

# Jenis cidera olahraga



# Injuries due to trauma

- ▶ Skin injury
- ▶ Muscle injury/muscle tear
  - Ectopic calcification
  - Myositis ossification
- ▶ Tendon injury/ligament injury
- ▶ Nerve injury
- ▶ Bone injury
  - Instantaneous fracture
  - Subchondral fracture
  - Stress fracture

Skin injury

Scalp laceration



## Abrasion due to direct violence



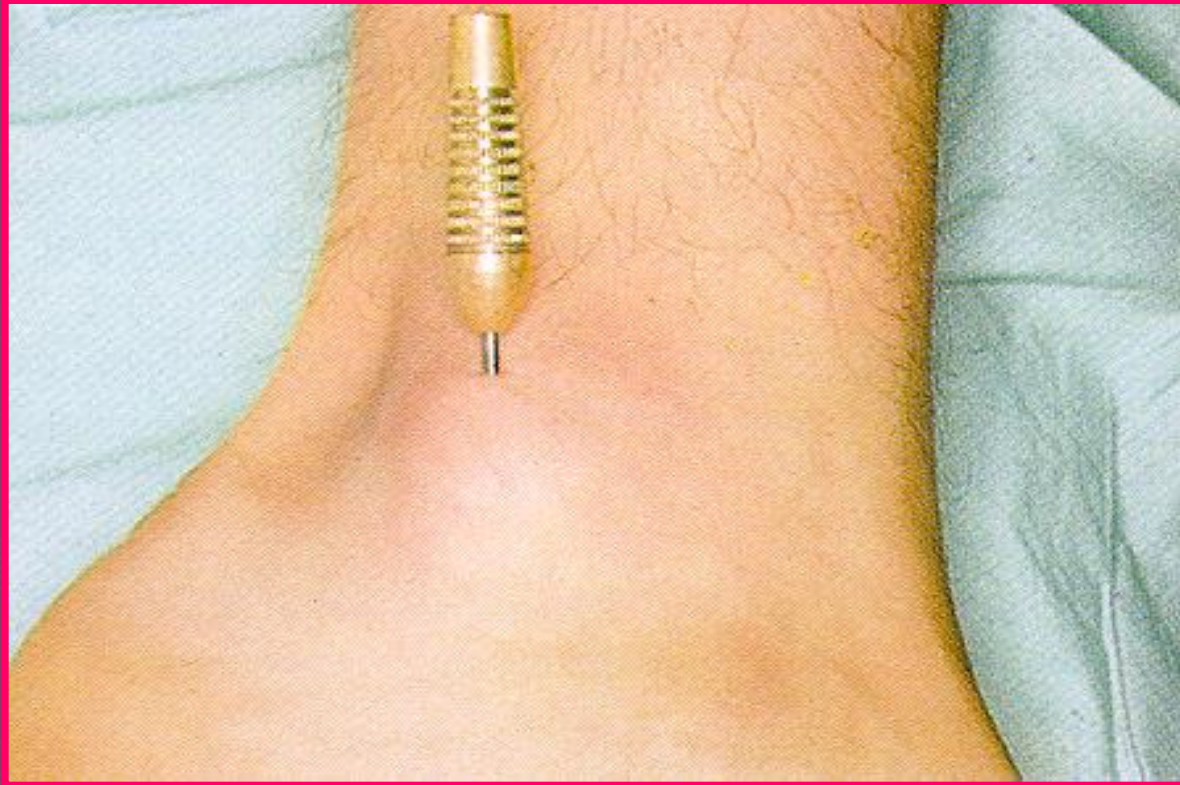
## Crush and laceration



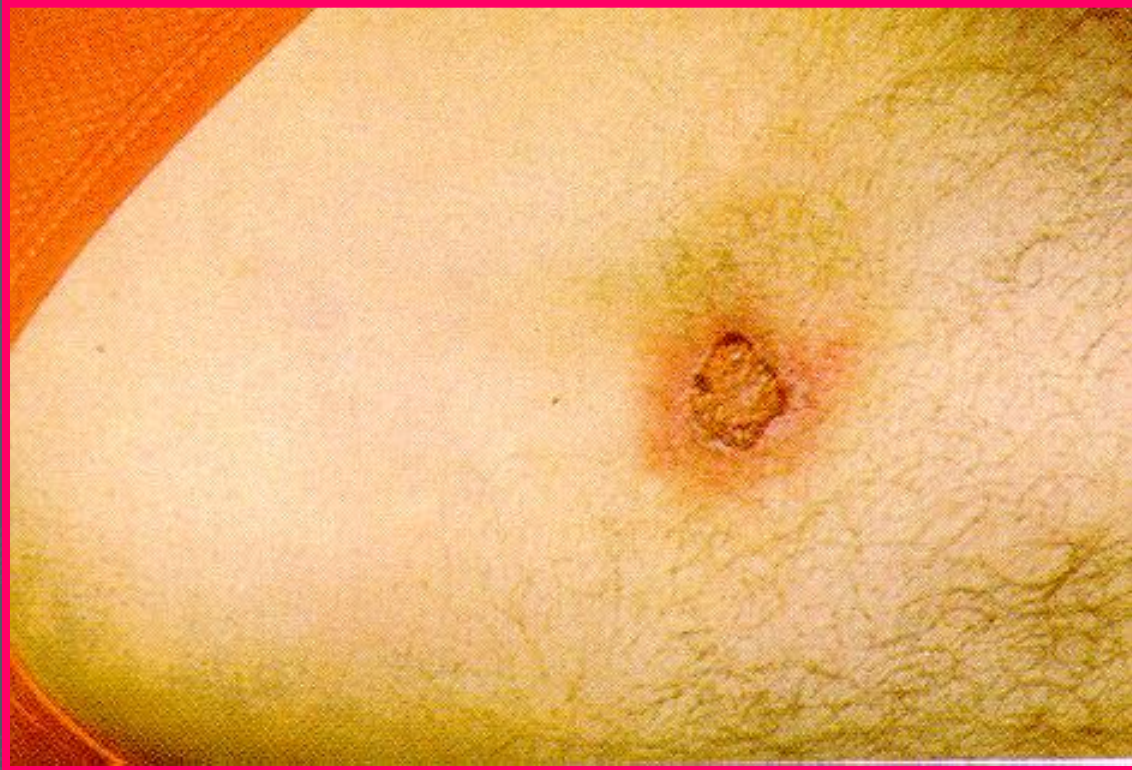
## Puncture wound



## Puncture wound



## Grass burn





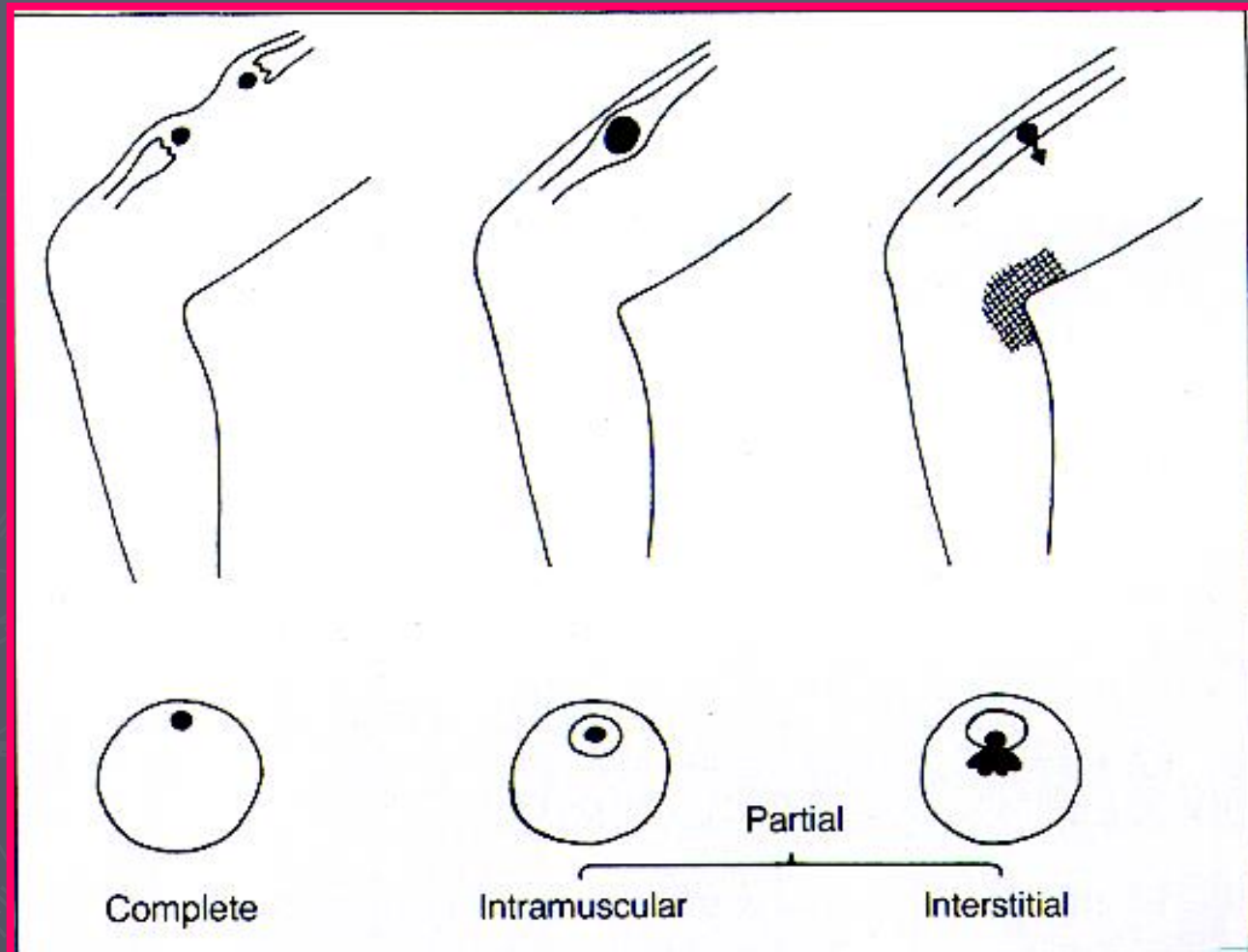
## Blistered hand



## Calloused palms



## Muscle injury/muscle tear : type



Different classification

