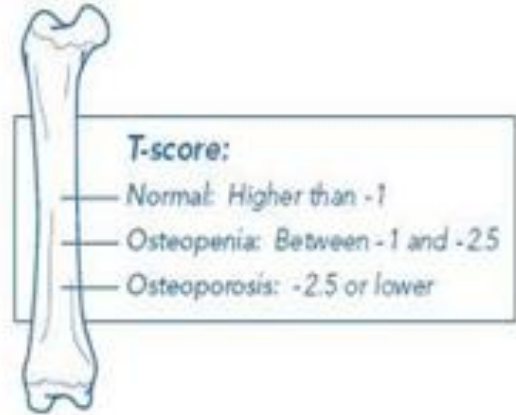


- BONE MINERAL DENSITOMETRY

- DEXA SCAN

- takes 3-7 min
 - Deliver radiation dose
 - Assess bone loss

Osteoporosis



- Diagnosis DEXA scan

- WHO:

- Lumbar (L2-L4) density level >2.5 SD below peak bone mass of a 25y (T-score)

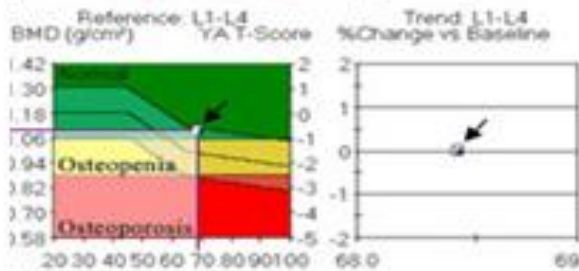
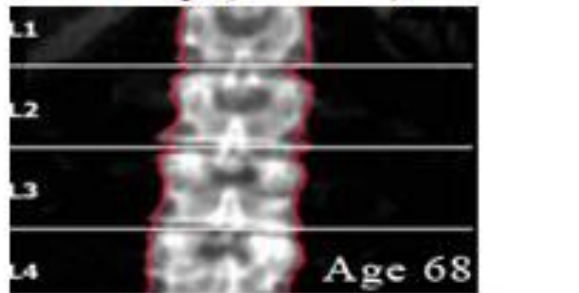


Figure 1

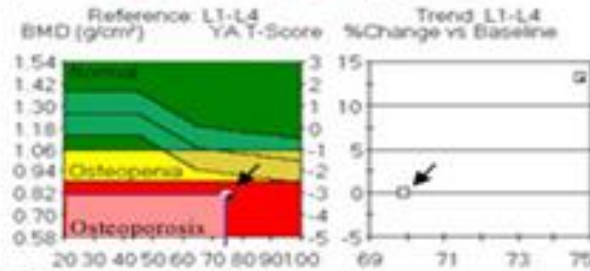
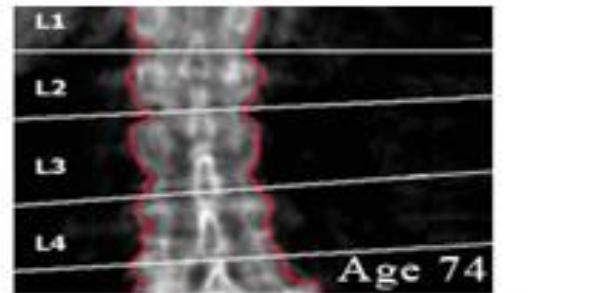


