

Common Orthopedic problems–Dos and Don'ts

DR.T.K.JEEJESH KUMAR

MBBS,D.Ortho,DNB,MNAMS.

**Post Doctoral clinical fellowship in Ilizarov and limb reconstructive surgery,
Fellowship in Arthroplasty,**

Associate Professor,

Govt. Medical College, Kozhikode.



Introduction

- A 22 year old student came to OPD following fall from a bike on previous day night 8 pm
- He came to OPD on next day morning walking with complaint of knee pain
- History of sudden movement in the knee joint during the fall
- On Examination – contusion around the knee
- Could not assess the knee instability
- No fracture or dislocation in the x ray



-As a routine I Checked the pulse-I could not palpate the dorsalis pedis and posterior tibial pulse in the foot
-Arterial doppler done- Doctor suggested nothing to worry- mild decreased flow
I referred the patient to medical college as I could not get the pulse (*clinical finding*)
There they found the vessel injury
Finally amputated his leg (almost 24 hour over)



Common Orthopedic problems–Dos and Don'ts Approach

- 1. Emergency (casualty) conditions
 1. *Traumatic conditions*
 2. *Non traumatic conditions*
- 2. Common (OPD) conditions
 1. *Traumatic conditions*
 2. *Non traumatic conditions*



1. Emergency (casualty) conditions

What is your role as a RMO ?

Traumatic case – DO

Start with **B**asic **T**rauma **L**ife **S**upport

After stabilization starts the orthopaedic examination



Don't miss it

1. Mechanism of trauma

Velocity of trauma

- High velocity
- Low velocity

Mode of trauma

- Fall from height
- RTA
- Assault

Medico legal aspect

- Always record the MLC



Fracture

Simple fracture



Comminuted fracture



Fracture

Closed fracture VS open fracture



Type 4 closed fracture



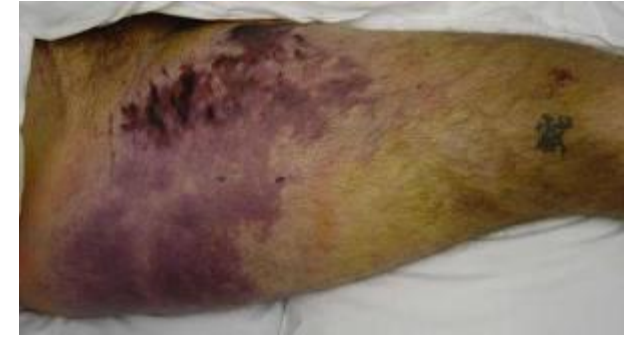
Type 2 open fracture



Don't miss it

2. Clinical examination

- Head to foot examination
- Look for distal neuro vascular deficit
- Visible external injury
 - Echymosis, Bruises, Haemarthrosis**
- Visible deformities
- Severe Oedema



Source: Stanek, Luciani, N. Kozicki, L. Shrivastava, M. K. 488 of
Plastic Emergency Medicine: www.accessmedicine.com
Copyright © The McGraw-Hill Companies, Inc. All rights reserved.



Don't miss it

3. Do relevant Investigation - X ray

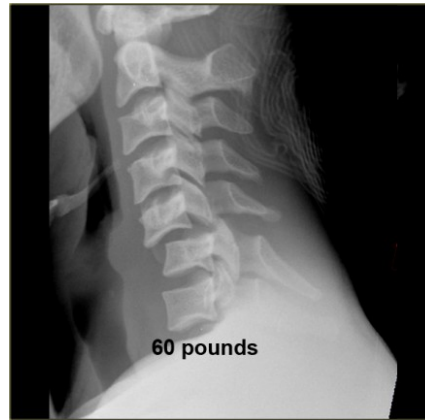
- Minimum two view (AP & LAT)
- One joint above & one joint below
- Extra view if needed
- Full length view to assess the deformity



Traumatic conditions

High velocity injury

1. Cervical spine – Quadriplegia/Quadriparesis




Open mouth view



Cervical spine – soft tissue shadow widening

Soft tissue



- Nasopharyngeal space (C1) - 10 mm (adult)
- Retropharyngeal space (C2-C4) - 5-7 mm
- Retrotracheal space (C5-C7) - 14 mm (children) - 22 mm (adults)
- Extremely variable and nonspecific

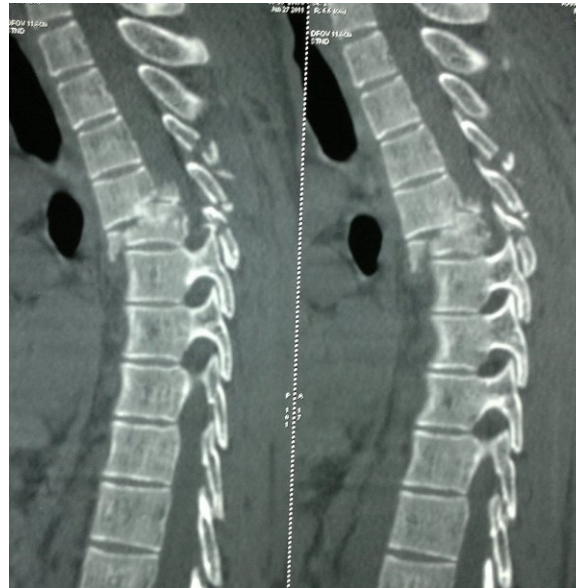


- 2. Lumbar spine



Don't miss it

- 3. Thoraco lumbar spine



- Spine Immobilization
 - Spine board



Don't miss it

4. Pelvis



- Pelvic fracture Immobilization



- Major orthopaedic cause of hypovolemic shock
 - Pelvis fracture (2-2.5 liter of blood loss)
 - _Femoral fracture (1-2 liter of blood loss)



