

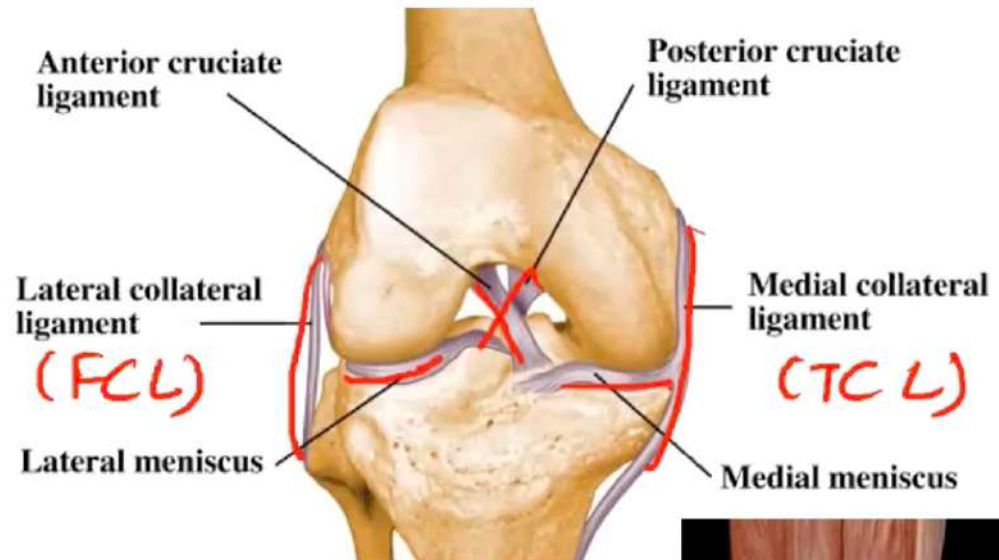
# ✓✓ Knee Dislocation

Distal femur ]  
Prox. tibia . ]

# Stabilizers of knee

- Static -

Capsule and Ligaments



- Dynamic

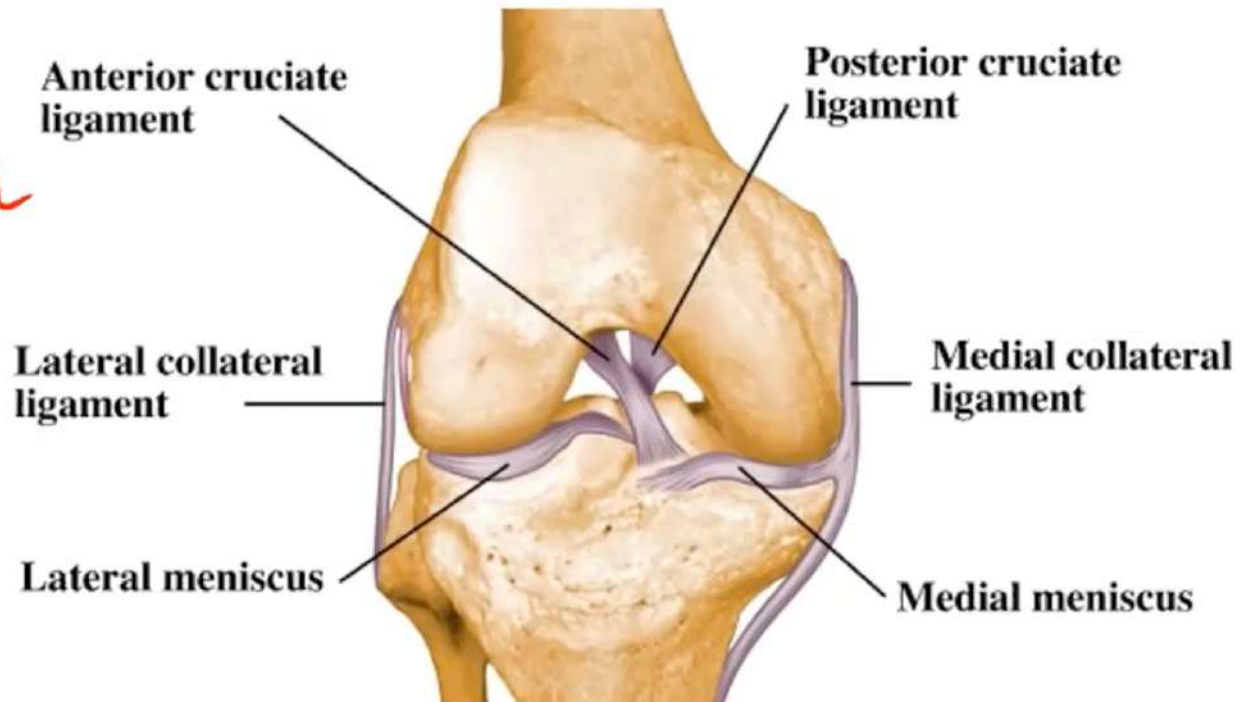
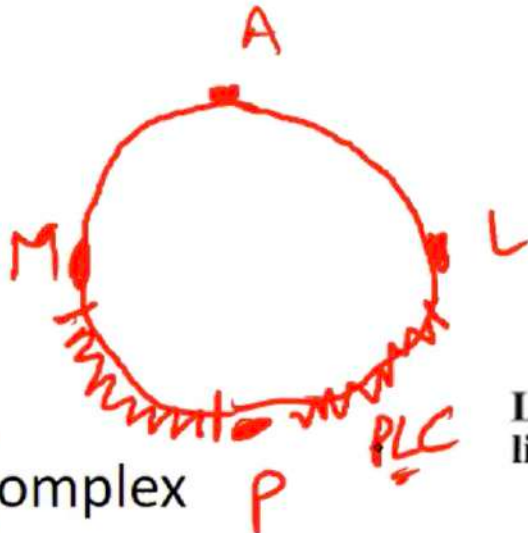
Muscles- → Quadriceps  
→ Hamstrings  
→ ITB  
→ Gastrocnemius  
→ Popliteus