Figure 2

TREATMENT



- Prevention

- decrease behavioural risk factors

- Exercise



- Calcium



- Calcitonin

- Oestrogen replacement therapy



- biphosphonates

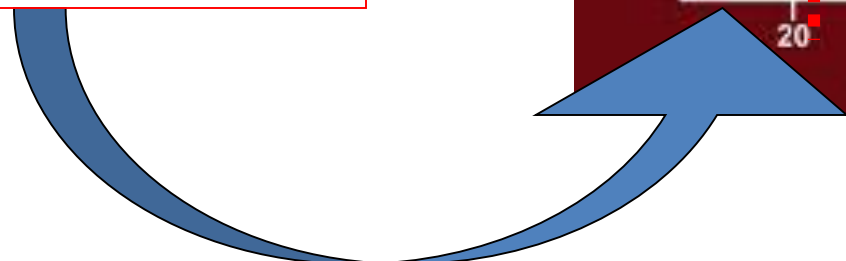
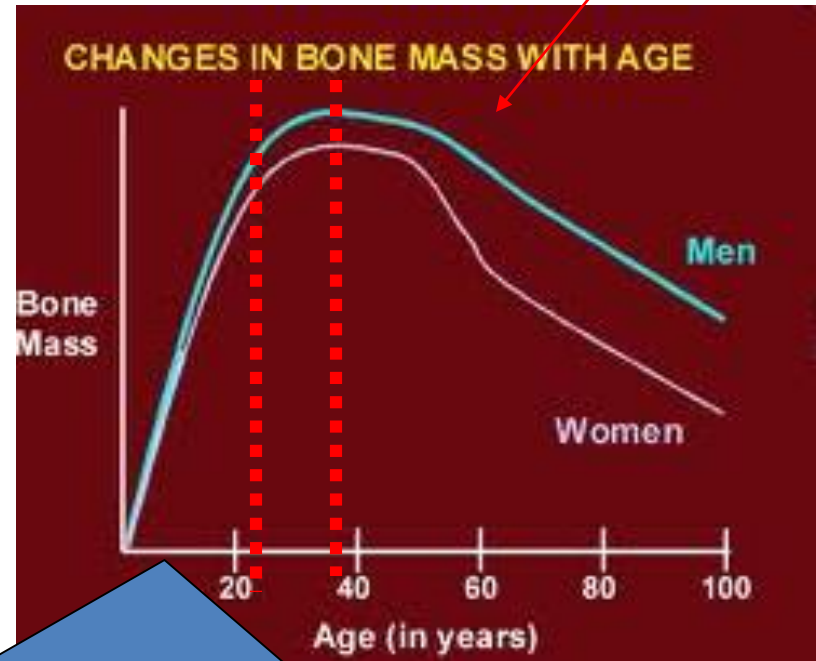


