

HIP FRACTURES IN ADULTS

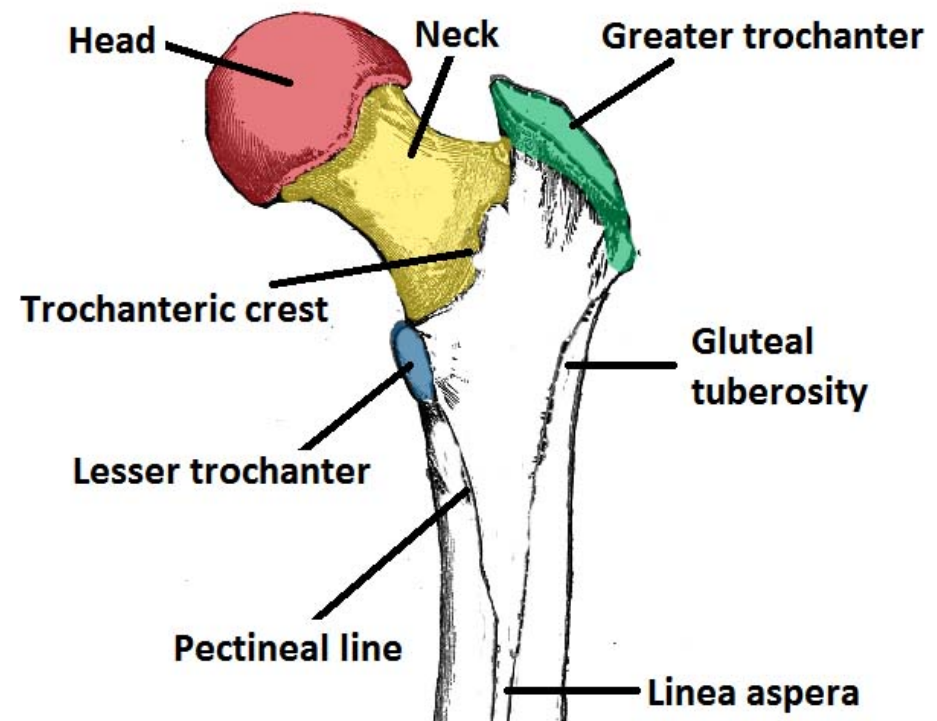
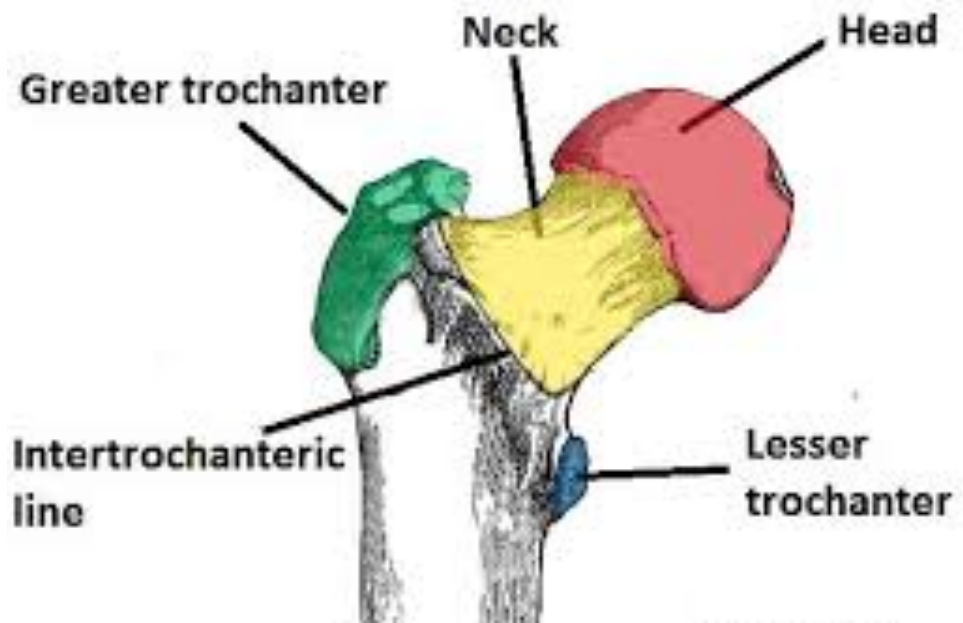
Omar Samarah

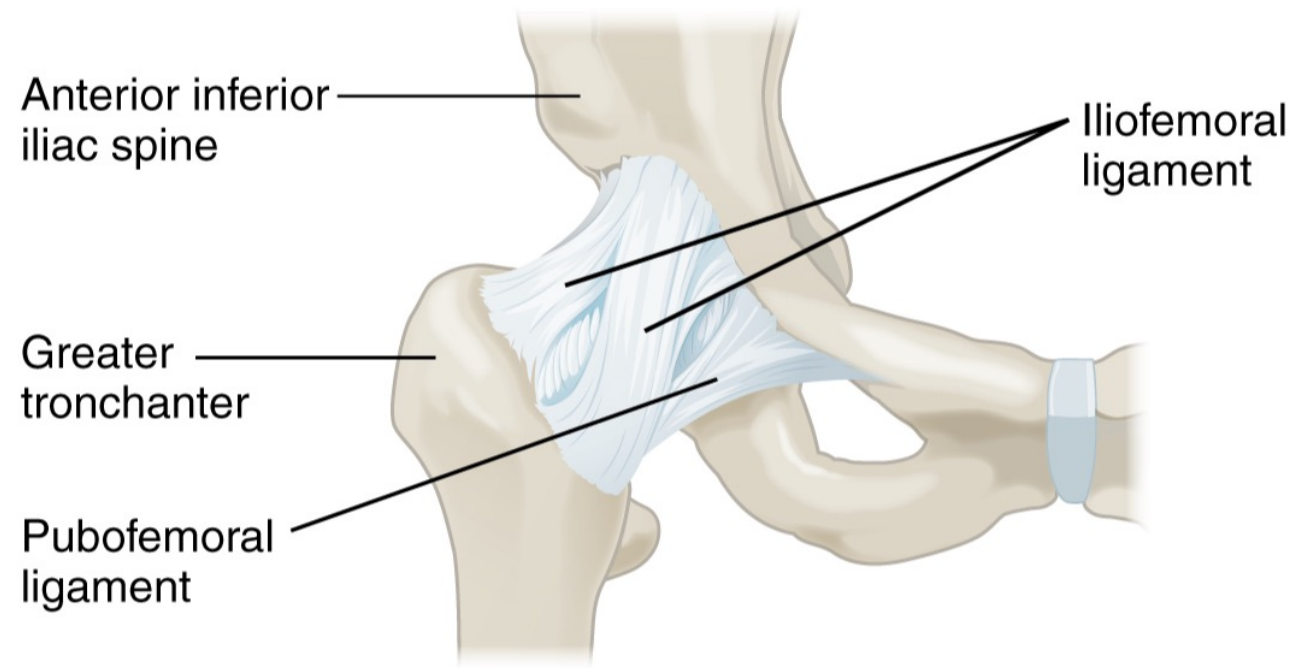
Prof. of Orthopedic &
Pediatric Orthopedic Surgery