## Action sequences





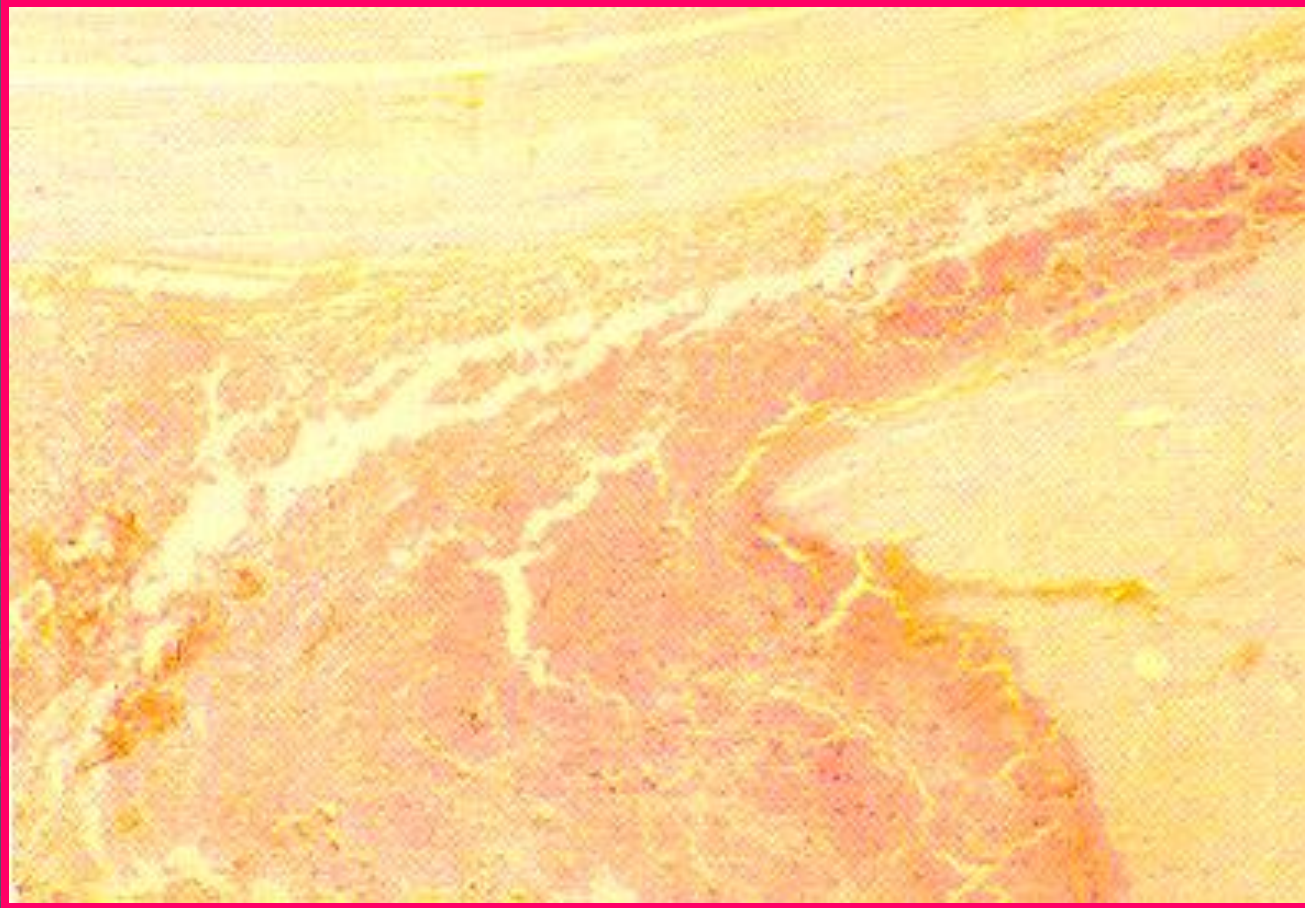
Complete muscle rupture



Intra muscular injury



interstitial injury

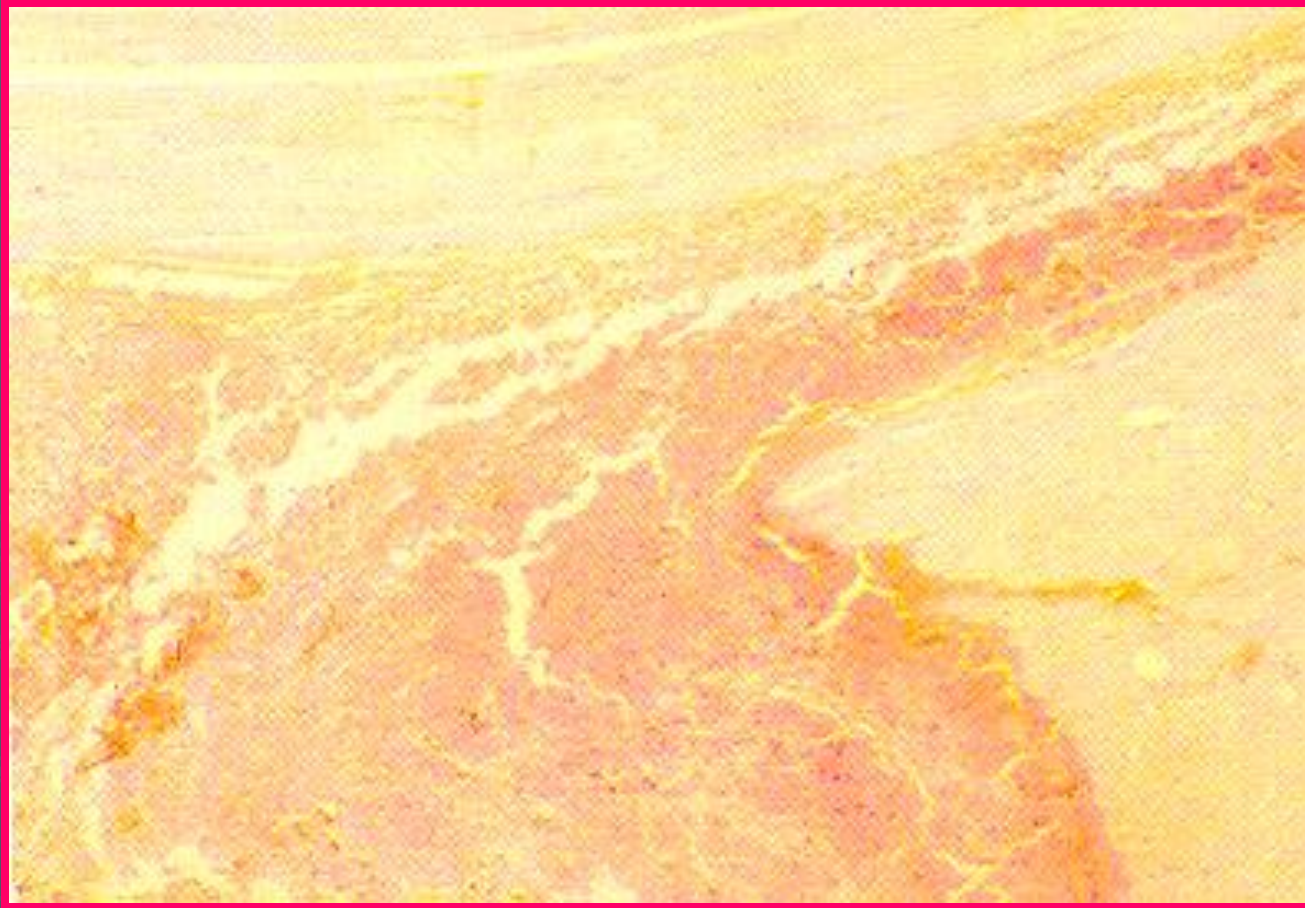


Muscle haematoma





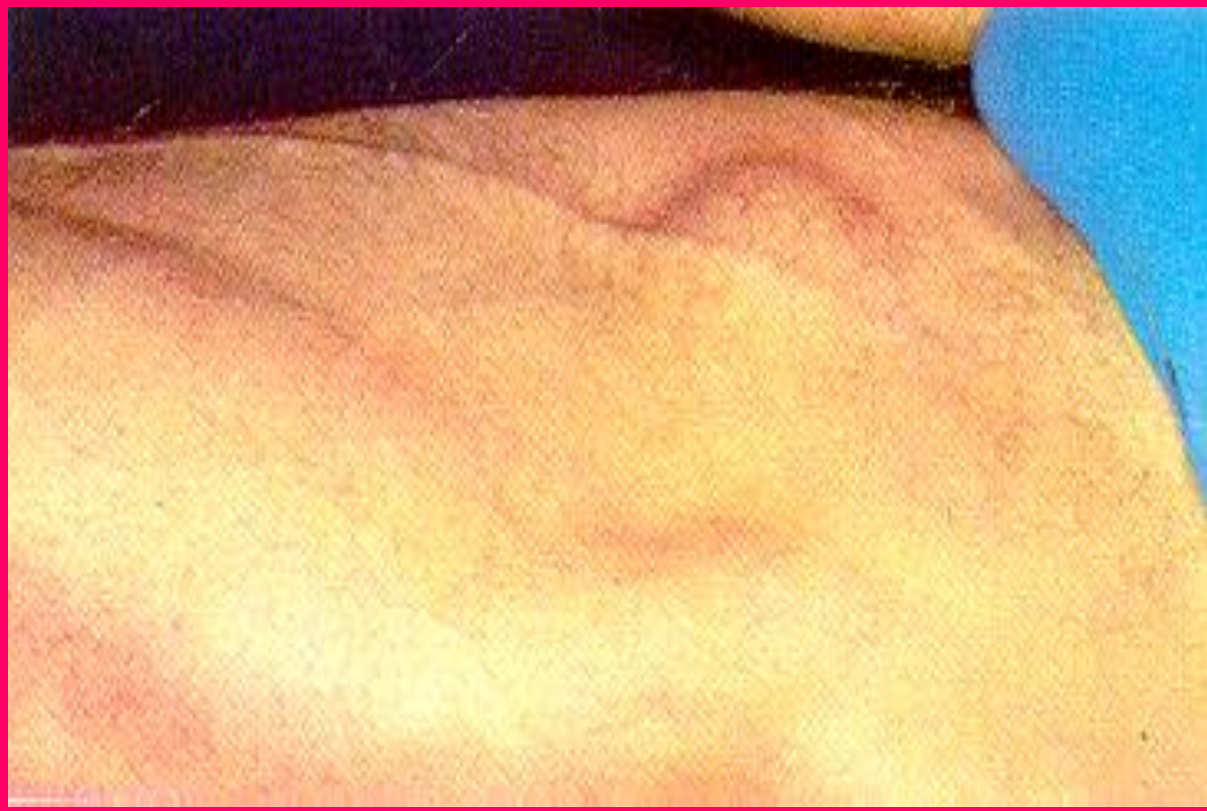
interstitial injury



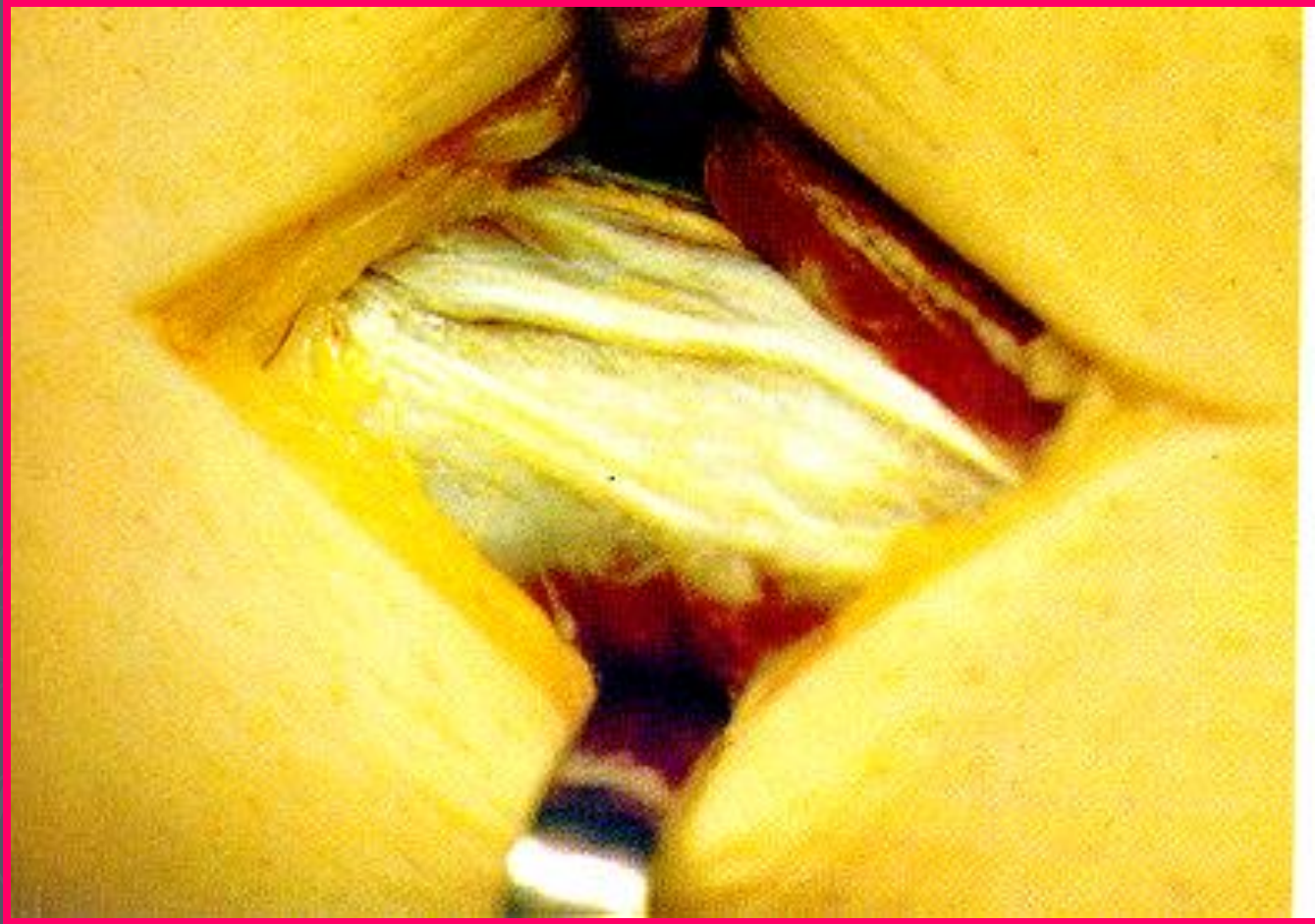
Muscle haematoma