Osteoporosis

Can never turn curve around
Can only slow decrease

- Treatment
 - Prevention !!
 - Improve peak bone mass

Physical activity
Diet
Sunlight



OSTEOPOROTIC FRACTURES

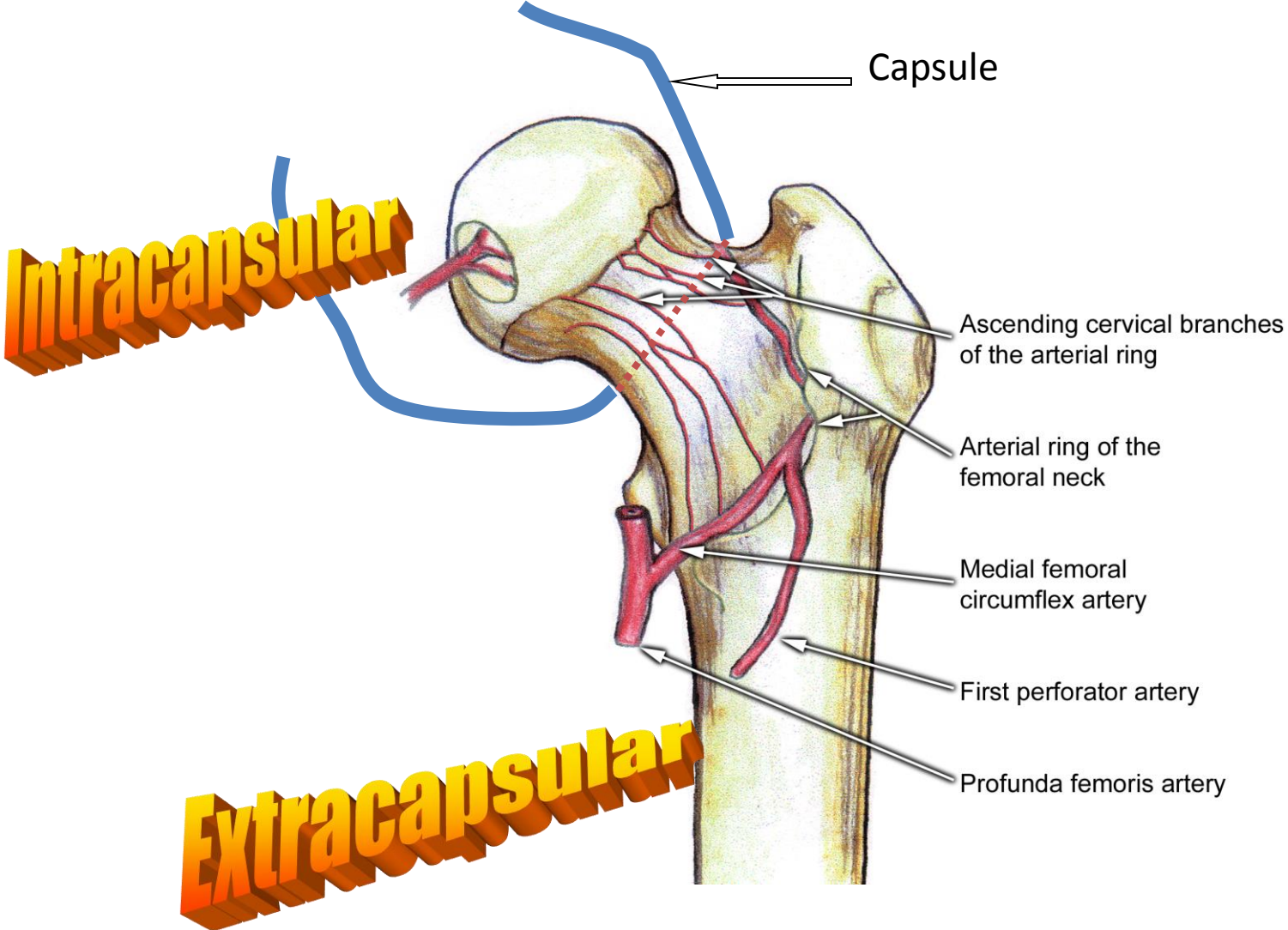
- Fractures
 - Comminuted
 - Soft bone
- Options
 - Plate fixation – wrist fractures
 - Hip fractures - athroplasty
 - Spine fracture
 - » Brace
 - » Cement augmentation

COMPLICATIONS OF PROXIMAL FEMORAL FRACTURES

INTRODUCTION

- Proximal femoral fractures include
 - Femoral neck
 - Intertrochanteric fractures
 - Subtrochanteric fractures