LEARNING OBJECTIVES

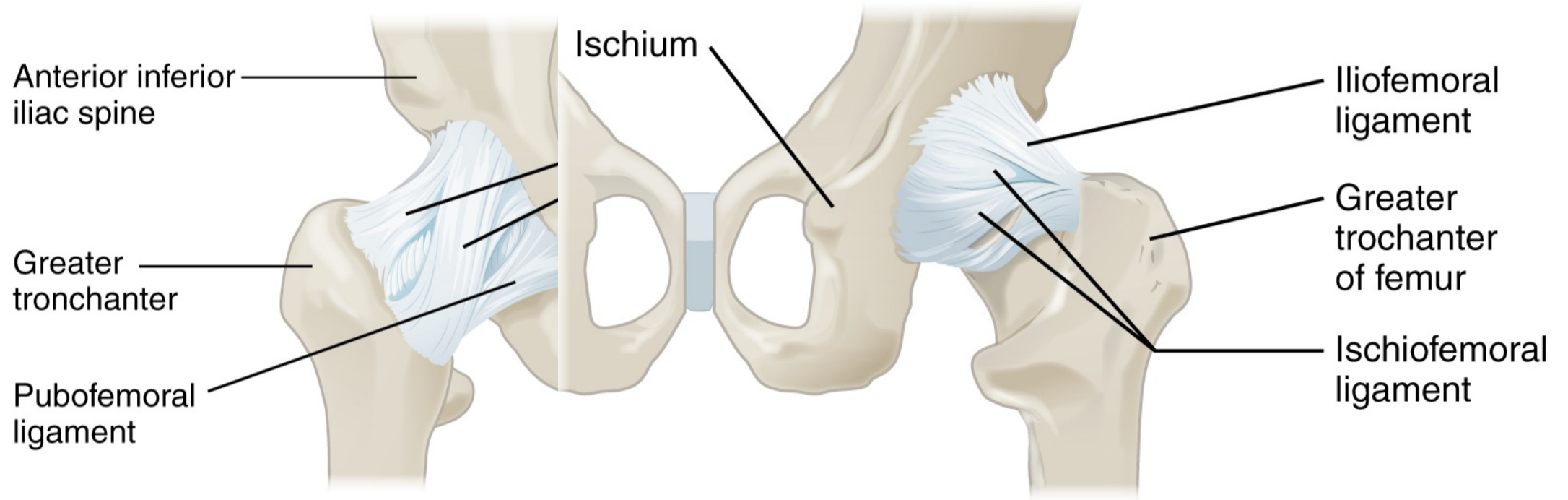
- Identify anatomy of the proximal femur
- Identify vascular supply of the proximal femur
- Clarify the mechanisms of injury
- Identify the signs & symptoms of PF fractures
- Classification of PF fractures
- Identify the principles of management







(b) Anterior view of right hip joint, capsule in place

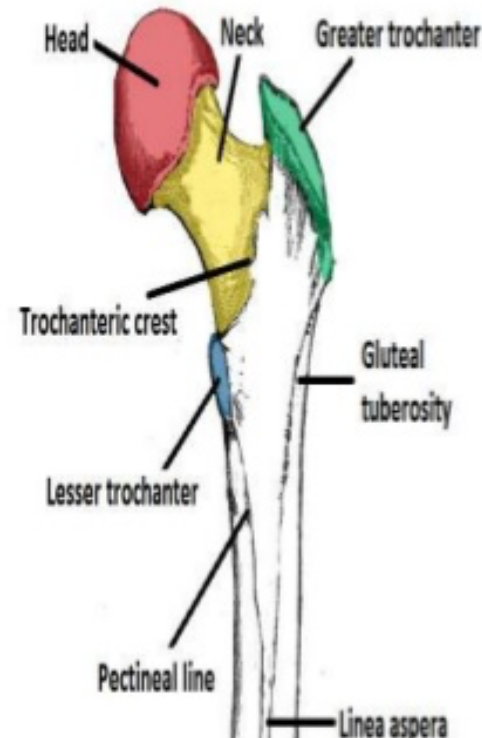


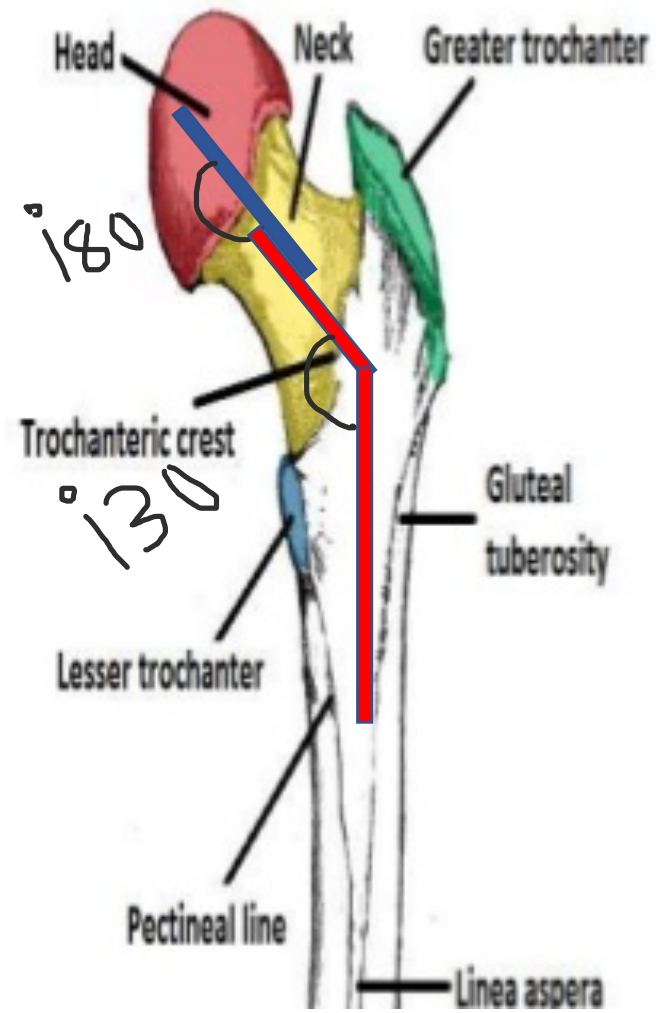
(b) Anterior view of right hip joint

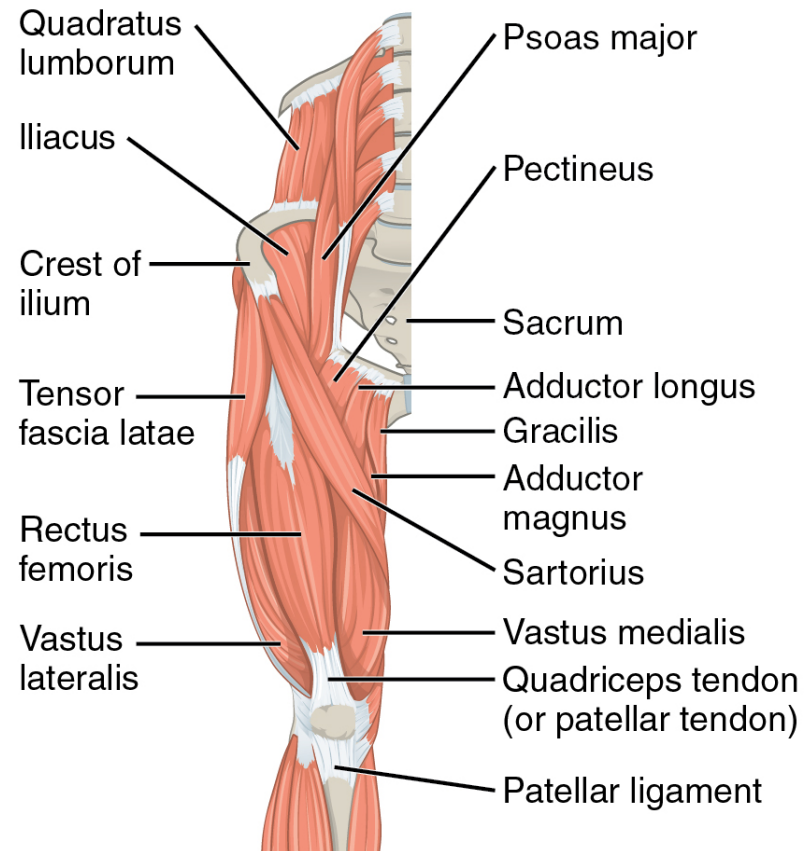
(c) Posterior view of right hip joint, capsule in place