Don't miss it

- 5.limbs–Ankle and foot



6. Dislocations

- *Shoulder Dislocation*



Anterior



Posterior



Scapular Y view

Anterior dislocation

Abducted and externally rotated

Limited internal rotation

Loss of rounded contour of shoulder



Posterior Dislocation

Sling position of Adduction & Internal Rotation

Limited External Rotation & Elevation of arm

Posterior prominence of shoulder



LIMB
RECONSTRUCTION



- *Elbow Dislocation*



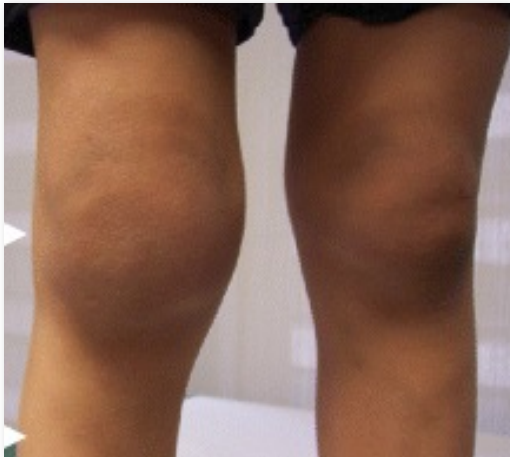
Don't miss it

Knee dislocation and popliteal artery injury



Don't miss it

- IDK (Internal derangement of knee–Ligament & meniscal injury)



Don't miss it

Compartment syndrome

–Always look for pain on passive stretching



- DVT (Deep vein thrombosis)



The **primary objectives** for the treatment of deep venous thrombosis (DVT)

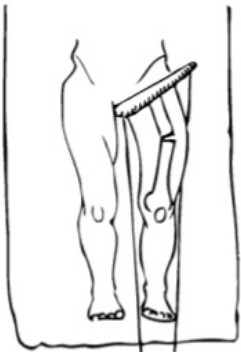
- To prevent pulmonary embolism (PE)
- To reduce morbidity
- To prevent or minimize the risk of developing the post thrombotic syndrome (PTS)
- The mainstay of medical treatment is anticoagulation**



Temporary immobilization

- Long bone fracture Immobilisation
 - All long bone fracture should be immobilized with splint before referral

THOMAS SPLINT WITH TRACTION



Temporary immobilization

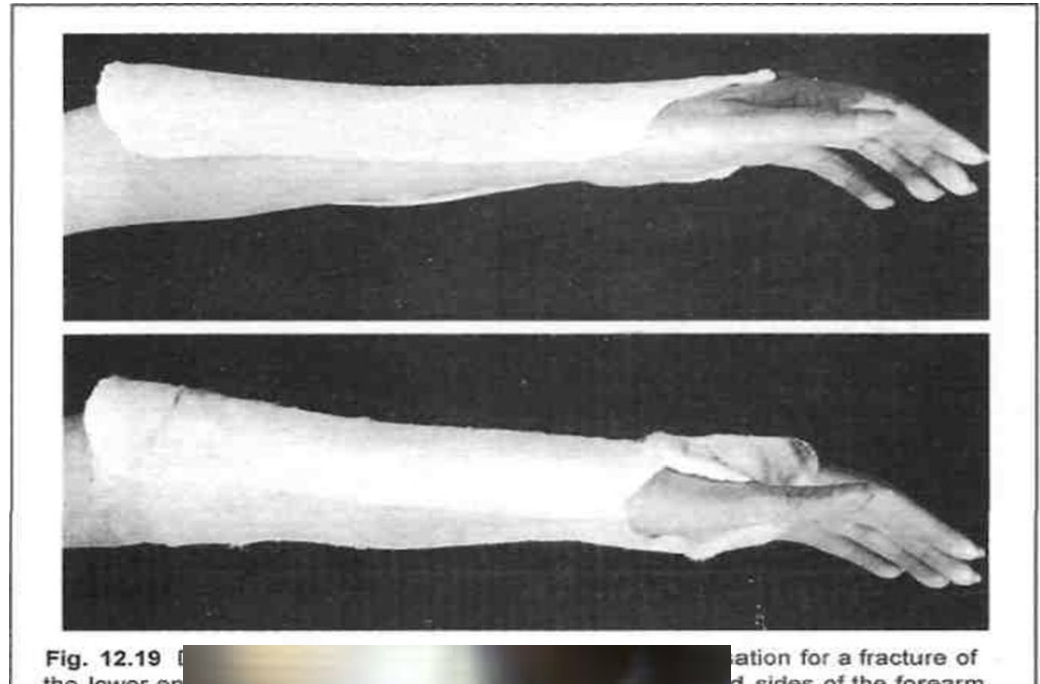


Fig. 12.19 Immobilization for a fracture of the lower end of the radius and sides of the forearm and wrist. It is important that the thumb must be immobilized. The fingers must be immobilized.



Low velocity -Trivial fall

Fracture in adults – old age

- 1.Fracture neck of femur
- 2.Inter trochanteric fracture
- 3.Anterior wedge compression fracture spine
- 4.Colle's fracture