Hip Capsule



Femoral neck fractures

- Classification
 - Garden



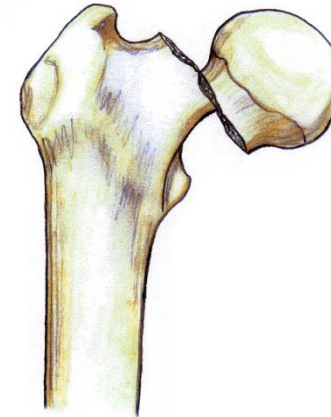
Type 1



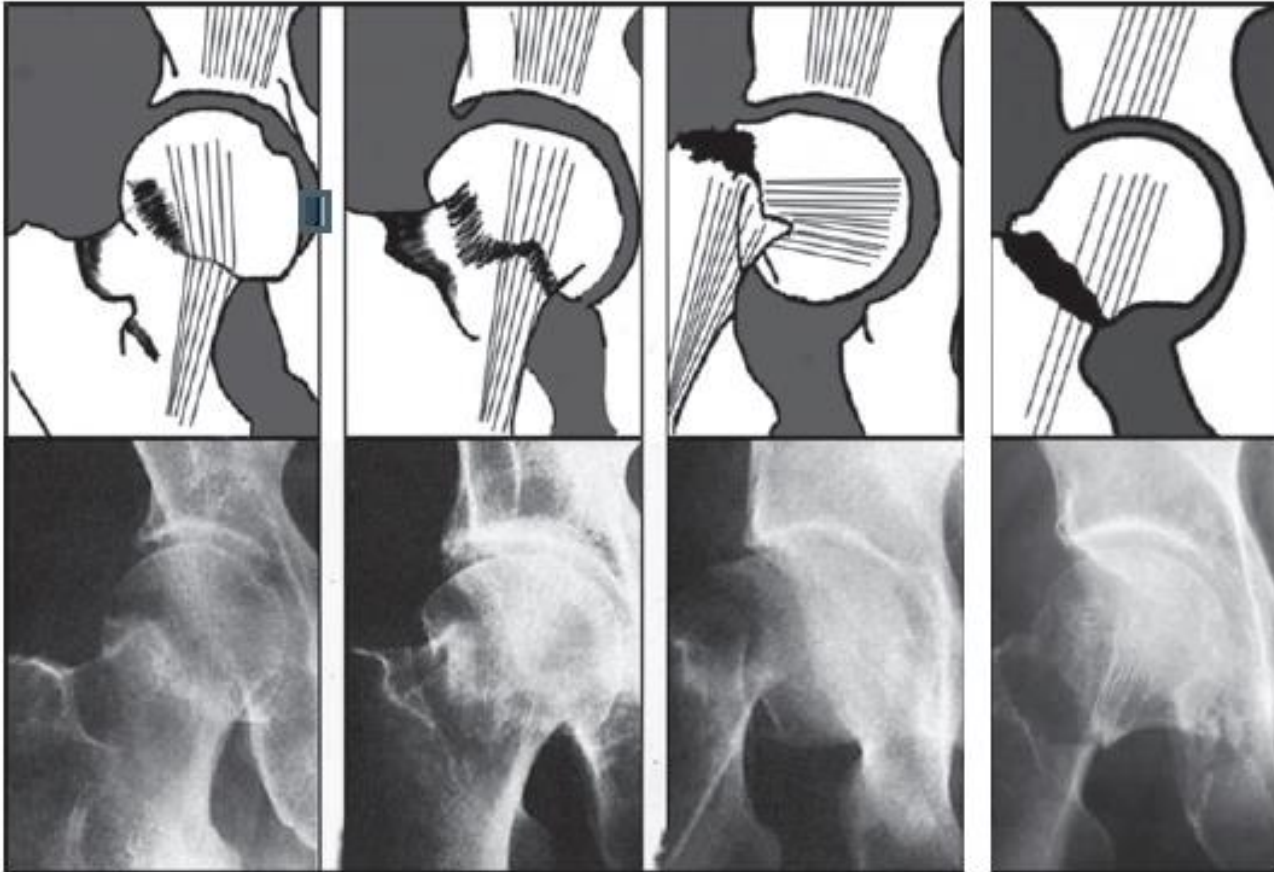
Type 2



Type 3



Type 4



Gardens classification

1 – incomplete undisplaced # , 2 complete undisplaced # , 3 complete partial displacement # , 4 complete and fully displaced #

Classic Presentation

- Elderly patient
- Low energy fall
- Clinically
 - Leg:
 - Shortened
 - Externally rotated



Complications

- General related to prolonged bed rest
 - Confused , dehydrated
 - Orthostatic pneumonia
 - Pressure sore
 - DVT
 - PE
 - Death – 35% in one year



NECK OF FEMUR FRACTURES



(a)



(b)