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# Ligaments of knee

- ACL
- PCL
- MCL
- LCL
- PLC complex
- PMC complex



- Medial side

- MCL – Superficial and deep MCL

PMC- Between Sup MCL and PCL

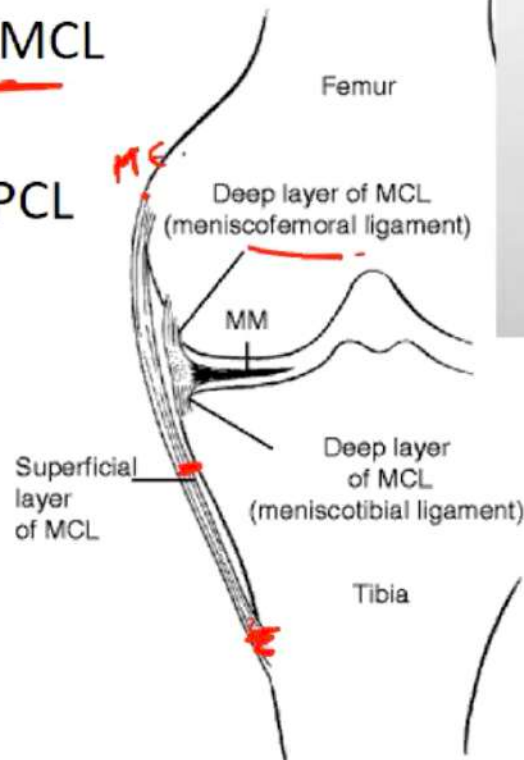
✓POL

✓OPL

✓SM

- Post horn of MM

Medial joint capsule



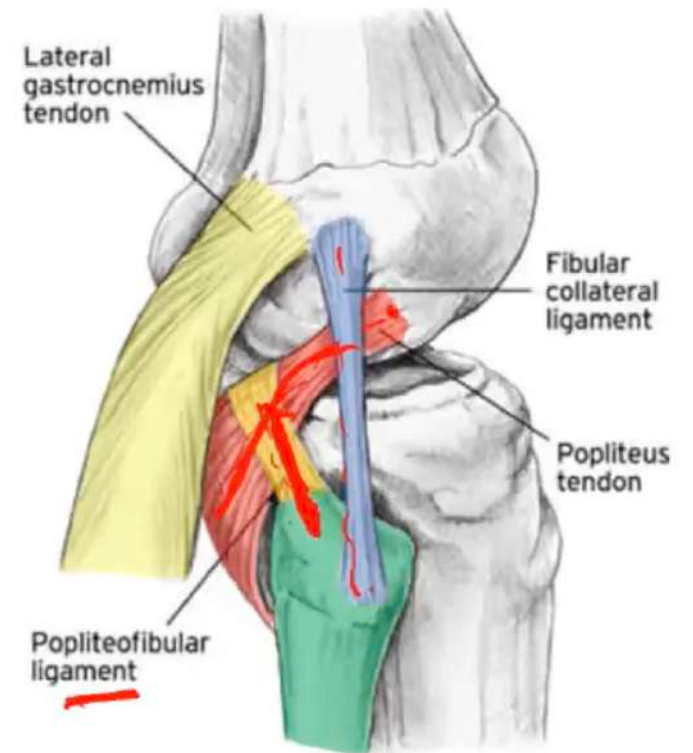
# Lateral side structures

- PLC- Popliteus tendon  
Popliteofibular ligament  
LCL-



✓ ITB

✓ Biceps femoris