Don't miss it

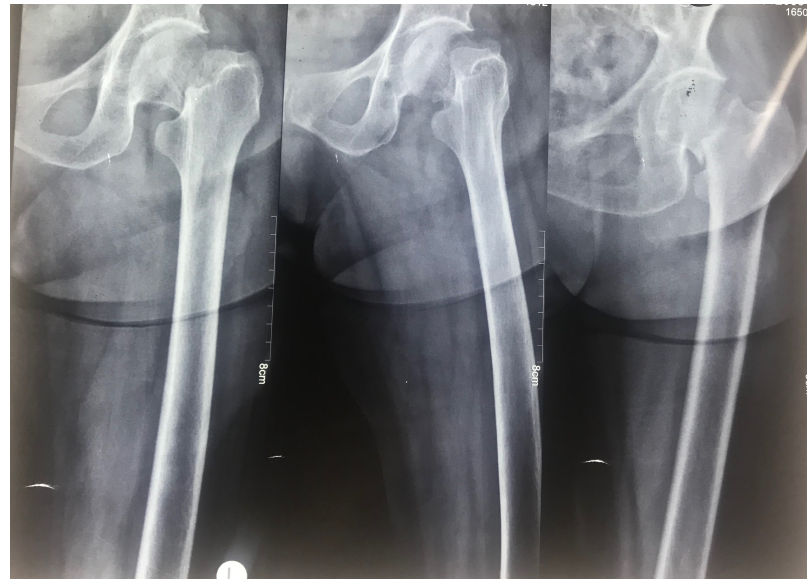
1. Fracture neck of femur



Impacted NOF fracture



After one week



Don't miss it

2. Colle's fracture



- 4. Osteoporotic Anterior wedge compression fracture spine



Fracture in children

- Buckling fracture at lower Radius, lower Tibia
- Physeal injury**
- Supra condylar fracture
- Pulled elbow

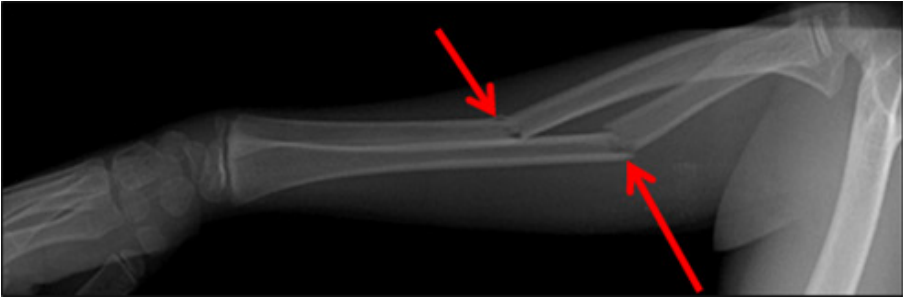
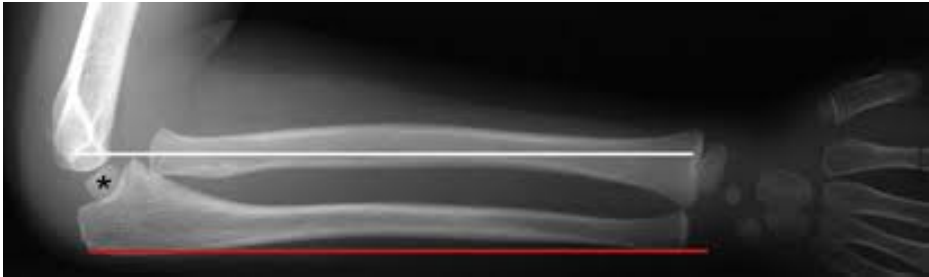


Don't miss it

Buckling fracture



Plastic deformity



Don't miss it

Physeal injury

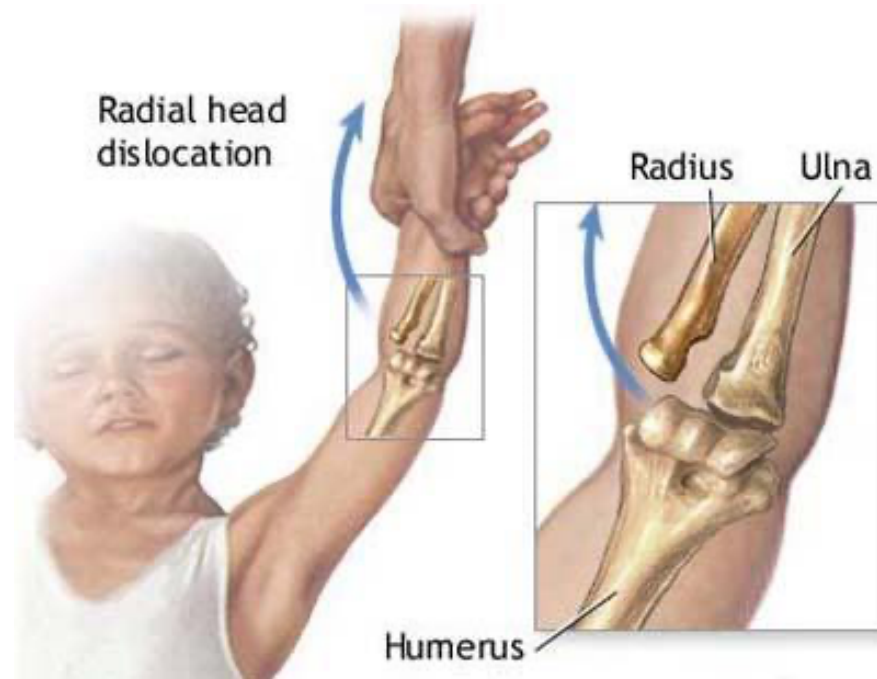
Salter- Harris - V

- Prognosis is poor, since premature stunting of growth is almost inevitable.