Fracture specific complications

Non union , Avascular necrosis of femoral head , osteoarthritis



Treatment

- Full resuscitation
 - ABC's
 - Oxygen NB!!!
 - Reduces mortality
 - Fluids NB!!!
 - Often dehydrated
 - Catheter to monitor resuscitation
 - Blood tests, ECG, CXR



TREATMENT



Treatment

- Intracapsular
 - **Older patient**
 - Bedridden
 - HemiProsthesis
 - Moore's
 - Thompsons



Treatment

- Intracapsular
 - **Older patient**
 - Domestic walker
 - Bipolar



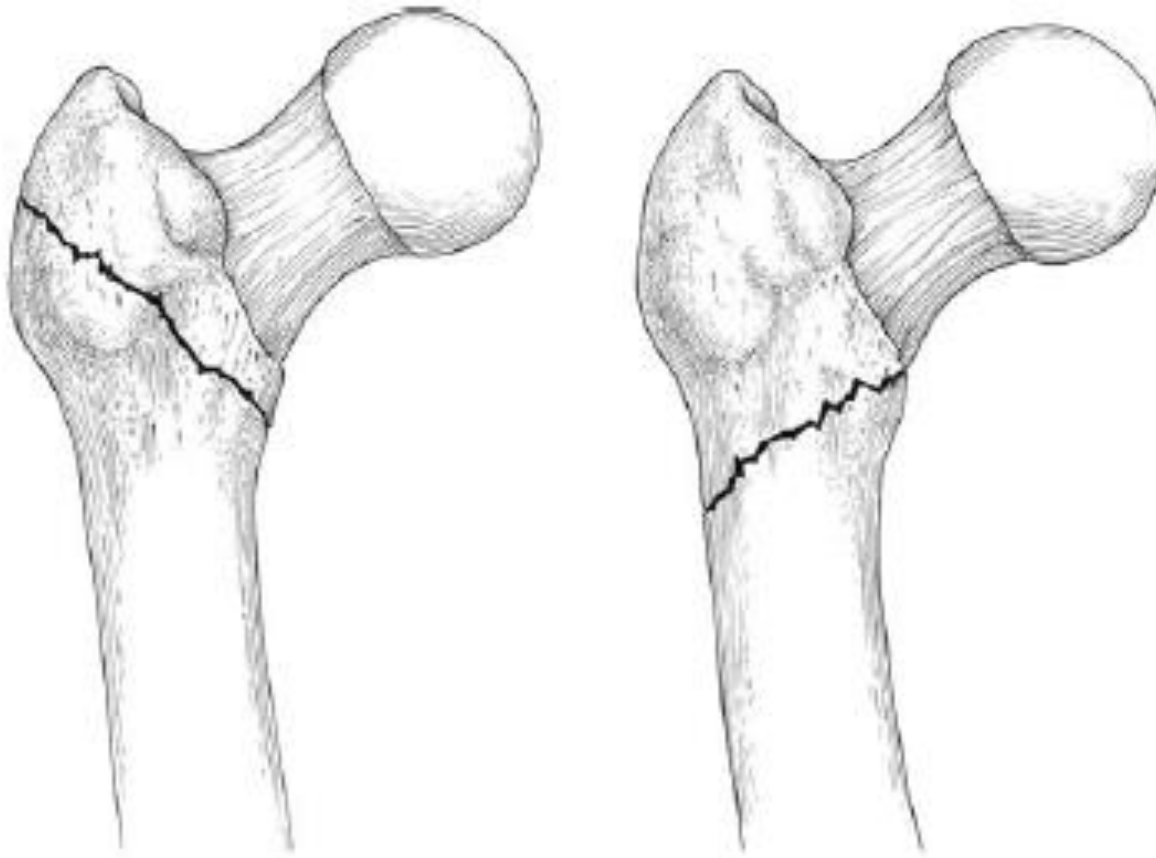
Treatment

- Mobilize the patient as soon as possible!!