# Associated Injuries

*Polytrauma.*

- Fractures –
  - ✓ Distal femur
  - ✓ Proximal Tibia
  - ✓ Patella

- ✓ Meniscus

- ✓ Ligament

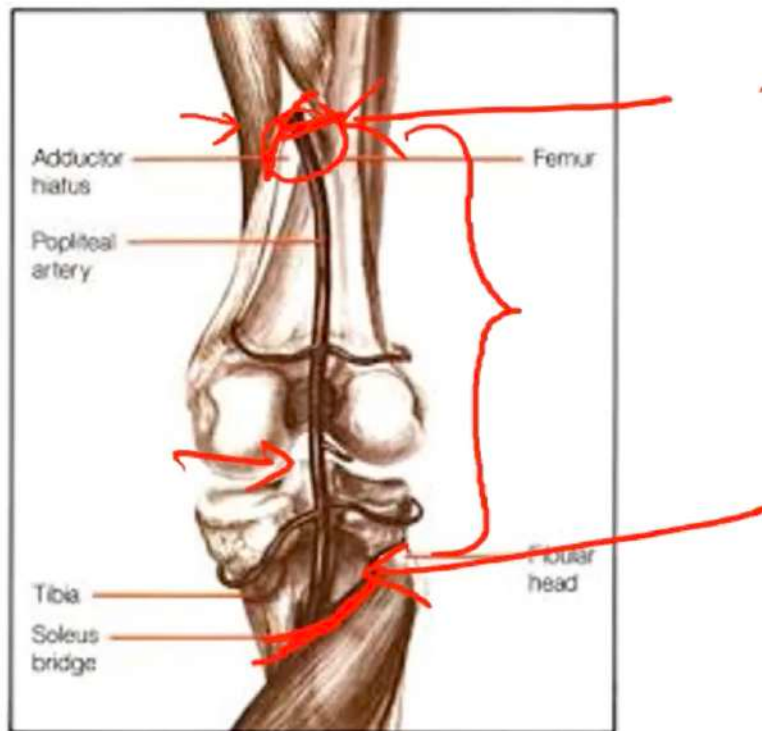
- ✓ Extensor mechanism injury

- Vessel injury and → *Popliteal @*

- Nerve injury → *CPN. — poor prognosis.*

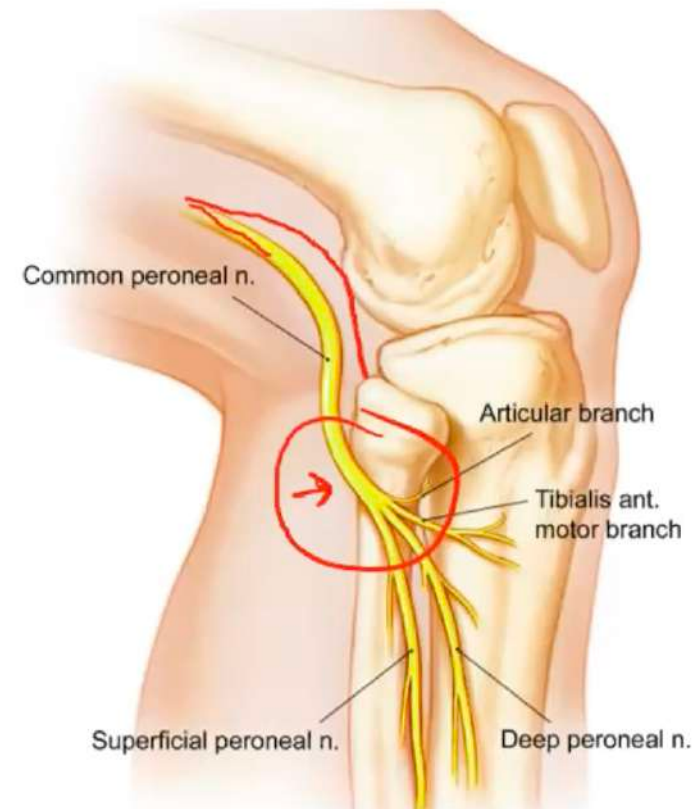


# Vascular injury. Why so common ??



# Common Peroneal nerve injury

- More commonly associated with PLC injury



Most common type associated with peroneal nerve palsy?