ANATOMY OF NECK OF FEMUR

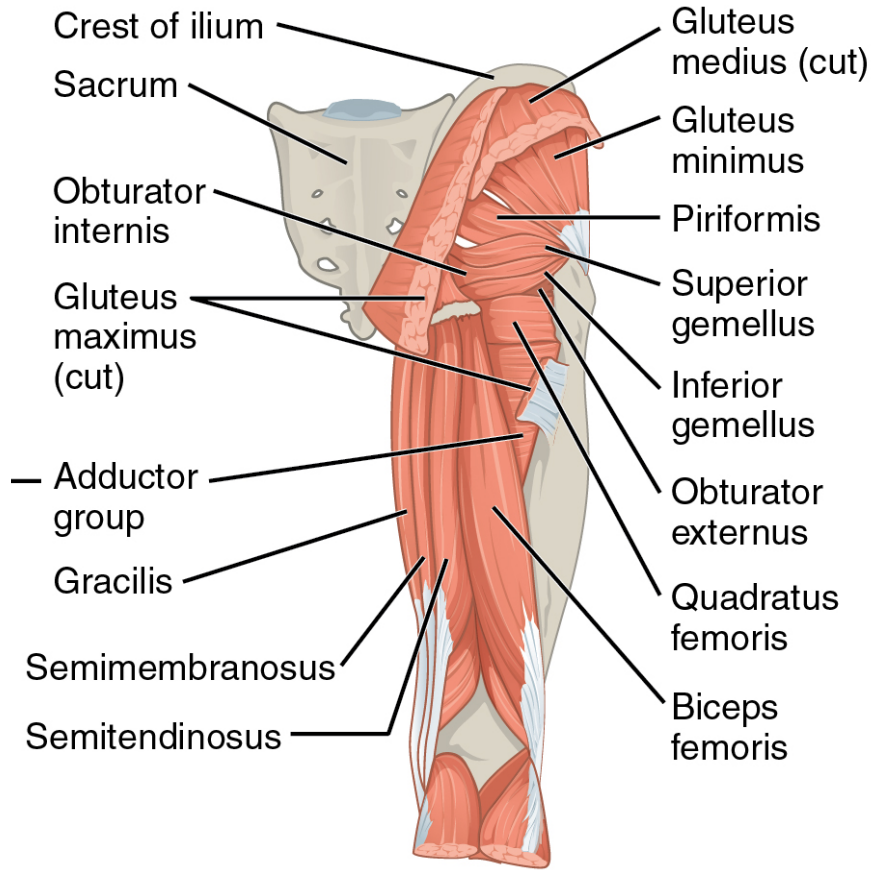
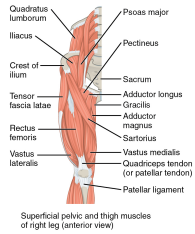
- Neck connects head with shaft and is about 3.7 cm long.
- It makes angle with the shaft 130 ± 7 degree (less in female due to their wider pelvis).
It facilitate movements of hip joint.
- It is strengthened by calcar femorale (bony thickening along its concavity).



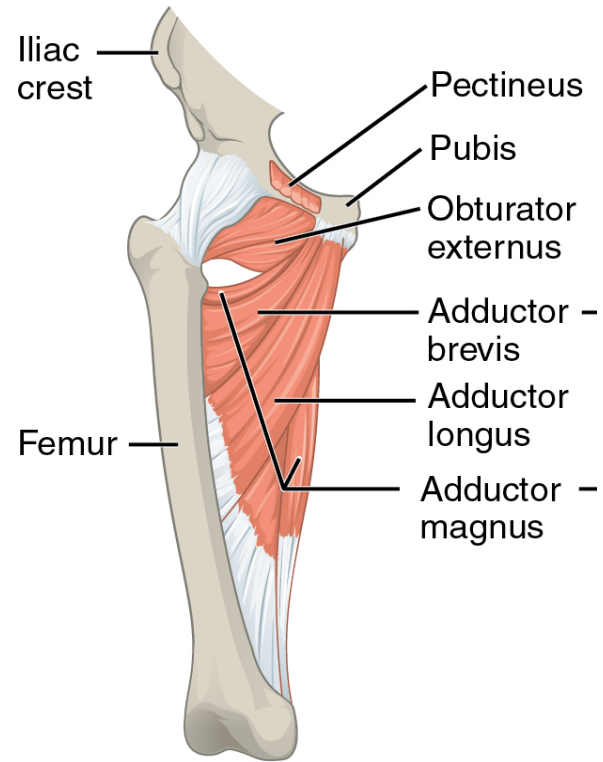
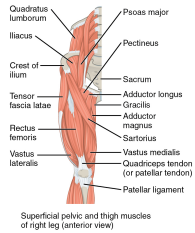




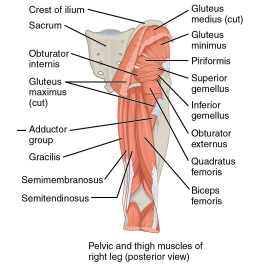
Superficial pelvic and thigh muscles of right leg (anterior view)

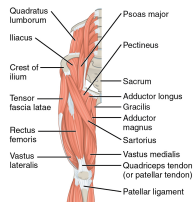


Pelvic and thigh muscles of right leg (posterior view)

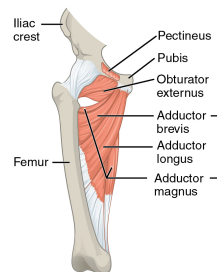


Deep pelvic and thigh muscles of right leg (anterior view)

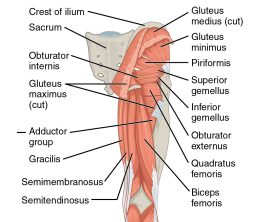




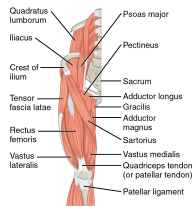
Superficial pelvic and thigh muscles of right leg (anterior view)



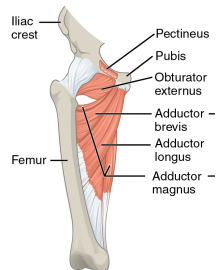
Deep pelvic and thigh muscles of right leg (anterior view)