Muscle haematoma



Muscle hernia



Muscle shortening

## Muscle spasm



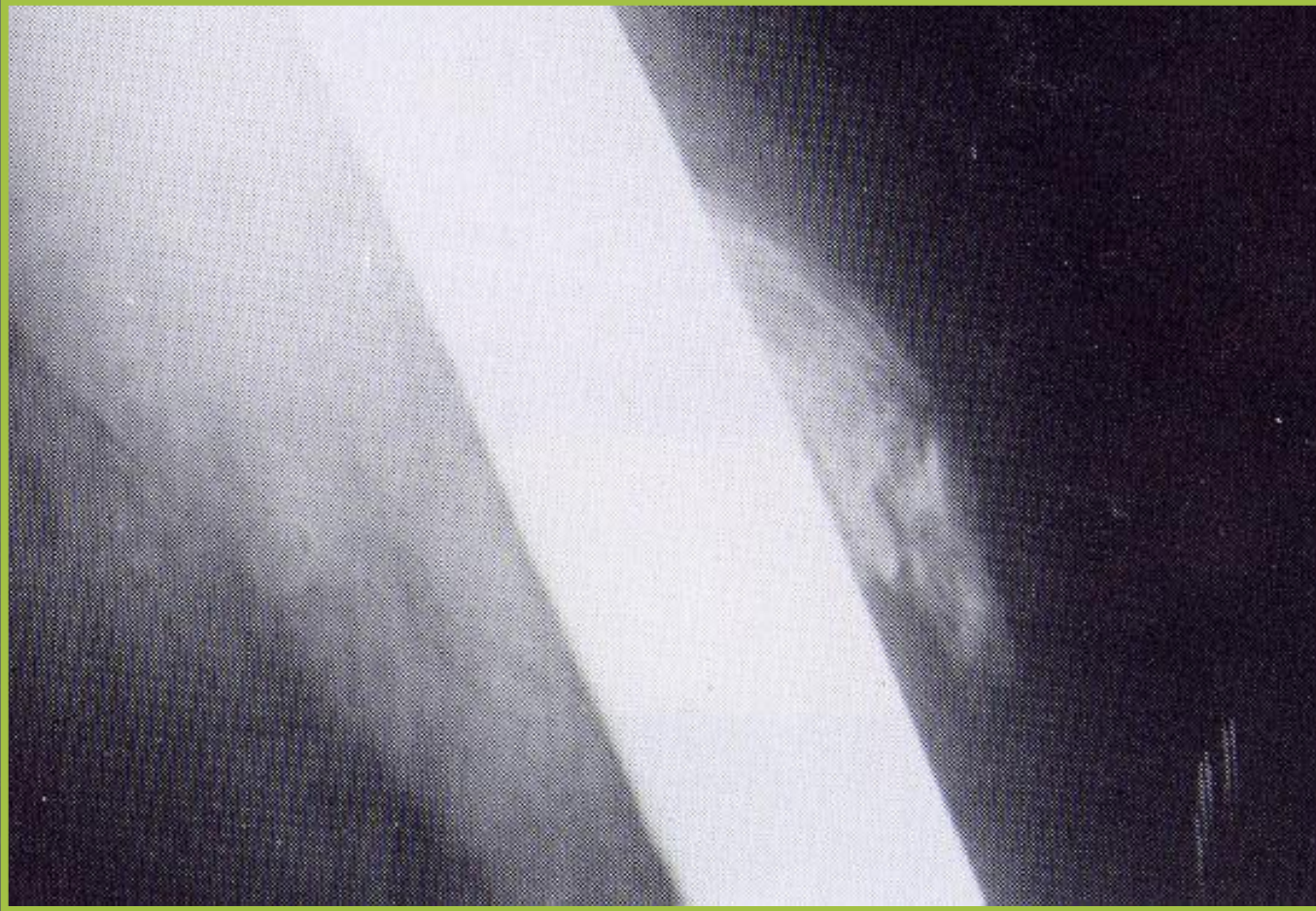


Loss of extensibility

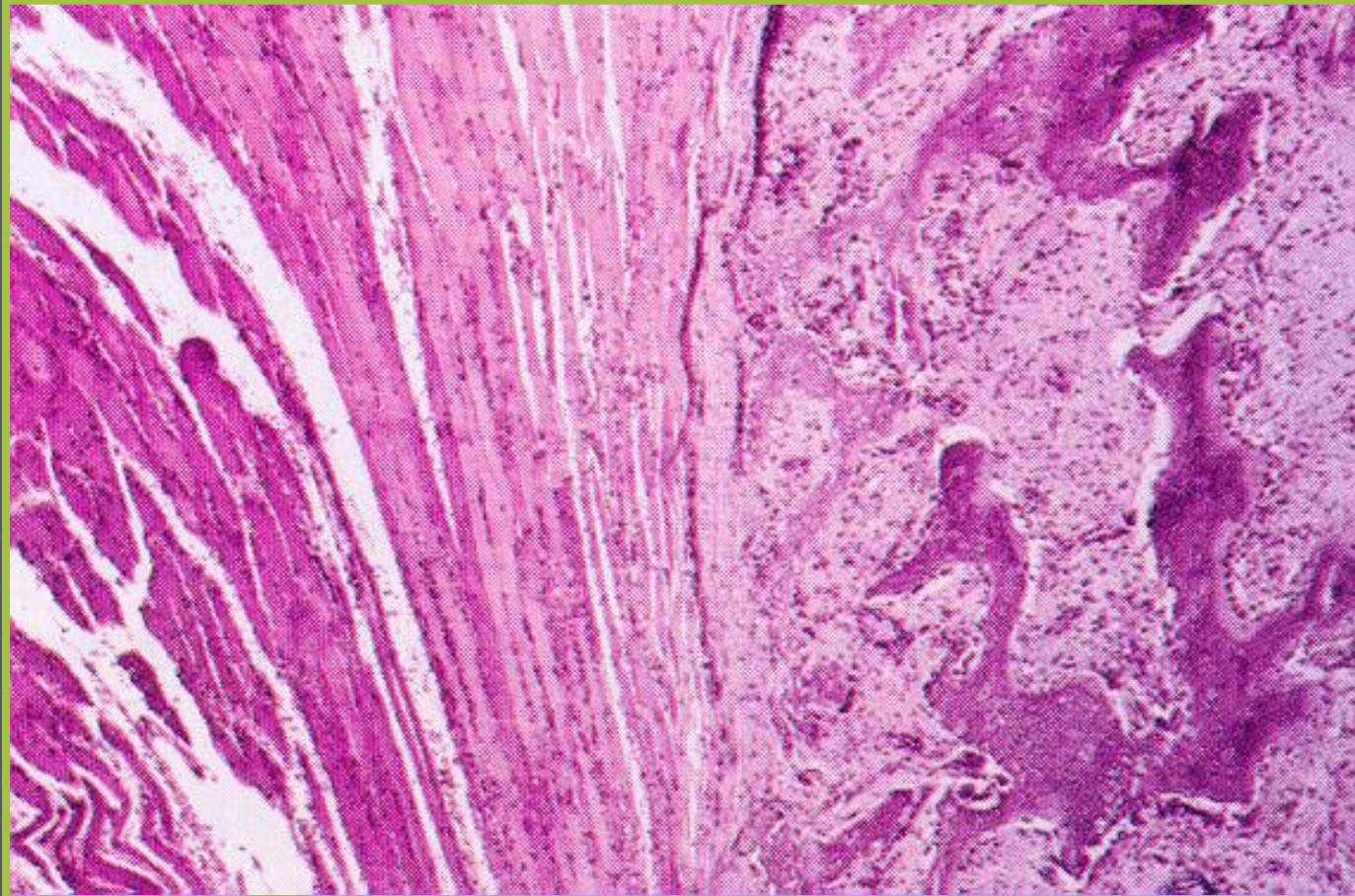


Haematoma

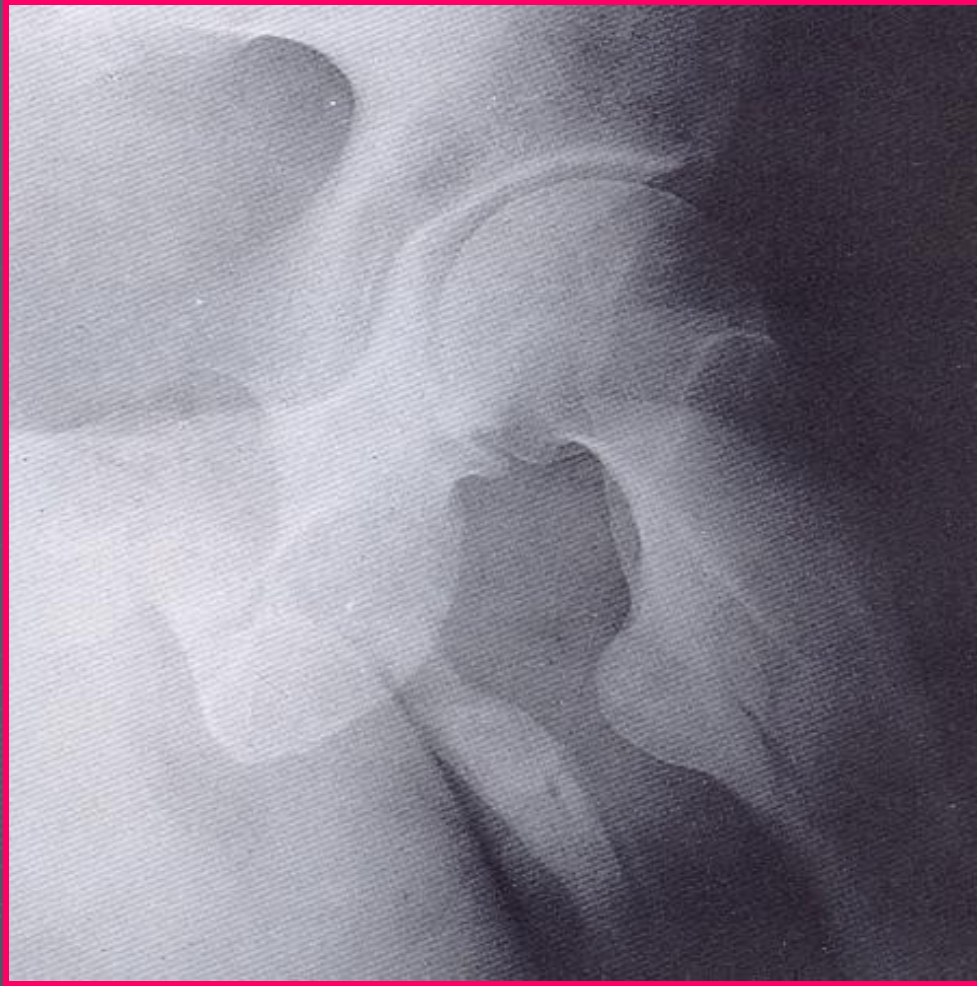




Radiograph showing ectopic calcification



ectopic calcification myositis ossificans.