- A. KD I
- B. KD II
- C. KD III M
- D. KD III L



# Clinical presentation

- ✓ It may spontaneously reduce.
- True incidence is underreported.

- ✓ Pain
- Swelling
- Deformity



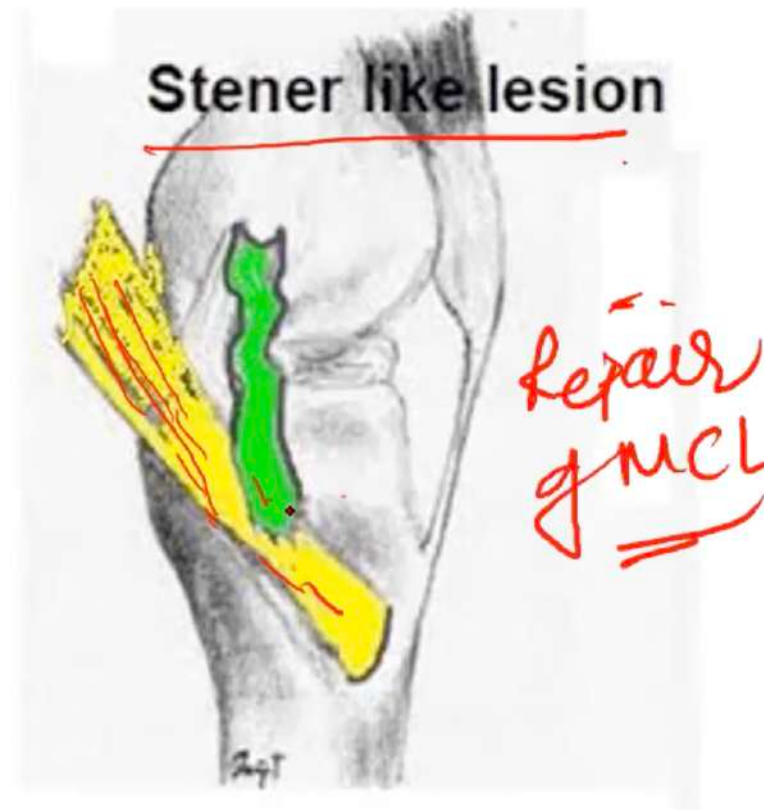
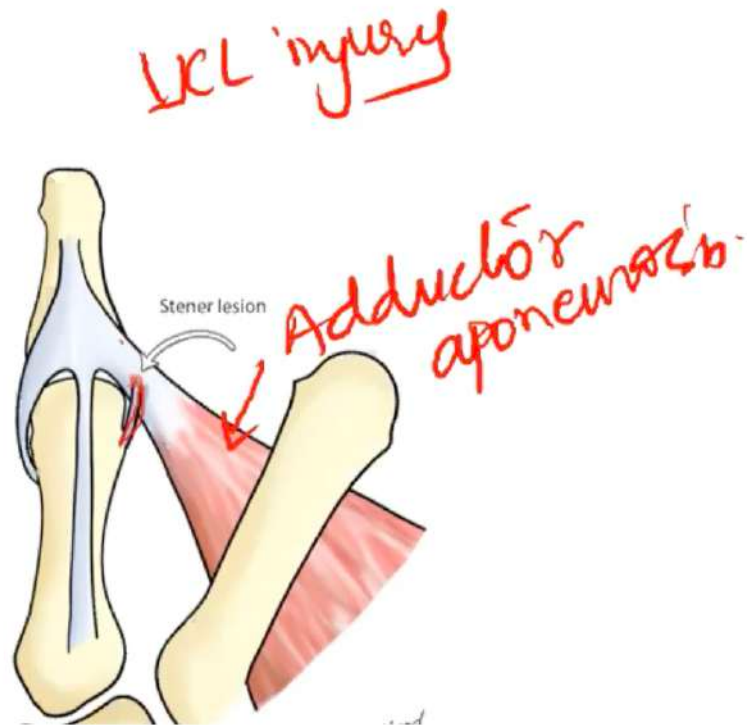
- Dimpling- Needs immediate reduction
- Incarceration of medial structures/ MCL- If irreducible – open reduction
- ✓ Prepatellar abrasion- Dashboard injury- Posterior dislocation