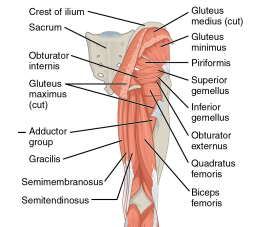
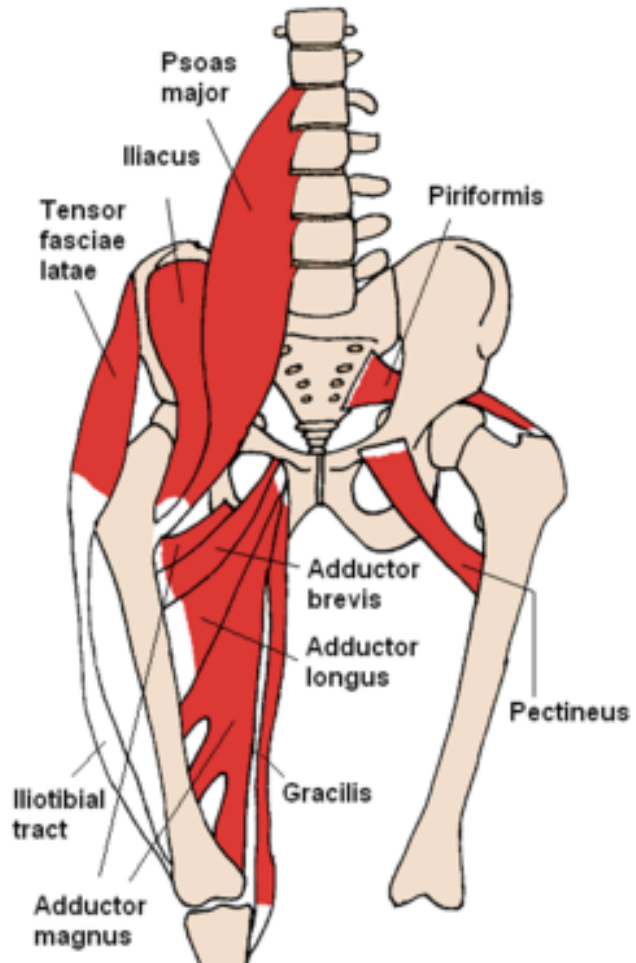
Pelvic and thigh muscles of right leg (posterior view)



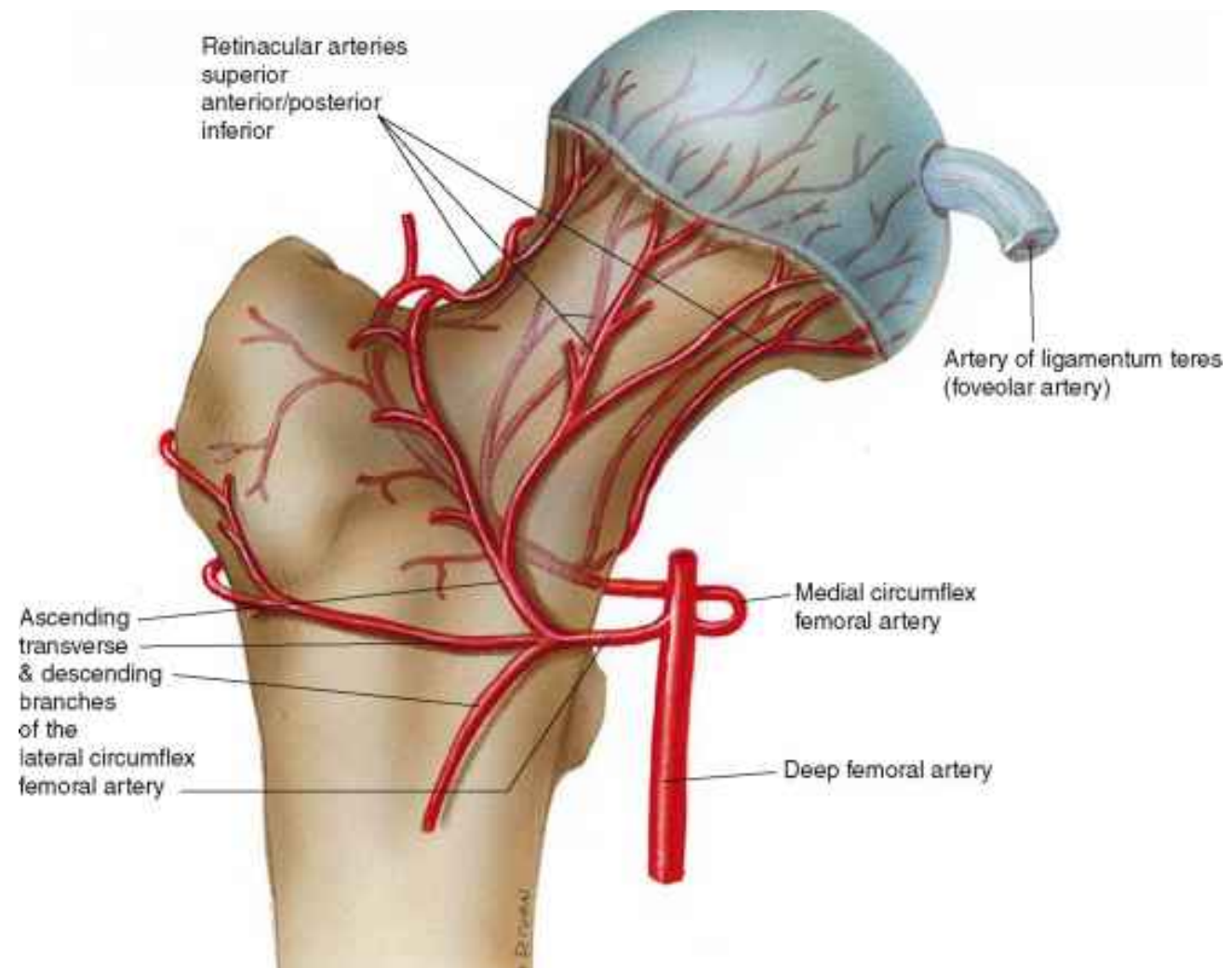
Superficial pelvic and thigh muscles of right leg (anterior view)



Deep pelvic and thigh muscles of right leg (anterior view)



Pelvic and thigh muscles of right leg (posterior view)



MECHANISM OF INJURY

- Old patients: result from low energy trauma in osteoporotic bones
- younger patients following high energy trauma like motor vehicle accidents.

PRESENTATION

Patients with a displaced proximal femur fractures exhibit the classic presentation of a shortened and externally rotated extremity. There may be tenderness to palpation in the area of the greater trochanter. Ecchymosis may be present.

- Range-of-motion testing of the hip will be painful and ***should be avoided.***
- Neurovascular injury is rare after hip fracture, careful evaluation is nevertheless mandatory.

SPECIAL ATTENTION

- Thigh or groin pain without any history of trauma. These patients should be suspected to have