Don't miss it

Pulled elbow



Supra condylar fracture



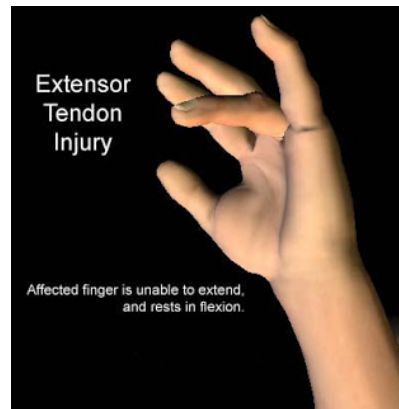
Brachialis Sign- Proximal Fragment Buttonholed through Brachialis



- *Crush and cut injury*
 - *Finger and toes cut injury*
 - *Vascular injury*
 - *Tendon injury*
 - *Nerve injury*
 - *Look for the joint movements active and passive*
 - *If pain - Give some local and look for the movement*
mine for the sensation



Don't miss it



- Tendo Achilles injury (Closet injury)



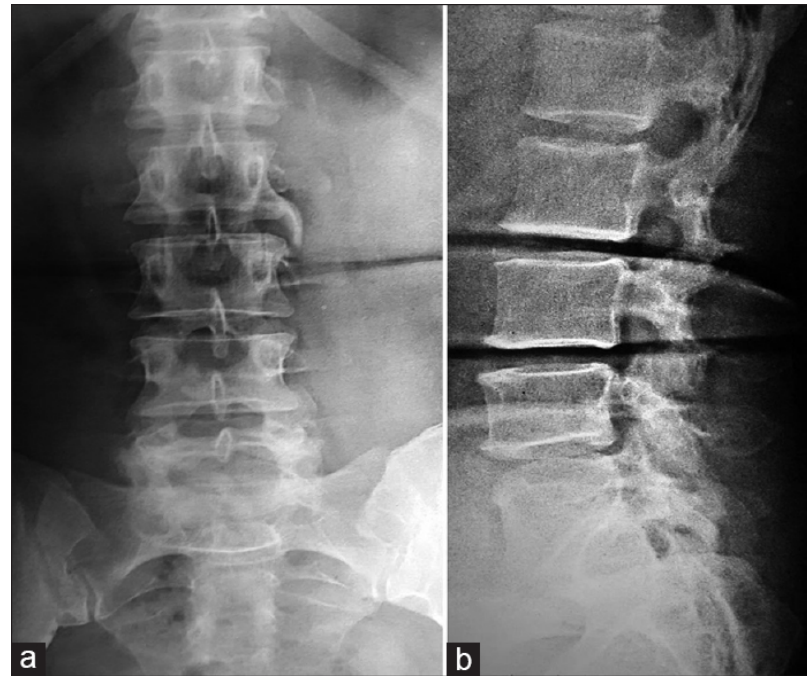
Non traumatic conditions

- LBA – Acute IVDP
- Septic arthritis (Knee ,Hip)
- Ostemyilitis



Don't miss it

IVDP



Don't miss it

Cauda Equina syndrome

- Acute LBA
- With neurological deficit
- Perianal anesthesia (saddle anesthesia)
- Bowel and bladder involvement
- Foot drop



Red flag sign in LBA

- Age of onset less than 20 yrs or more than 55yrs
- Recent history of violent trauma
- Constant progressive, non mechanical pain (no relief with bed rest)
- Thoracic pain
- Past medical history of malignant tumour
- Prolonged use of corticosteroids
- Drug abuse, immunosuppression, HIV
- Unexplained weight loss
- Widespread neurological symptoms (including cauda equina syndrome, scoliosis, spinal deformity)



Don't miss it

Septic arthritis and cellulitis



2. *Non emergency condition (OPD)*

- *Traumatic*
- *Non traumatic*



Wrist joint

Pain in wrist joint

With swelling

Without swelling

1. Ganglion
2. Tenosynovitis
3. CRPS (RSD)
4. Tumor (GCT)

1. CTS
2. Kienbocks disease
3. DQTS
4. Scaphoid non union



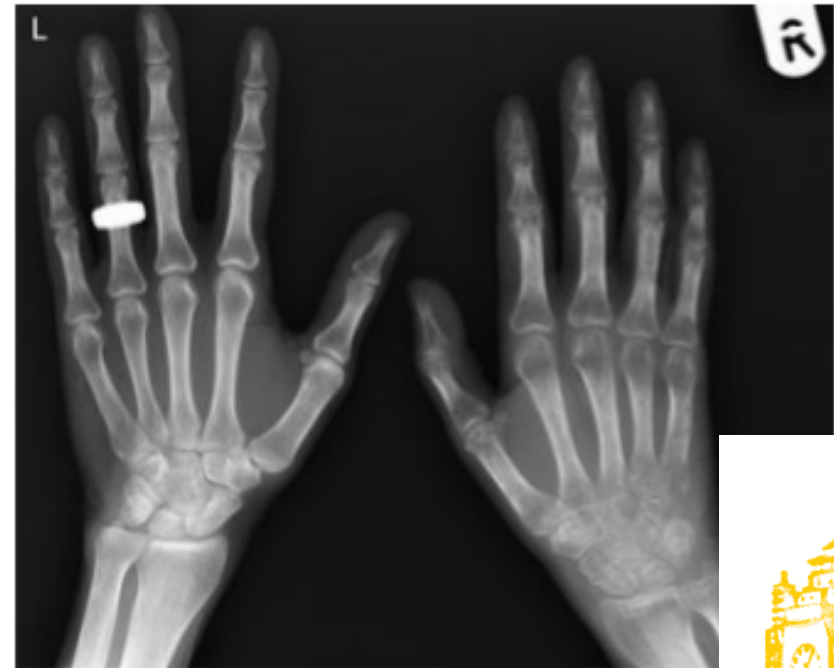
Don't miss it

- Ganglion



Don't miss it

- 2.RSD/CRPS (Reflex sympathetic Dystrophy)



Don't miss it

- CTS(Carpel Tunnel syndrome)

Rule out cervical causes



Don't miss it

KBD (Keinbock's disease) (AVN of Lunate)