✓ Posterolateral dislocation

- ① • Vascular examination- Check distal pulses- Dorsalis pedis and Posterior tibial artery  
*before & after reduction*
- ② • Neurological examination – Check EHL, Tibialis anterior, EDL  
*→ soft drop.*  
*→ Sensory loss over 1<sup>st</sup> dorsal web space (CPN).*
- ③ • Check for Compartment syndrome – Pain on Passive stretch  
*→ fasciotomy*

# Stener lesion in Knee??



# Examination for ligaments

- Best to be done after reduction under anesthesia

- ✓ Varus stress → LCL tear.

- ✓ Valgus stress → MCL

- ✓ Lachman test → ACL

- ✓ Posterior Drawer test

- ✓ Dial test . PCL.

→ PLC'



# Xray

- AP and lateral view
- ✓ Joint space widening
- ✓ Incongruity
- ✓ Subluxation
  - Associated #
  - Arcuate sign

→  
"Post"



# Arcuate sign

Segond's

PLC/  
LCL



# Stress Xrays



Varus  
Stress  
3-4mm



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# Role of CT scan

- Associated #
- Avulsion of ligaments

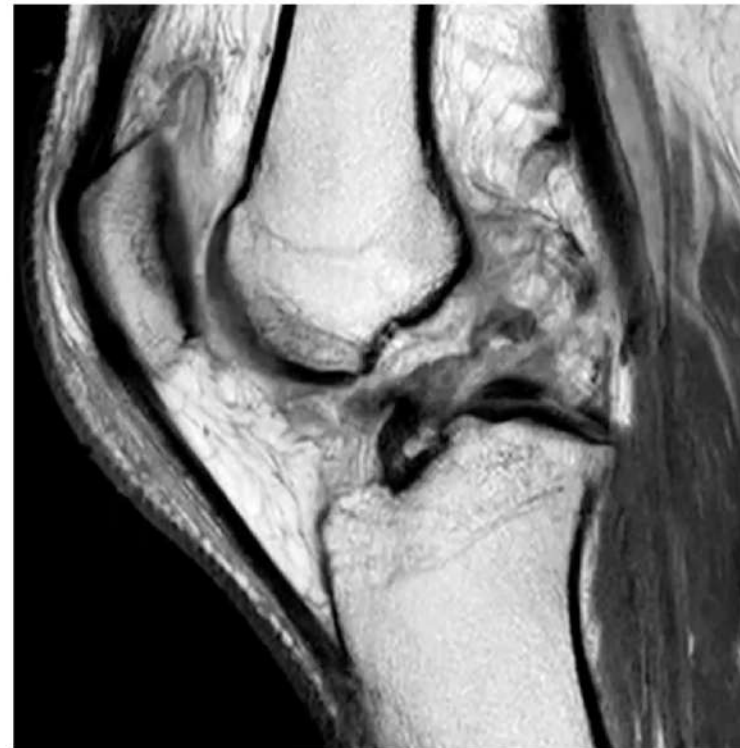


# Role of MRI

- ✓ Cartilage injury
- ✓ Meniscus
- ✓ Ligaments
- ✓ Tendons
- ✓ Extensor mechanism