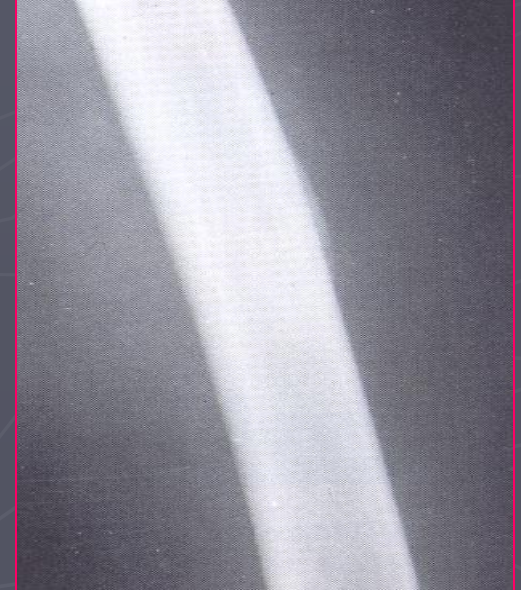
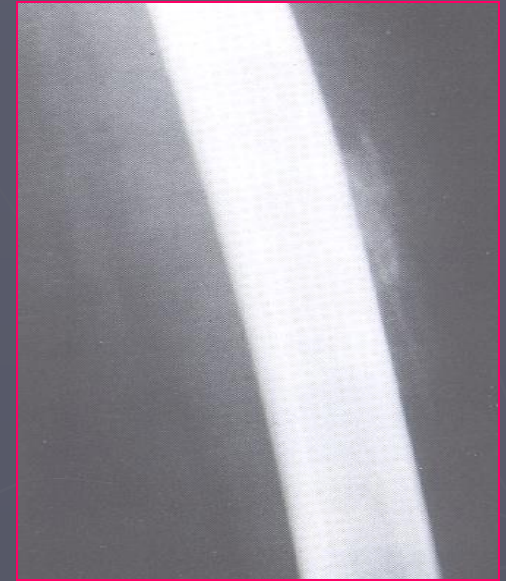
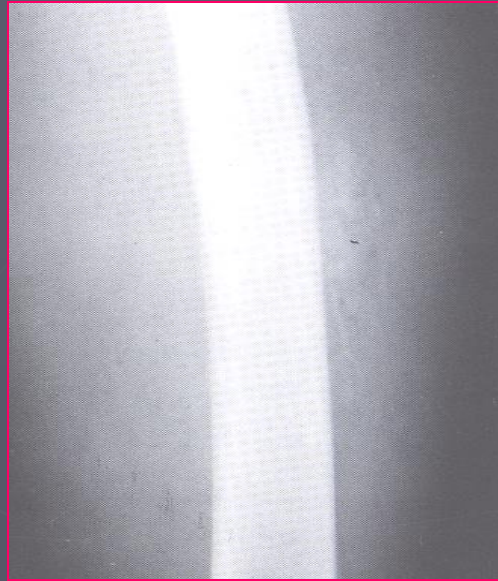
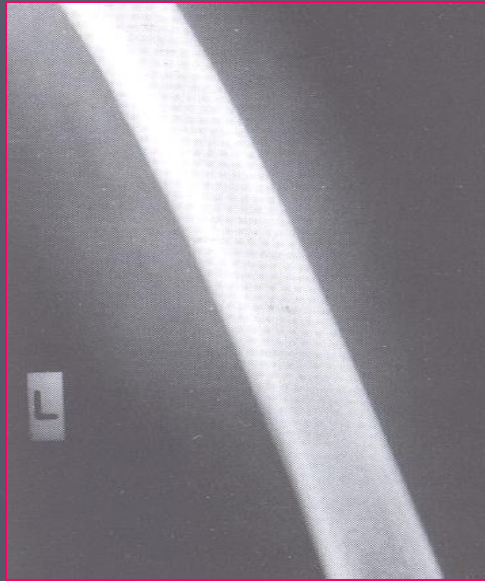


Ectopic calcification



Ectopic bone

# Myositis ossificans



# Classification injury by causal factors

## Consequential (due to sports participation)

- **Primary (direct result of sporting stress)**
  - ◆ **Extrinsic (Due to external violence)**
    - \* **Human (e.g. Body contact sports)**
    - \* **Implemental (eg. Raquet sports, gymnastic)**
      - **Instantaneous (due to immediate violence)**
      - **Overuse (due to repeated stress)**
    - \* **Vehicular (eg. Motor car accident)**
    - \* **Environmental (eg. Mountaieering, waters sport accident)**
  - ◆ **Intrinsic (due to stress developed within victim)**
    - \* **Instantaneous**
    - \* **Overuse**
    - \* **Active**
    - \* **Chronic**

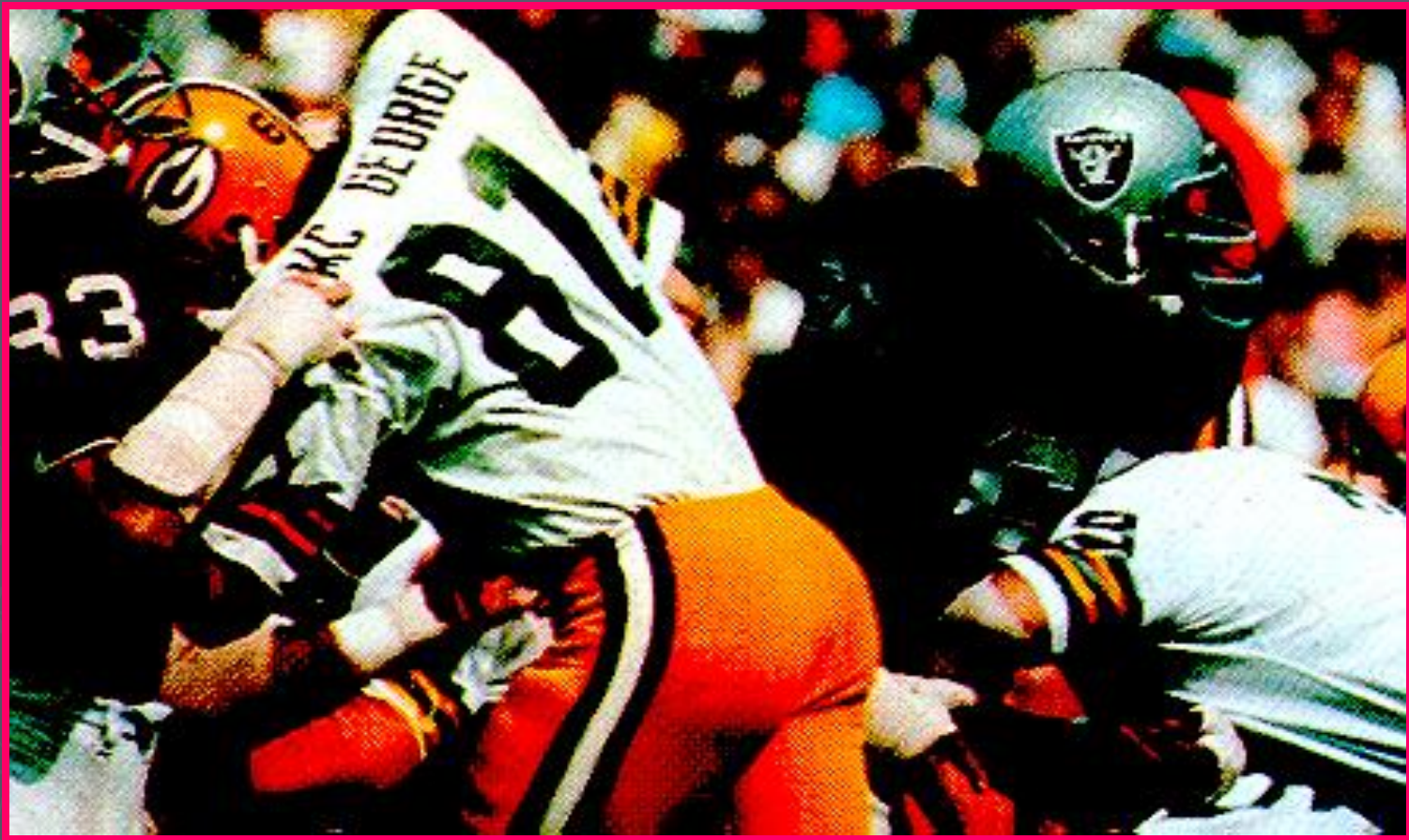
- **Secondary**  
as a result of an earlier often inadequately treated  
injury in sport