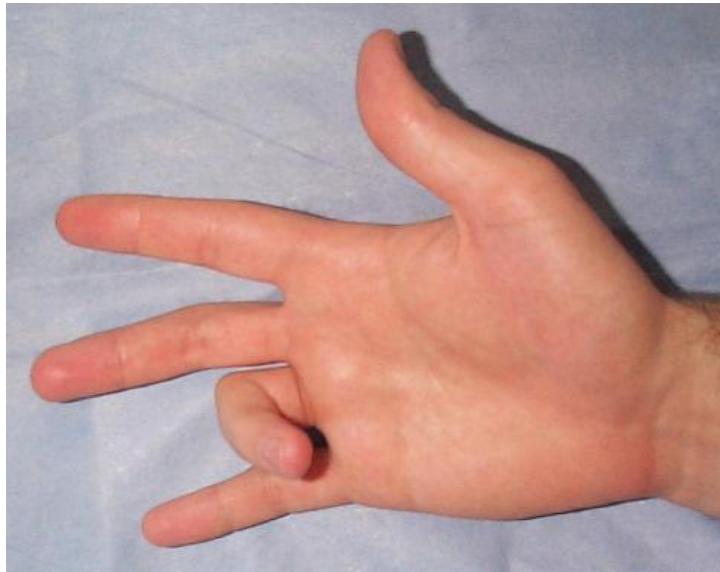


Don't miss it

- Scaphoid nonunion



- Trigger finger



Don't miss it

- Tumors



Elbow joint

Pain elbow joint

With swelling

1. Myositis ossificans
2. Olecranon bursitis
3. Rheumatoid arthritis
4. Tumors

Without swelling

1. Tennis/Golfers elbow
2. OCD
3. Radial nerve entrapment



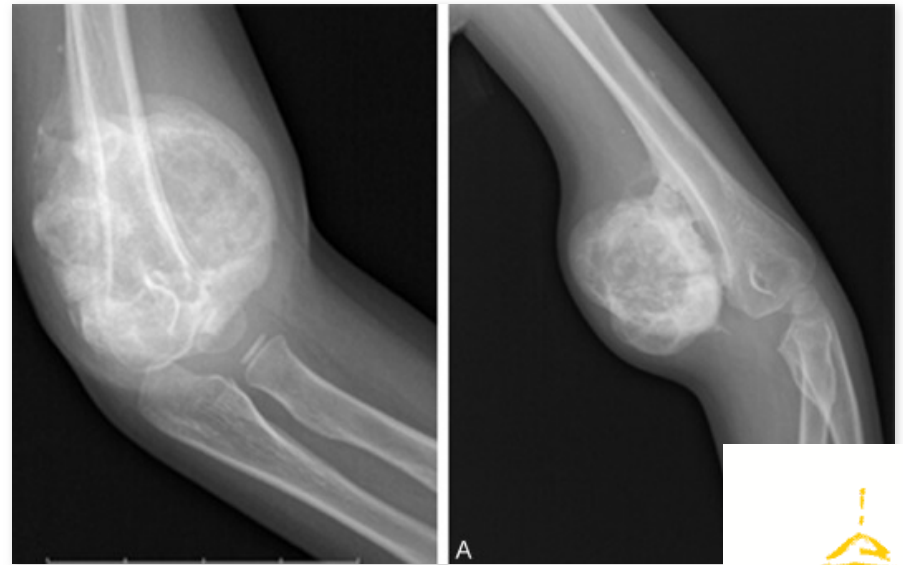
Don't miss it

Olecranon bursitis



Don't miss it

- Myositis ossificans



Don't miss it

Rheumatoid arthritis



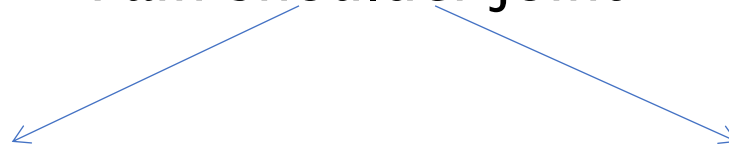
Don't miss it

Osteochondritis



Shoulder joint

Pain shoulder joint



With swelling

1. Subacromial bursitis
2. TB shoulder
3. Bone tumors