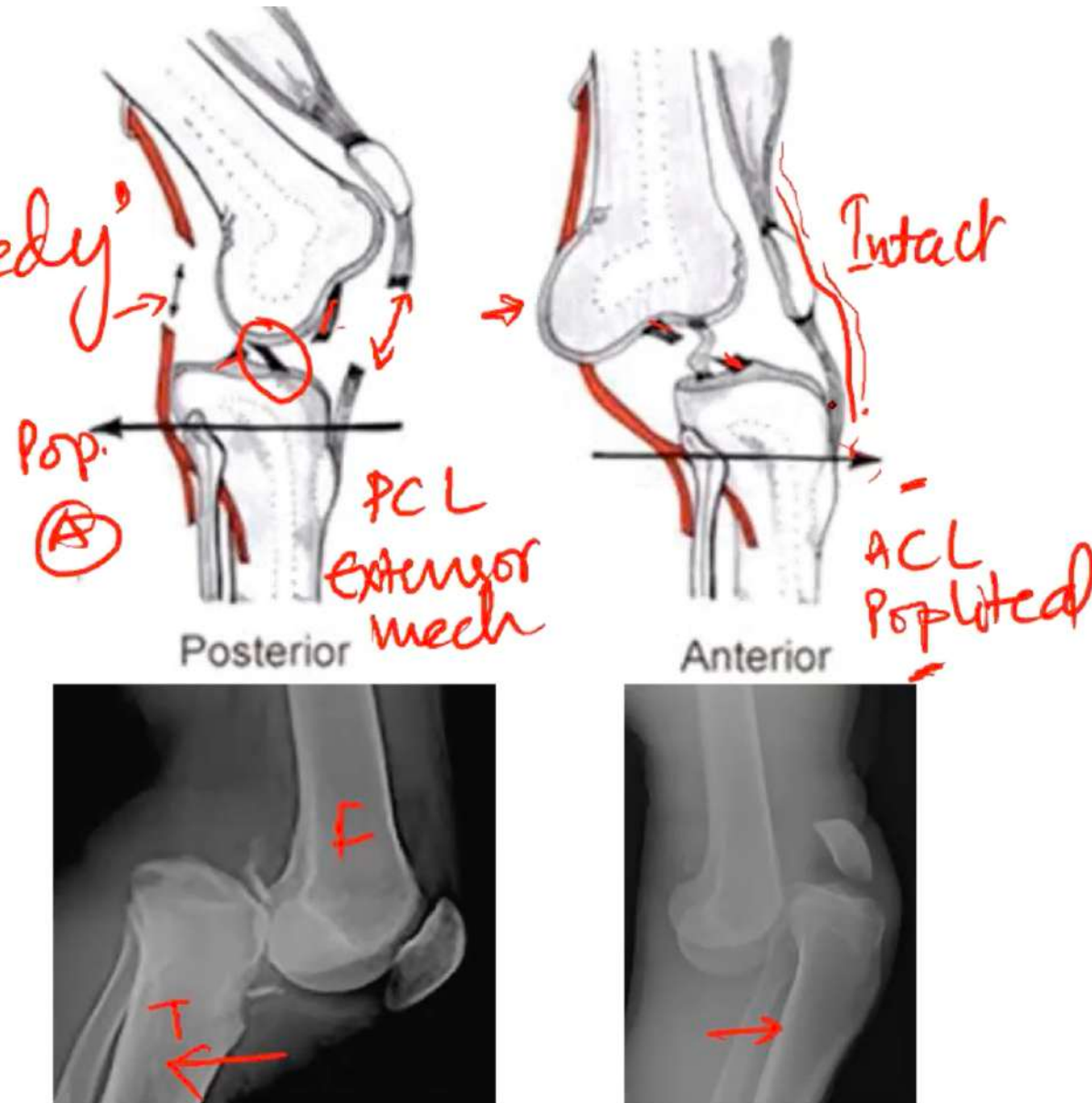
- Degree of tear
- Location of tear

*Stener lesion.*



# Classification

- Anterior
- Posterior
- Medial
- Lateral



# Classification 1992

- Schenck Anatomical classification

- KD I → one cruciate

- KD II → Bi cruciate (ACL + PCL)

- KD III → — + Collateral (1)

- KD IV → 4 — (ACL + PCL + MCL + LCL)

- KD V → # dislocation

[ • C → Artery  
• N → Nerve ]

ACL + PCL +  
MCL +  
Pop (A) + N.  
↓  
KD III M CN

# Most common type of KD??

- A. I
- B. II
- C. III
- D. IV
- E. V

# Classification 1992

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↓  
KD III M CN

Most common type associated with peroneal nerve palsy?

- A. KD I
- B. KD II
- C. KD III M
- D. KD III L

# Treatment

- Reduction- Immobilization- Repair/ reconstruction of Ligaments

## Reduction

*Orthopaedic Emergency.*

- Immediate Close reduction
- Check Vascularity and nerve examination before and after reduction

# Reduction technique

[Traction]  
X  
Accentuate  
the deformity  
then  
come.