⇒ **Early**  
Developing soon after primary injury

⇒ **Late**  
Developing many years after injury

**Non consequential**

# Tackle in American football

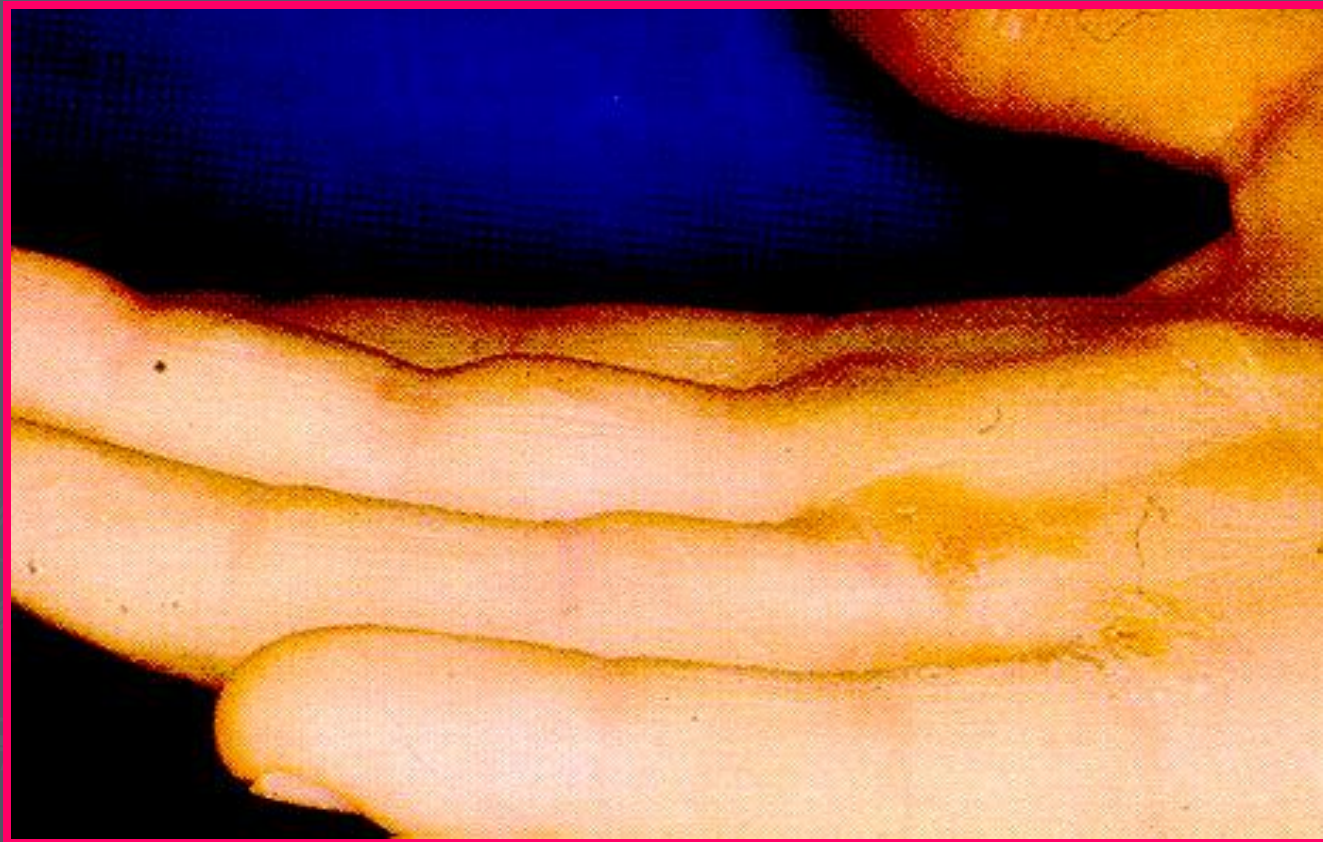




# Asymmetric bars collapse



# Callosity



# Crash in motor case



## Surfer 'wipes out' (extrinsic environmental)



## Complete rupture of tendo achilles



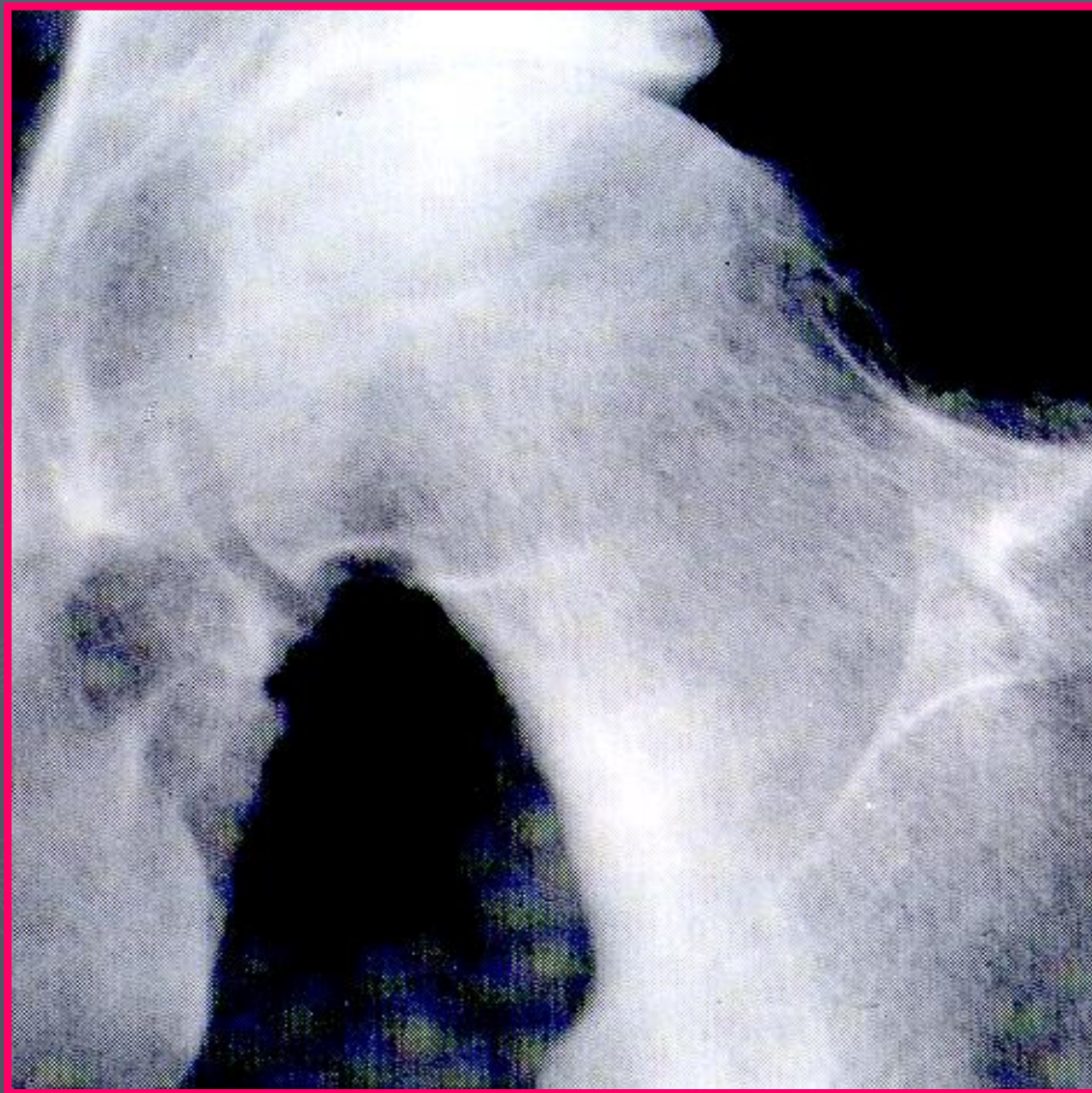
# Tenosynovitis



# Achilles tendonitis



# Osteoarthritis of the hip





# TENDON INJURY



## Type of lesion

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### Diagnosis

### Key features

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Rupture-complete  
Rupture-partial

Sudden onset  
Gap in tendon  
Sudden onset  
No gap in tendon

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Focal degeneration

Gradual onset  
Well localised tenderness  
Minimal swelling  
Moves with tendon

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Tendonitis

Gradual onset  
Diffuse tenderness  
Well-marked swelling  
Moves with tendon

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Peritendonitis-acute

Rapid onset  
Crepitus  
Diffuse swelling  
Does not move with tendon

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Peritendonitis-chronic

Slow onset-often with repeated episodes  
Localised thickening  
Does not move with tendon

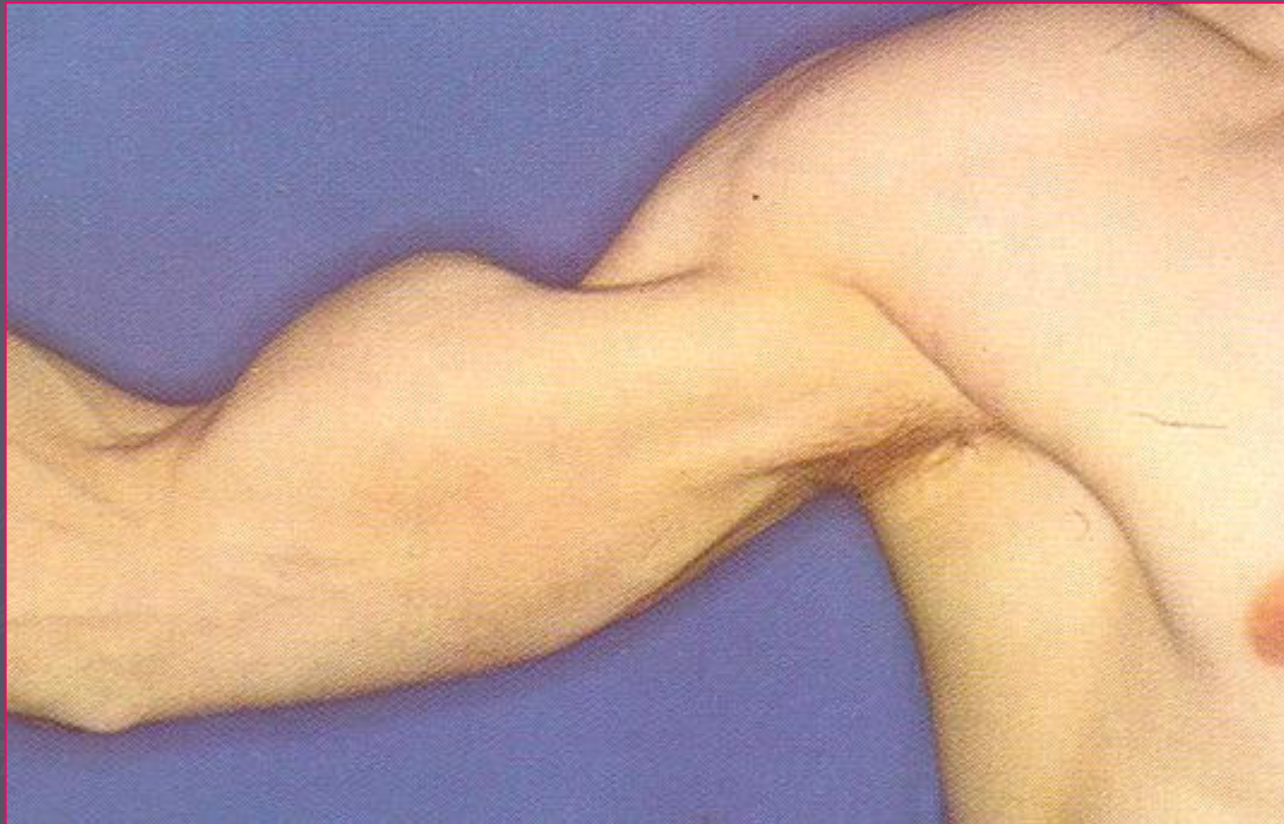
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Mixed lesion