4. Charcot joint
5. Rheumatoid arthritis

Without swelling

1. Rotator cuff arthritis (PAS)
2. Calcific tendinitis
3. Impingement Syndrome
4. RC tear



Don't miss it

Calcific tendinitis



Don't miss it

Neuropathic joint



Don't miss it

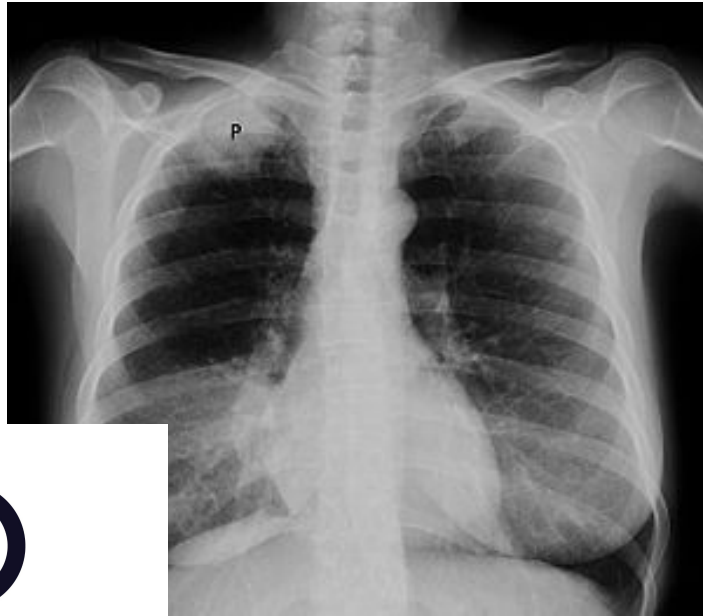
Lytic lesion



Don't miss it

Shoulder pain

Pancoast tumor



Hip joint

Pain hip joint

Paediatric

Adult

With fever

1. Septic arthritis
2. TB

Without fever

1. Transient synovitis
2. SCFE
3. Perthes
4. CDH

1. Osteoarthritis

2. AVN

3. Piriformis syndrome



Don't miss it

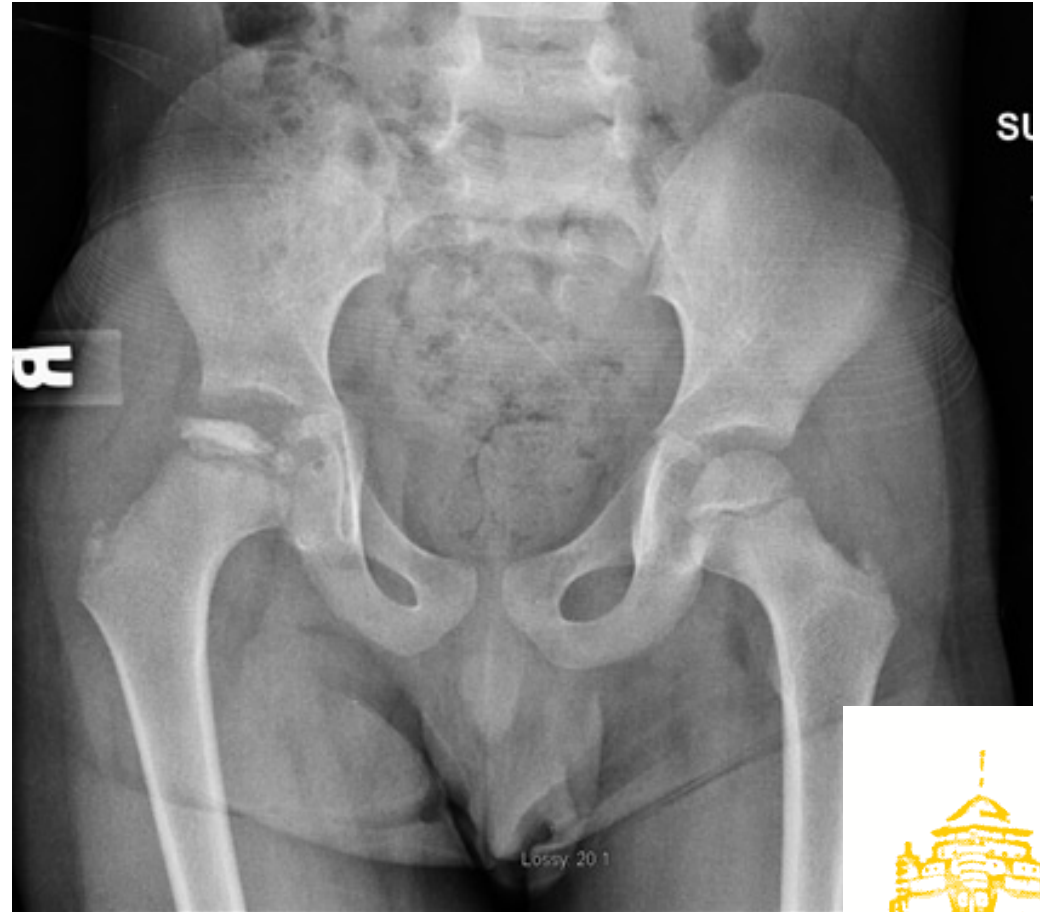
- Transient synovitis
- Presenting with knee or leg pain