- Surgery
 - Stabilize
 - Mobilize



INTERTROCHANTERIC FRACTURES



Fracture line passes between two trochanters



Complications : Malunion , implant failure , non union rare



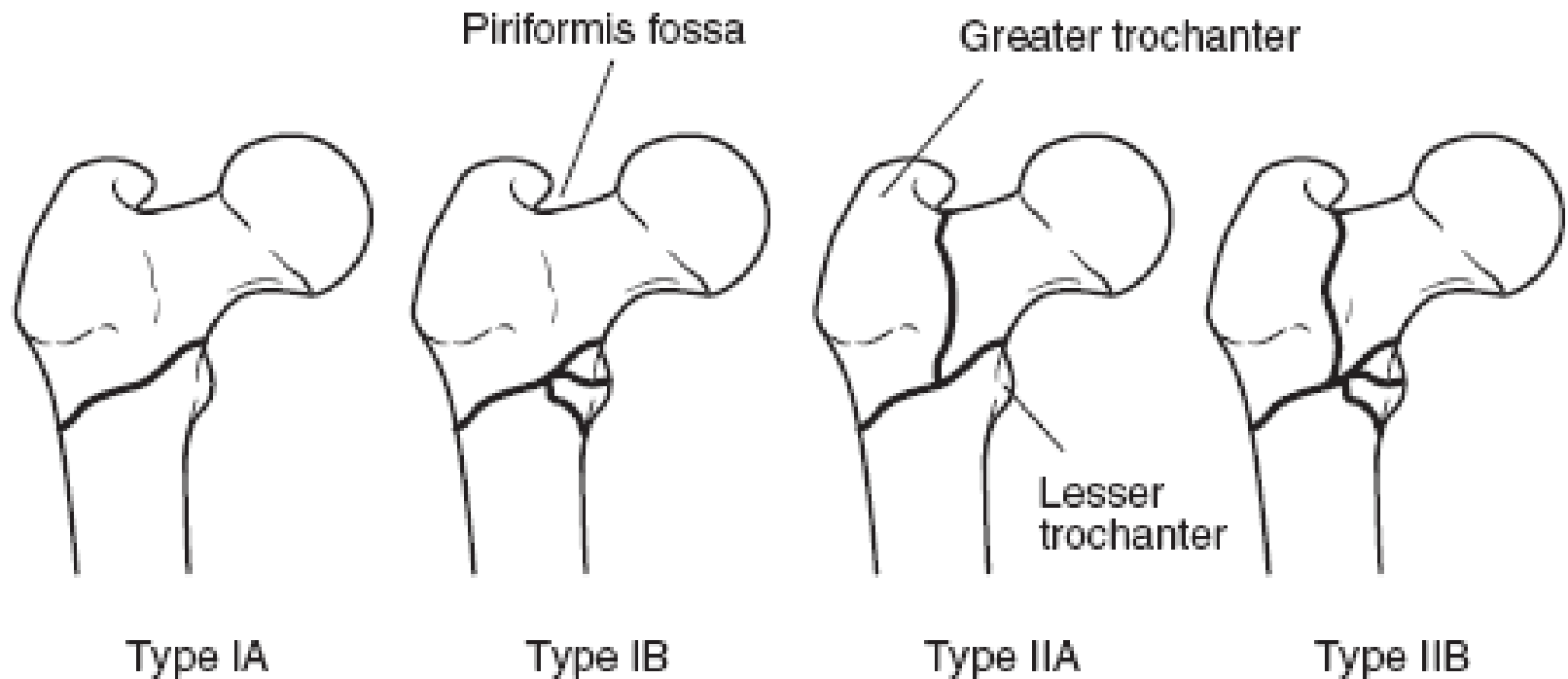
A



B

Failure of implant , coxa vara

Subtrochanteric fractures



Any fracture extending past lesser trochanter to 5 cm of proximal femur



Why are they special

- High rate of DVT
- Malunion
- Non union
- Implant failure



Non union , malunion , implant failure , high rate of DVT





A



B

THANK YOU