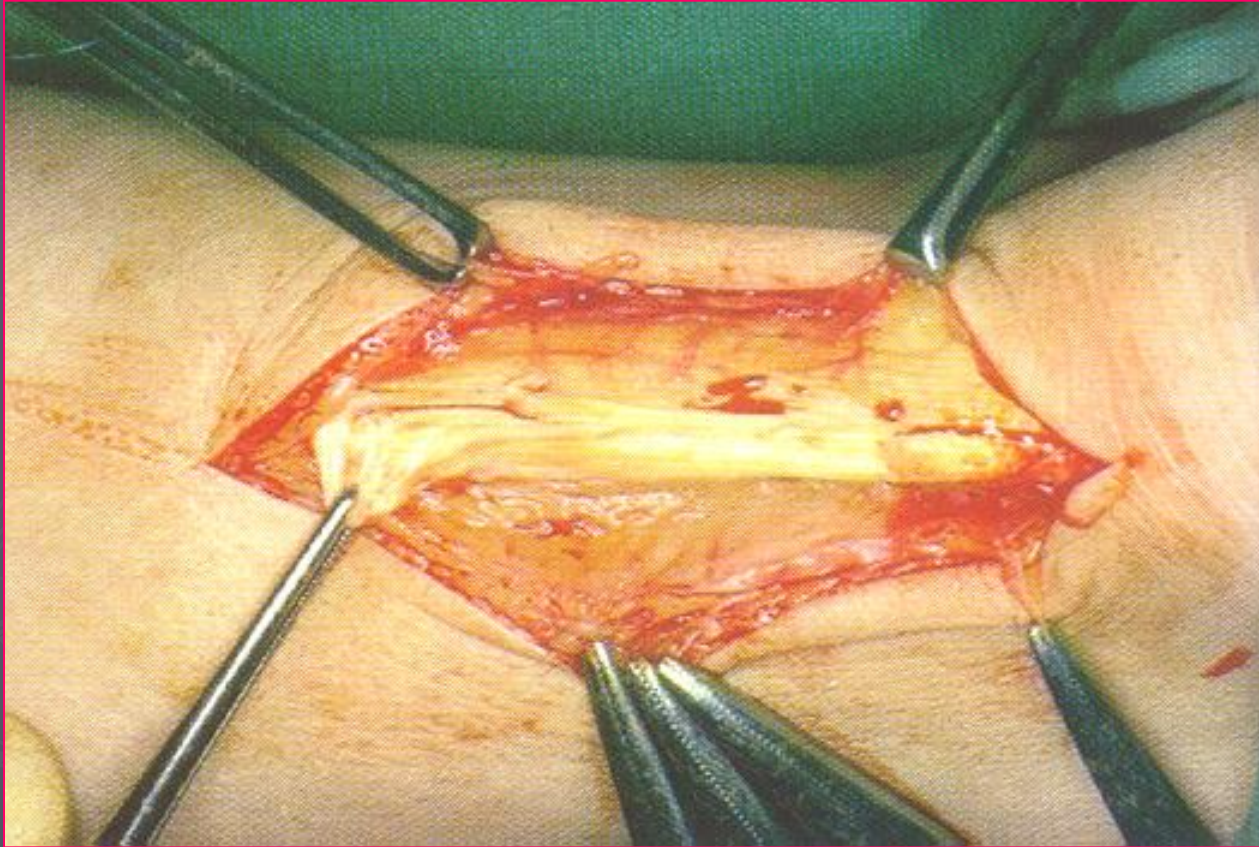
Mixed features

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## Complete tendon rupture (long head of biceps)