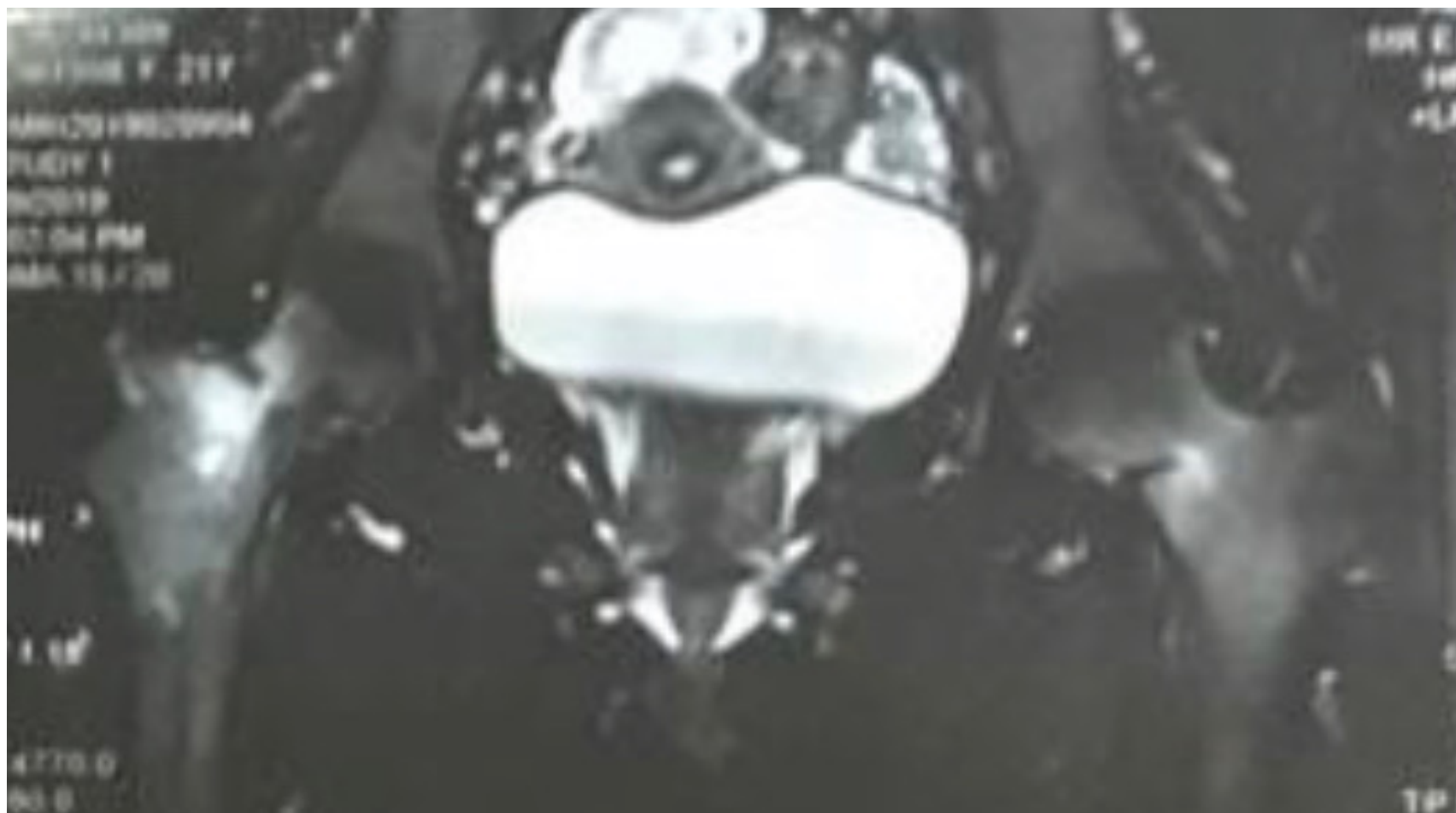
stress fracture of the proximal femur

They should be enquired about any recent changes in the type, duration, or frequency of physical activity.

- In patients in whom no significant history about activity or trauma is available, *pathological fracture* must be considered.

DIAGNOSIS ?

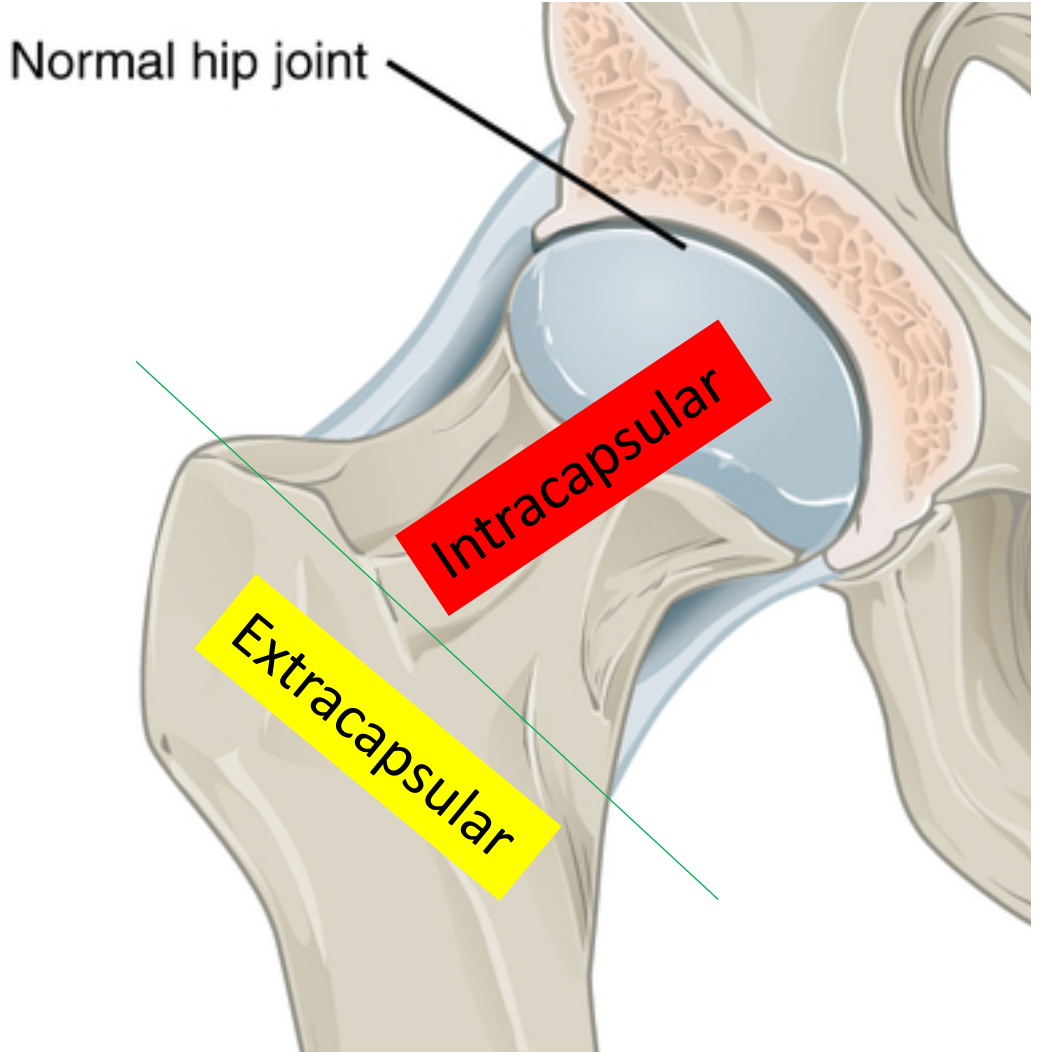




DIAGNOSIS ?