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# Irreducible reduction

- (Posterolateral dislocation)
- Contraindication of close reduction
- Buttonholing of medial femur condyle through the medial capsule.
- Dimple sign



# Open reduction

## Medial parapatellar approach

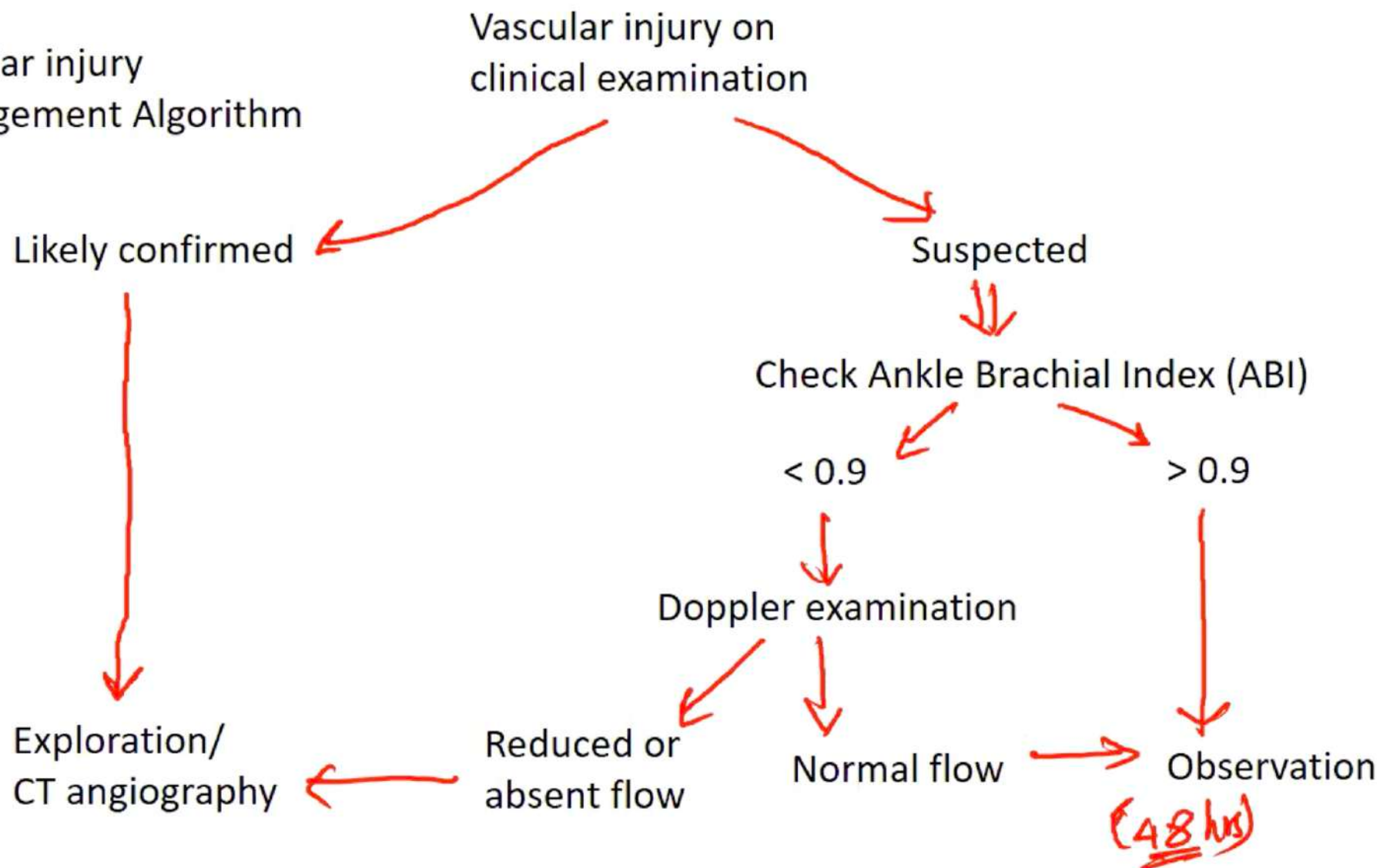


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## Vascular injury

- Amputation rate = 10-20% if addressed within 6 hours
- Amputation rate = 80-90% if delayed by > 6 hours

## Vascular injury Management Algorithm



Most common pattern of popliteal injury in knee dislocation ??

- A. Complete tear
- B. Aneurysm
- ✓ • C. Intimal tear
- D. Longitudinal tear



→ 48hrs  
=.

# Immobilization- External fixator/ Cast

## Indications

- External fixator- Open dislocation  
Skin condition not good/ Post fasciotomy  
Post vascular repair  
Very unstable joint

Important points-

- AL of femur. Ant aspect of tibia.
- Away from knee.