Don't miss it

Perthe's disease

– Painless limping



Don't miss it

SCFE

- Pain & limping



Don't miss it

CDH

- *Asymmetry of gluteal fold*
- *limping*
- *ortolani test*



Don't miss it

- In ADULTS
- Osteoarthritis hip



Don't miss

- AVN Hip



Hip pain vs LBA with sciatica



Knee joint

Pain knee joint

With swelling

1. Bursitis
2. OA /MCOA /LCOA
3. Septic arthritis /TB
4. Tumors (OS/GCT/ABC)
5. Haemarthrosis

Without swelling

1. Chondromalacia
2. Meniscal tears
3. OCD
4. Gout/Pseudogout
5. DEFORMITIES

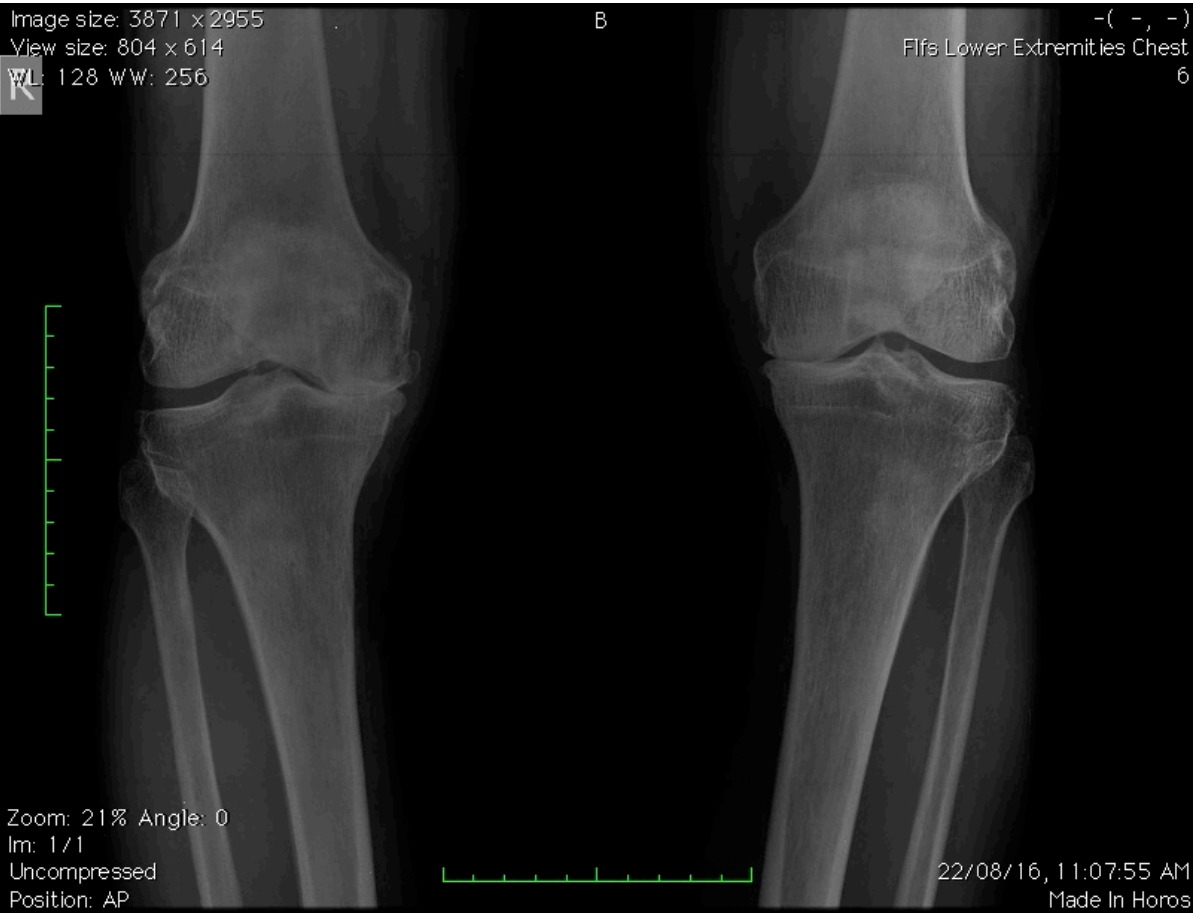
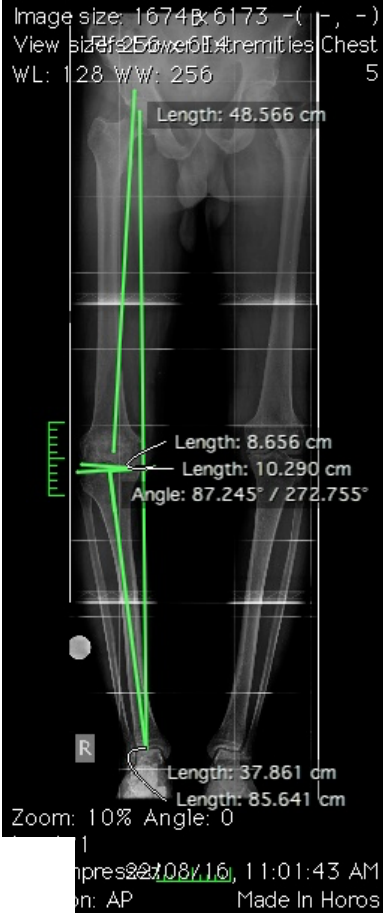


Don't miss it

- Osteoarthritis (TCOA)