CLASSIFICATION OF PROXIMAL FEMUR FRACTURES

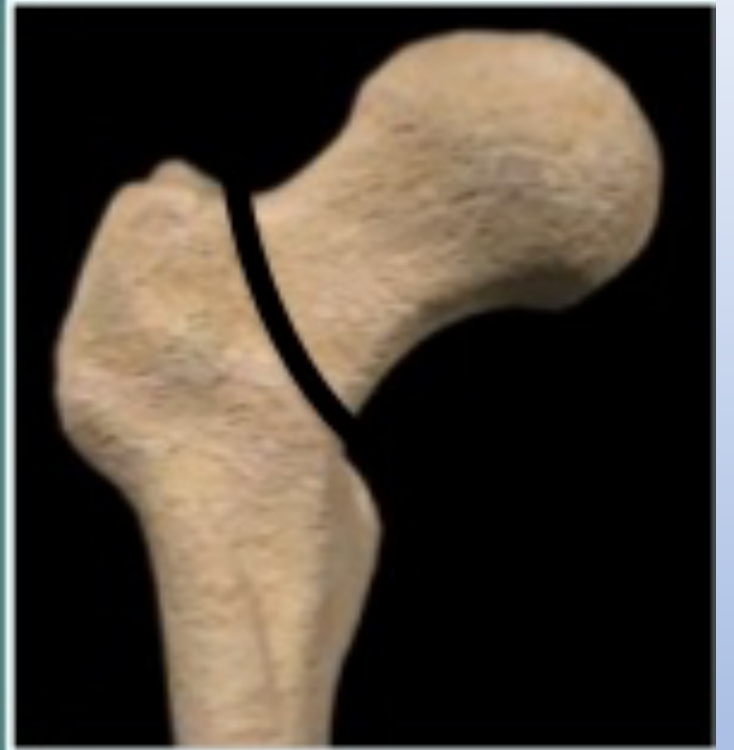


FEMORAL NECK FRACTURES

Subcapital fracture – just below the head of femur

Transcervical fracture – through mid neck

Basi-cervical fracture – through base of neck



DIAGNOSIS ?



DIAGNOSIS ?



DIAGNOSIS ?

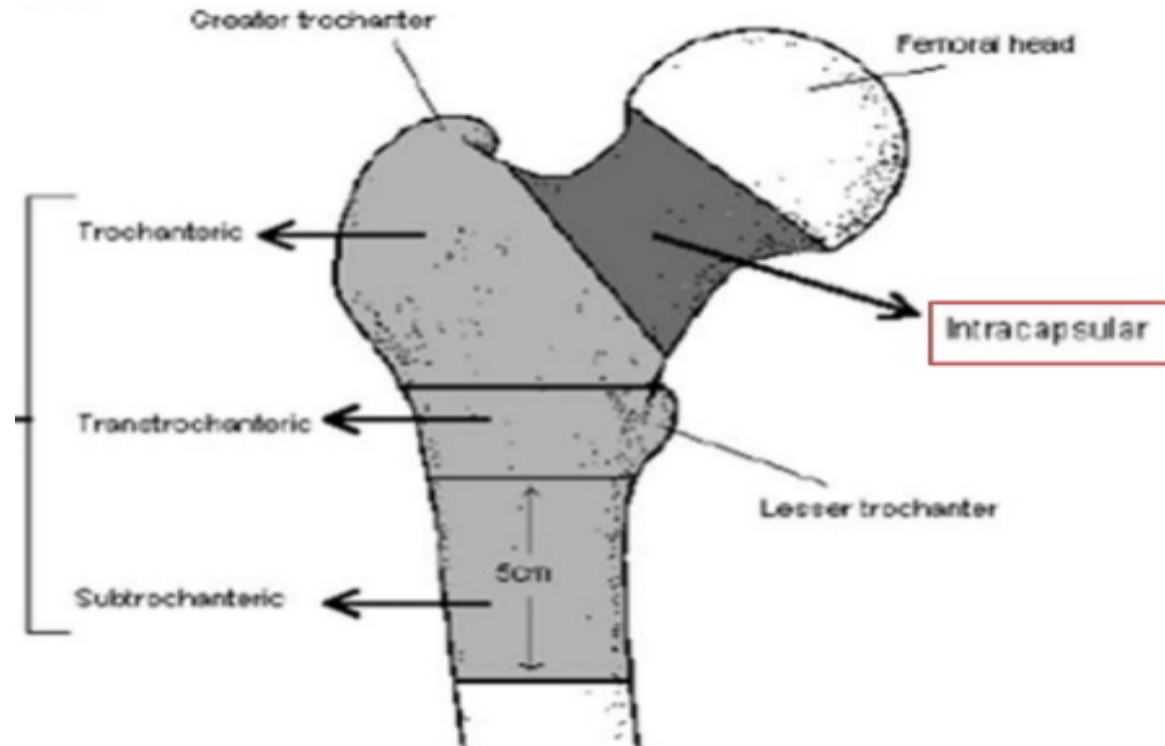


EXTRACAPSULAR FRACTURES

Outside the capsule , do not cause the same degree of vascular damage as intra-capsular fractures and therefore can be treated differently.

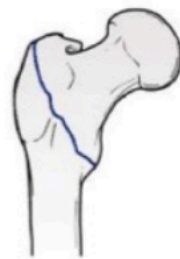
EXTRACAPSULAR FRACTURES

Outside the capsule , do not cause the same degree of vascular damage as intra-capsular fractures and therefore can be treated differently.