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# Transarticular Pin

- Midway between cast and fixator



# Repair/ Reconstruction of ligaments

- Timing – 10 to 21 days
- ~~/~~ Bony Avulsion- Fixation with screw/ suture anchor
- ~~/~~ Soft tissue avulsion – Repair with suture anchors/ spiked washers
- ~~/~~ Mid substance tear- Reconstruction with auto/allograft

•

## Fixation of bony avulsion



# Graft choice

- ✓ Hamstring tendon
- Bone patellar Bone tendon
- Quadriceps tendon
- Peroneus tendon

Multiligament

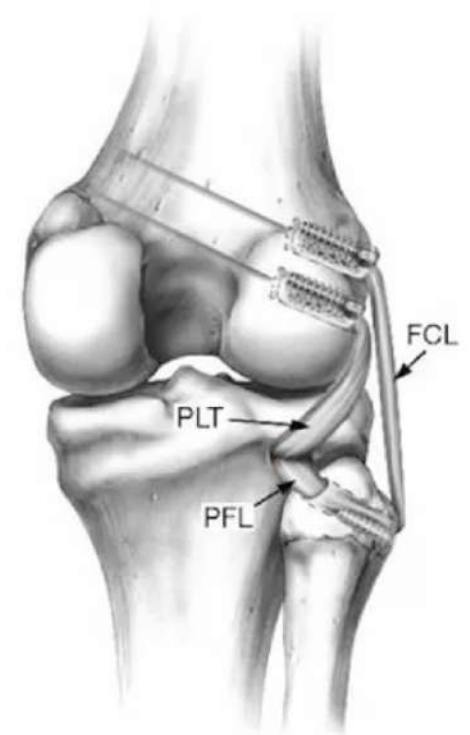
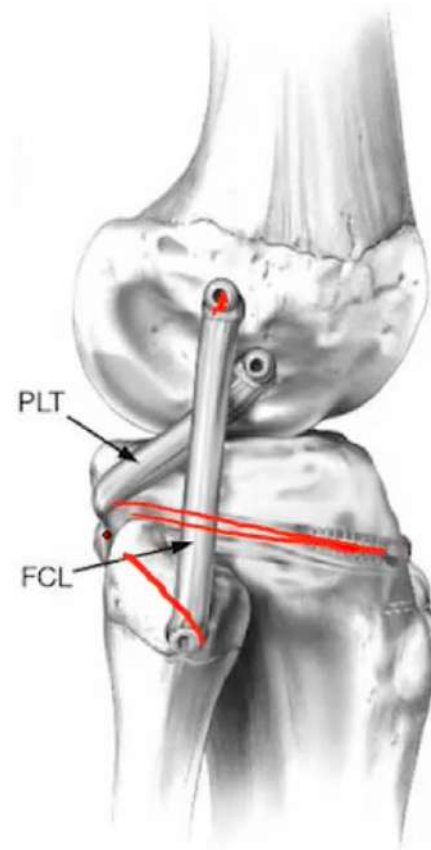
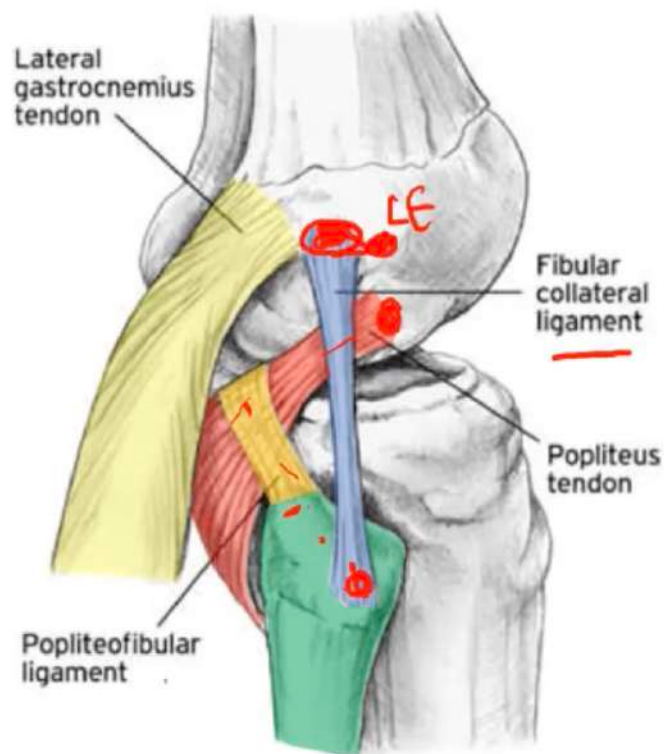
ACL PCL

MCL

LCL

✓ MCL injury

# PLC reconstruction- LaPrade



## Case example ACL + MCL injury



MCL +  
ACL



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- Thank You