MCOA



LCOA



Don't miss it

Pes Anseris Bursitis



Bakers cyst



Pre patellar bursitis



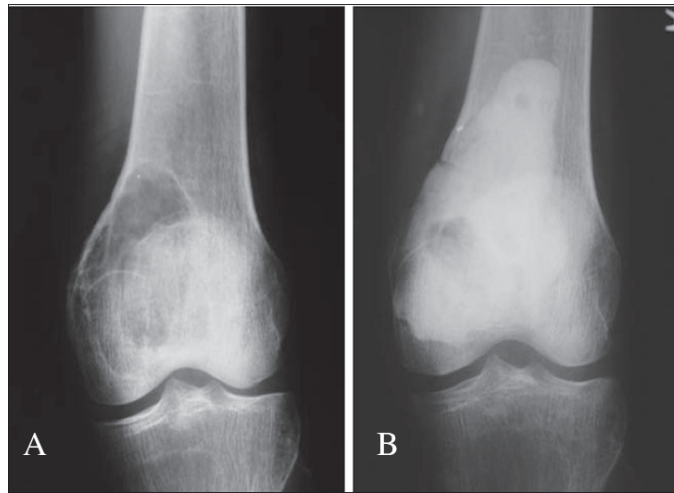
Don't miss it

- Gout / Pseudogout



Don't miss it

- Tumors



Pain and swelling in quadriceps unless proved otherwise is malignant



Don't miss it

- Genu varum and valgum in children

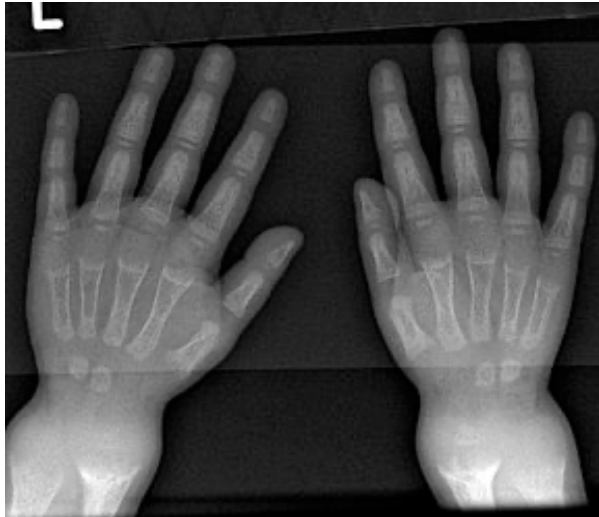


Causes

1. Physiological
2. Idiopathic
3. Metabolic (Rickets)
4. Post traumatic
5. Post infective
6. Blounts disease (varus)



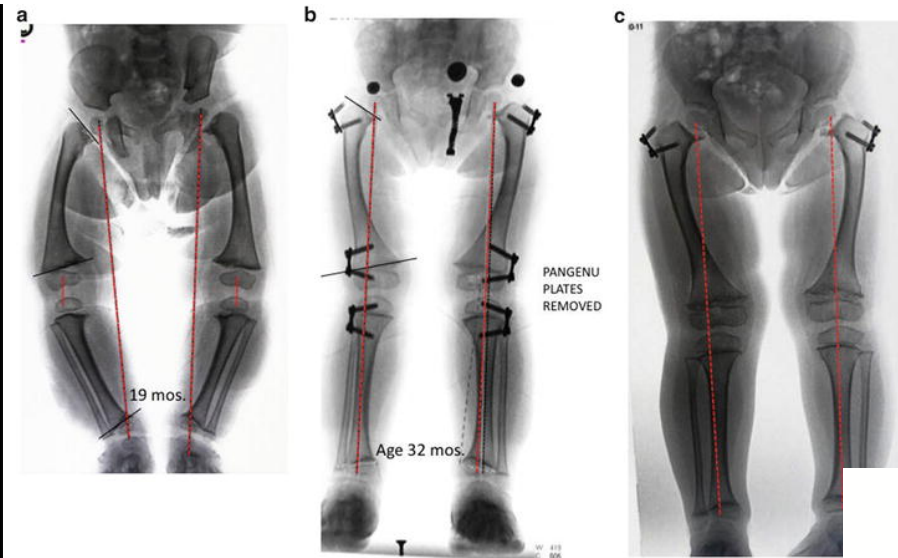
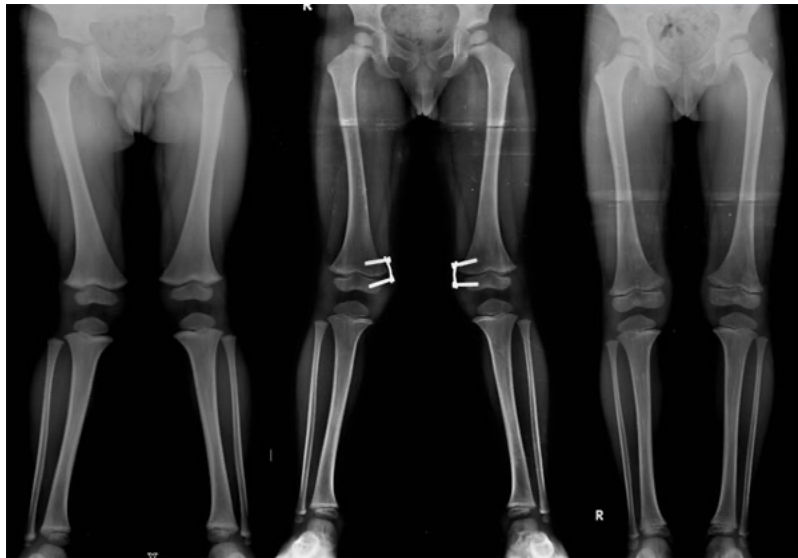
Rickets



Serum calcium is – low
Serum phosphorous – low
Serum alkaline phosphatase is high



Growth modulation (8 plate application)



Ankle joint

Pain ankle joint

With swelling

1. Cellulitis
2. RCB
3. Infections/septic
4. Tenosynovitis

Without swelling

1. OCD/cartilage injury
2. Ankle arthritis
3. Plantar fasciitis

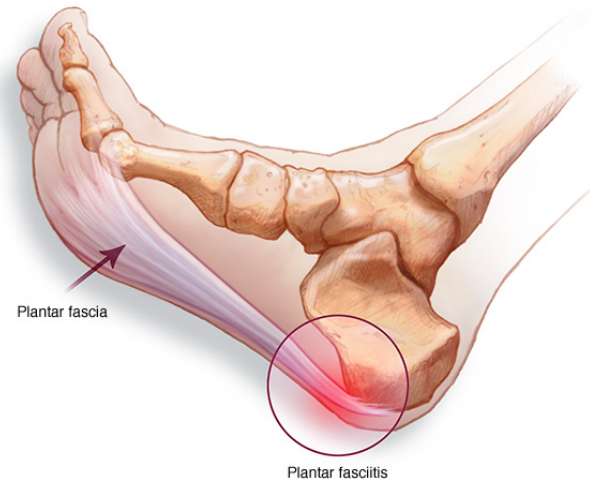


Don't miss it

- Tenosynovitis



- Plantar fasciitis



© MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.



- RCB



Take Home message

- *Should be aware of clinical problems.*
- *Do clinical examination in a systematic manner.*
- *Clinical examination is to be supported by investigation NOT to be replaced.*
- *Do reasonable management like splinting, compression bandage etc.*
- *Timely reference of the patients to higher center.*



Referral protocol

- Before referral make sure the patient is **Hemodynamically** stable
- Document** all the details about patient vitals and treatment given
- Document all the **MLC** aspect
- Always inform to the referral hospital Emergency department so that they can be ready to receive the



Golden hour

- Open fractures should be taken to the operating room in an urgent manner using appropriate surgical judgment.
- *Historically, the 6-hour rule* has been employed as the time limit within which an open fracture should be taken to the operating room for initial debridement.



What is Compartment syndrome

- Compartment syndrome develops when swelling or bleeding occurs within a compartment.(leg arm,forearm,hand)
- Because the fascia does not stretch, this can cause increased pressure on the capillaries, nerves, and muscles in the compartment.
- Blood flow to muscle and nerve cells is disrupted.
- Without a steady supply of oxygen and nutrients, nerve and muscle cells can be damaged.



Thank you