INTERTROCHANTERIC FRACTURE CLASSIFICATION

Evans Classification



Stable



Stable



Unstable

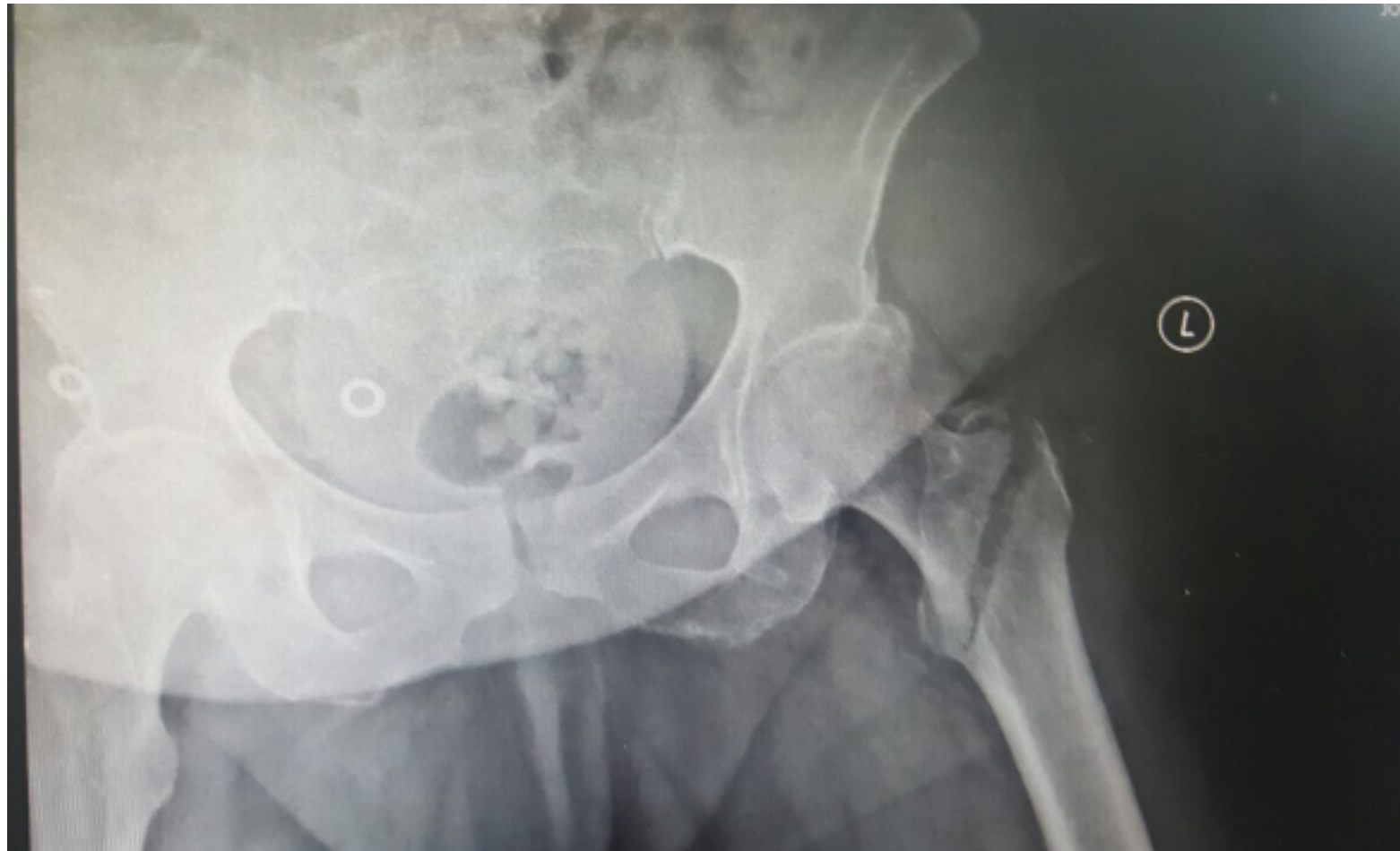


Unstable

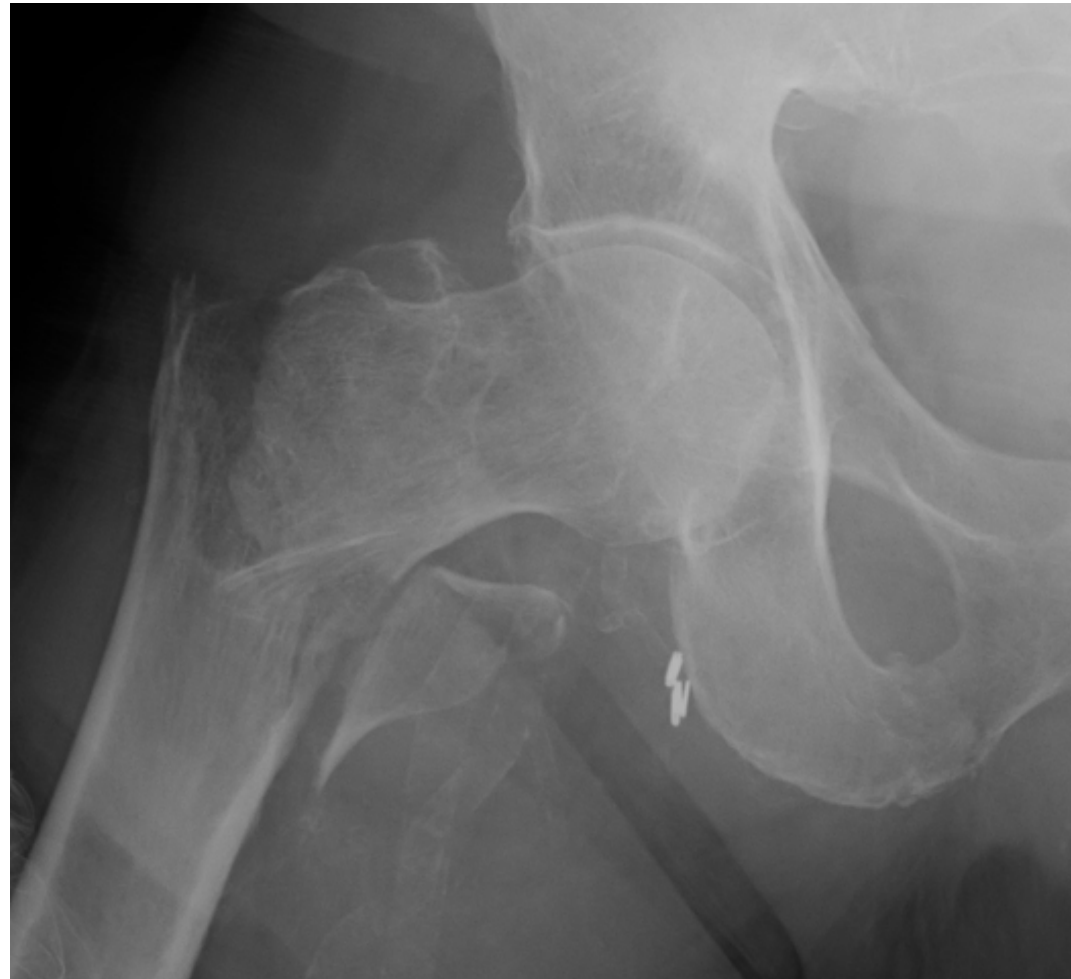


Unstable

DIAGNOSIS ?



DIAGNOSIS ?



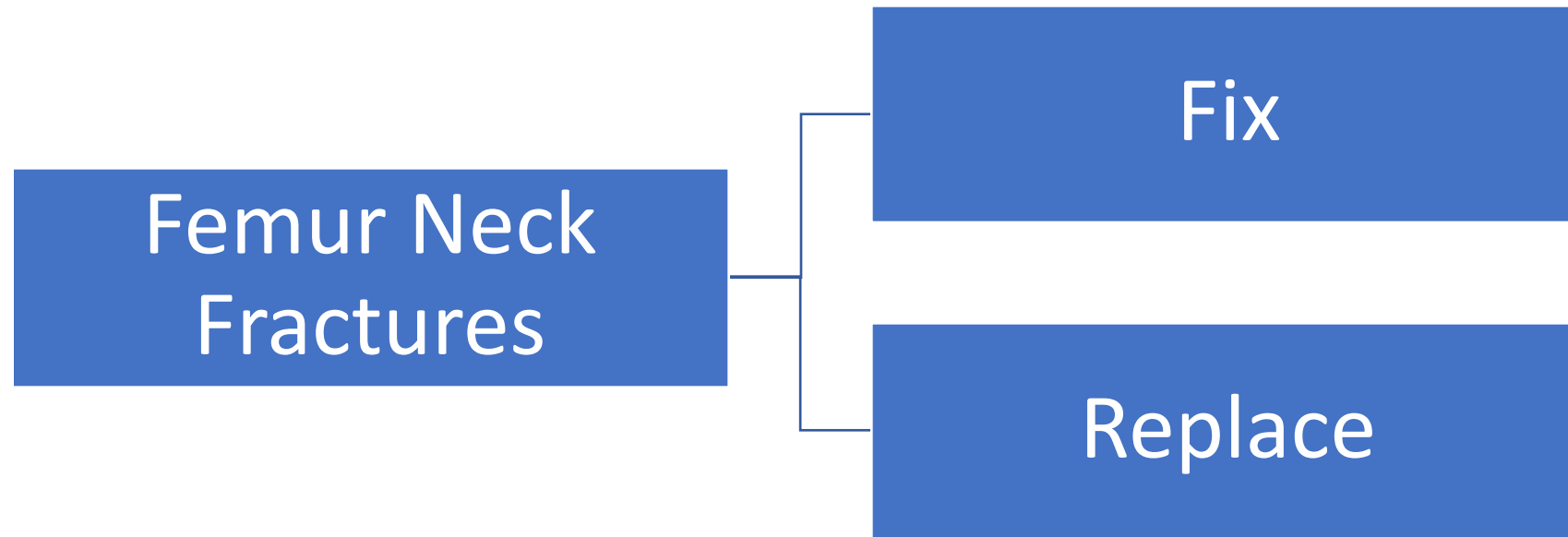
DIAGNOSIS ?



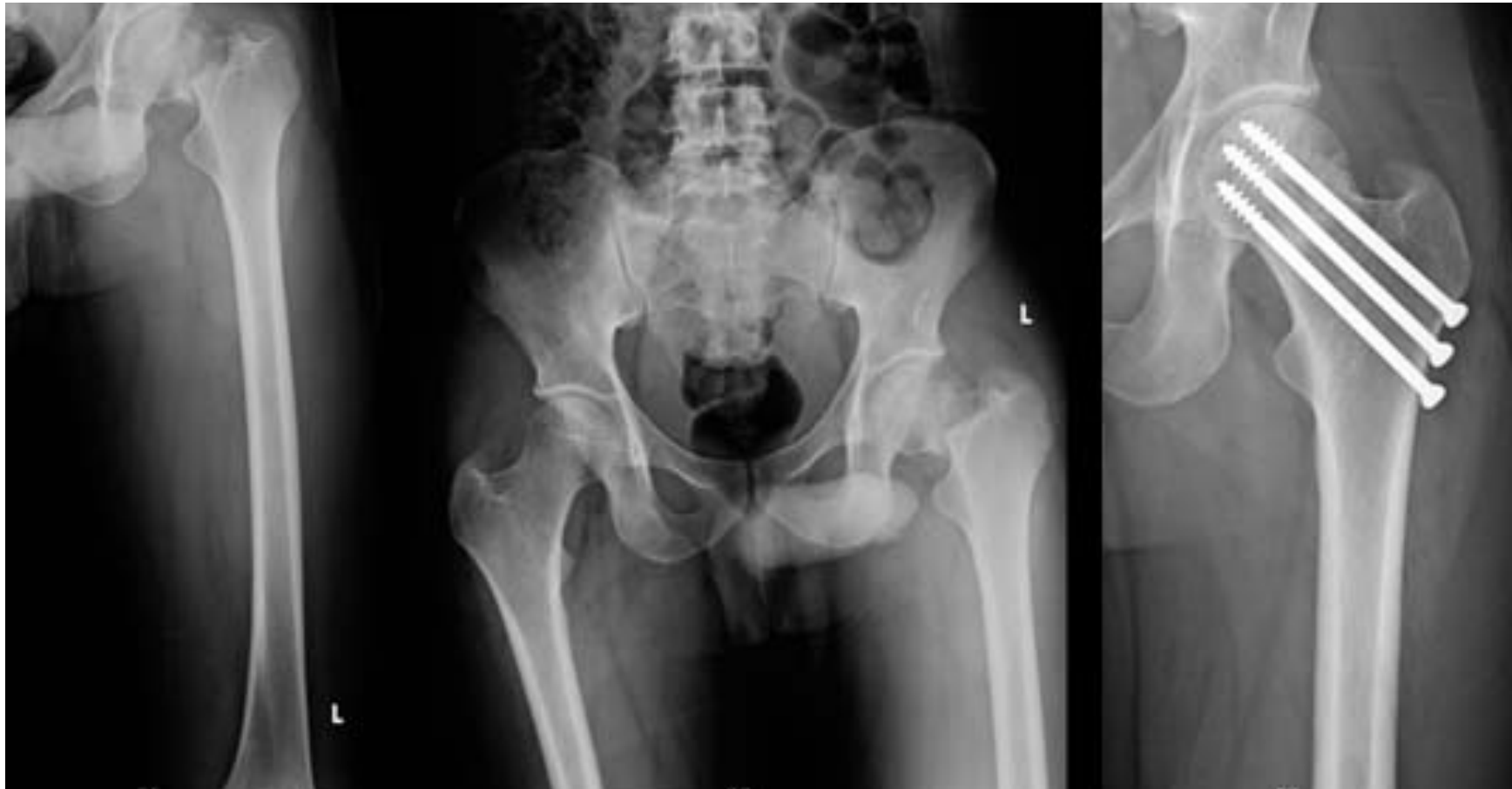
DIAGNOSIS ?



PRINCIPLES OF MANAGEMENT



FN # 25-YEAR-OLD



25-YEAR F LOW VIT D



25-YEAR F LOW VIT D



FN # 70-YEAR-OLD



INTER,/ SUBTROCANTERIC FRACTURES

Aim: Restore length, alignment & rotation

NO anatomical reduction

Without extensive soft tissue dissection, this fracture forms abundant callus in 6 weeks

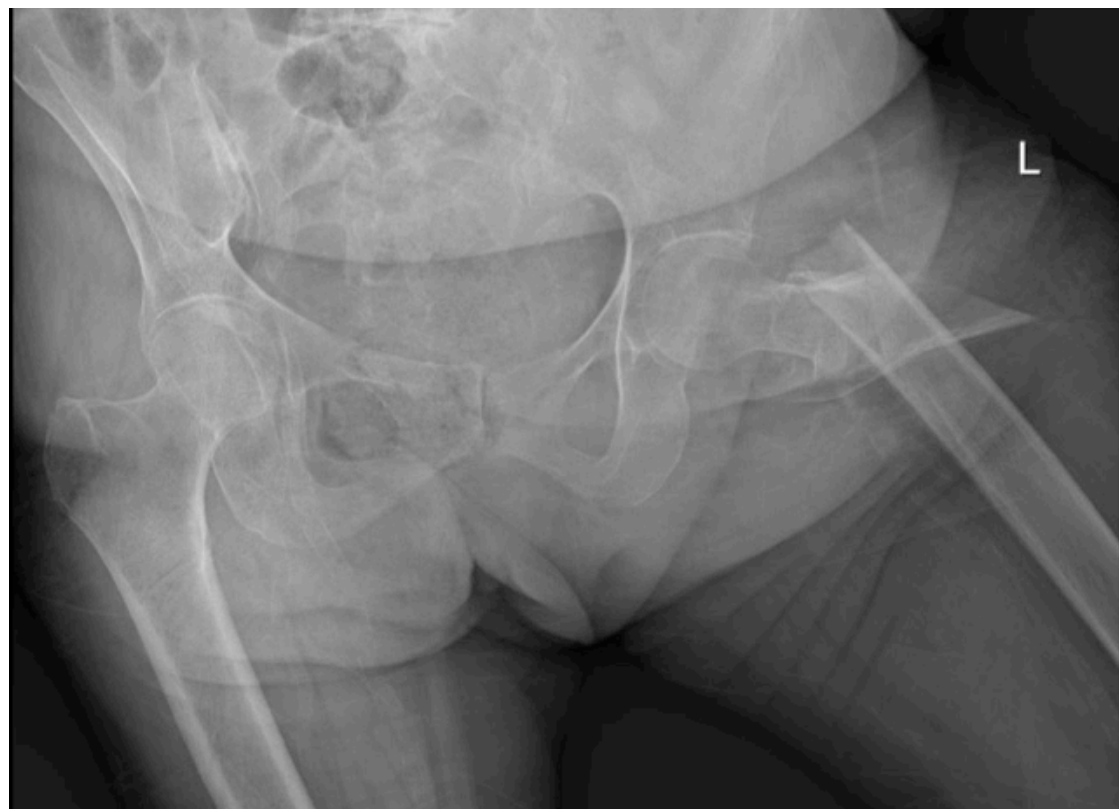
INTERTROCH. TREATMENT DHS



INTERTROCH. TREATMENT IMN



SUBTROCH. TREATMENT



COMPLICATIONS

General

- DVT
- PE
- Pneumonia
- Bed sores

Local

- AVN
- Non / Mal-union
- Failure of fixation
- Posttraumatic arthrosis

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