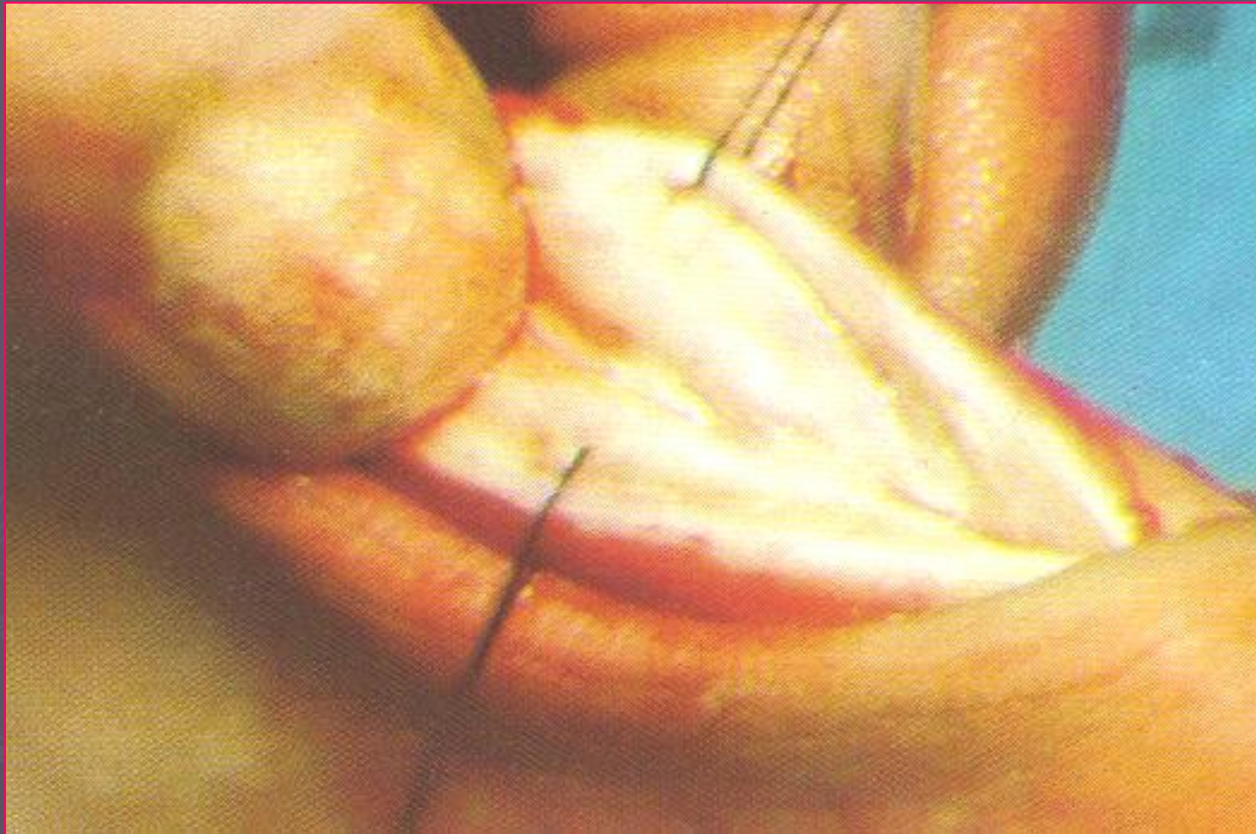
## Partial tendon rupture



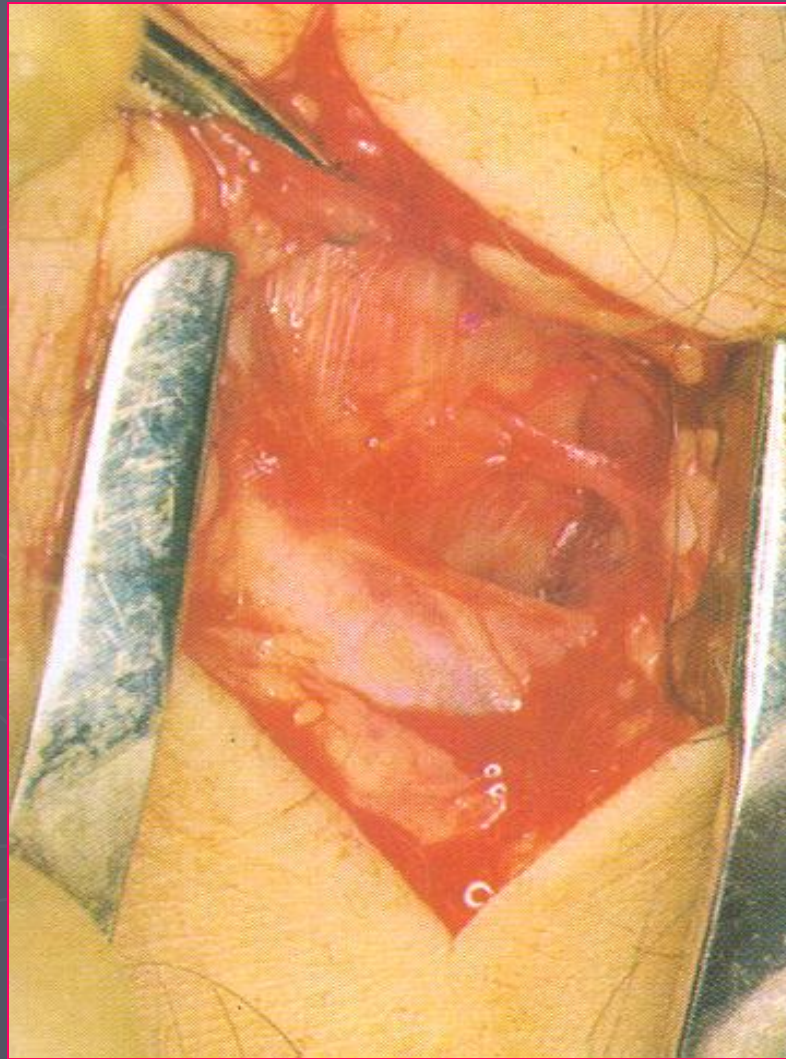
## Focal degeneration with calcification (tibial posterior tendon)



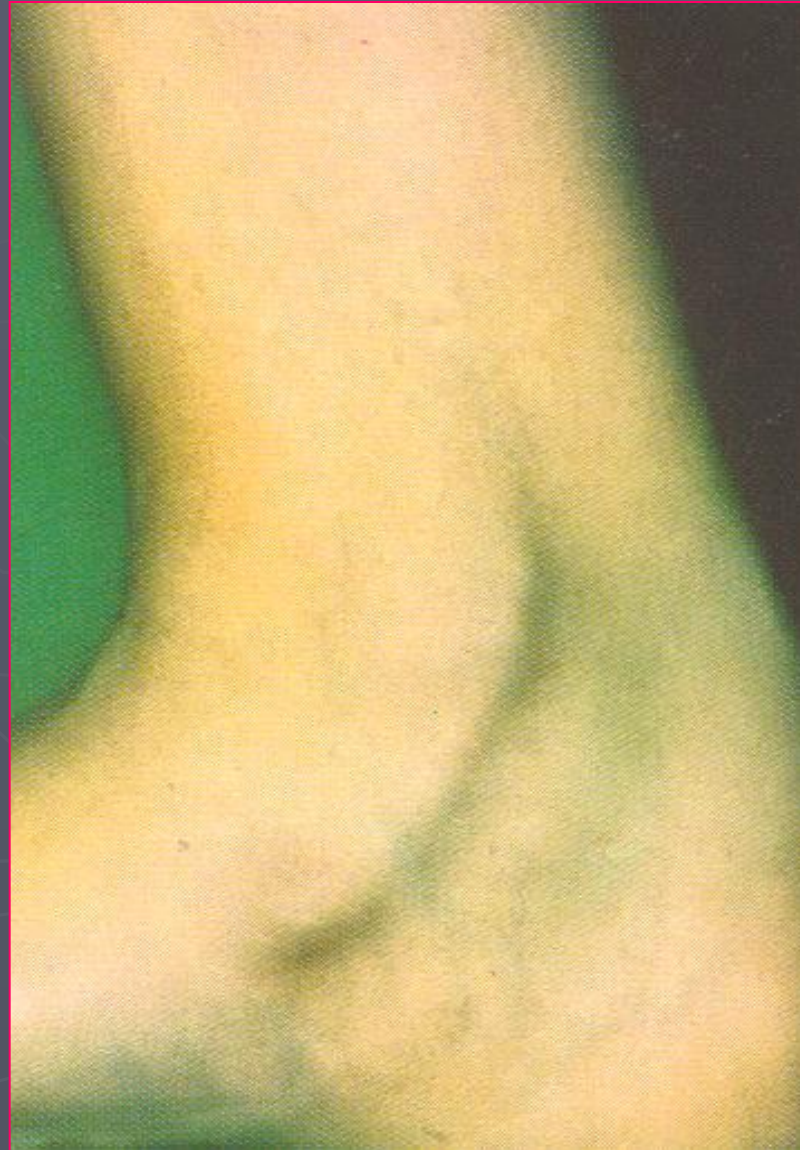
# Tendonitis



## Peritendonitis (patellar tendon)



## Tendovaginitis (tibialis posterior)





# JOINT INJURY



# Joint Injury



Traumatic synovitis

# Differential diagnosis in joint effusion

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	<b>Synovial effusion</b>	<b>Haemarthrosis</b>
<b>Onset</b>	<b>Delayed</b> $\pm$ 12 hours	<b>Immediate</b>
<b>Tension</b>	<b>Usually slight</b>	<b>Considerable</b>
<b>Volume</b>	<b>Usually small</b> (50ml -)	<b>Large</b> (50ml +)
<b>Severity</b>	+ $\longrightarrow$ ++	+++ ++ $\longrightarrow$ ++

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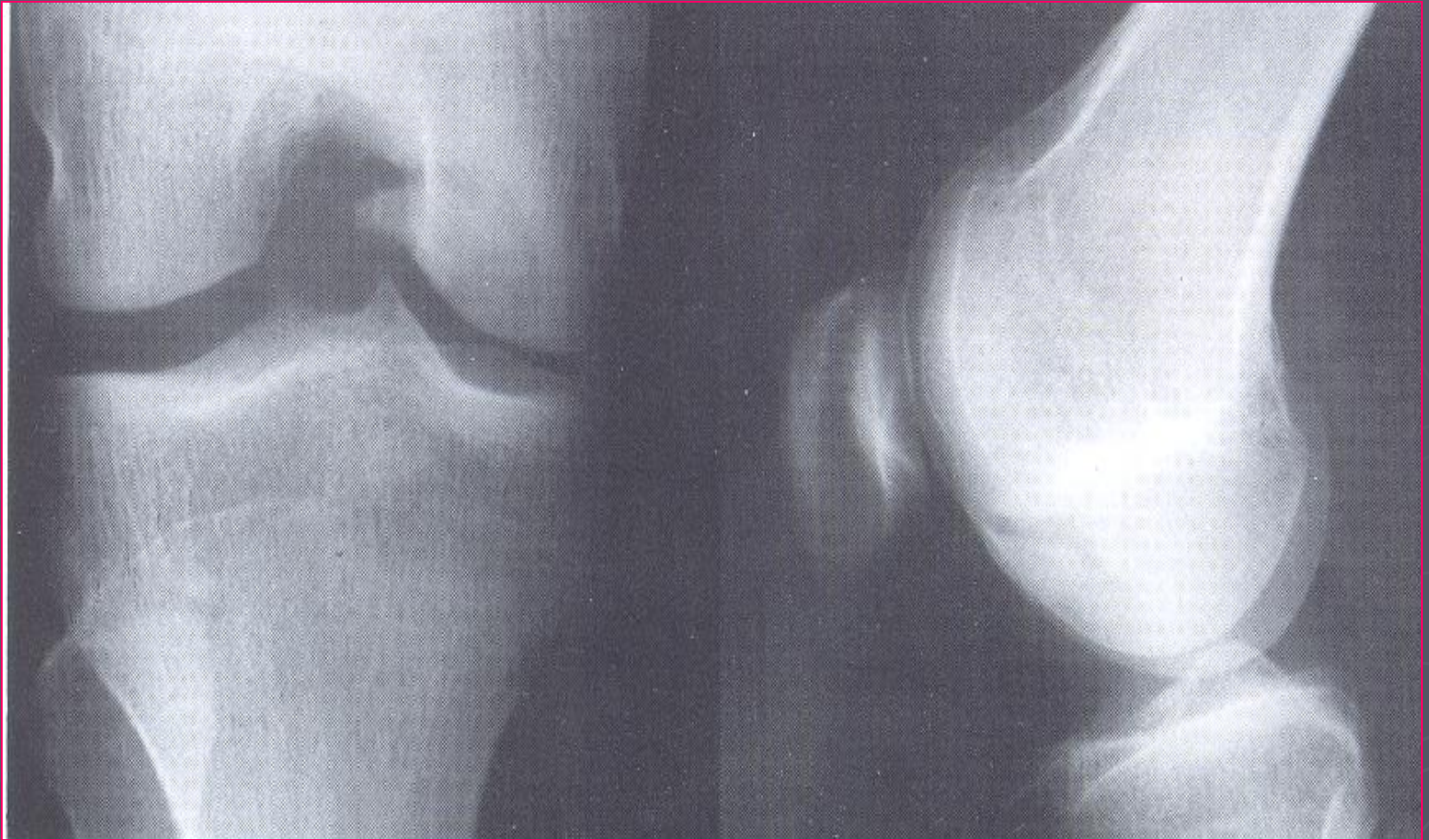
# Haemarthrosis

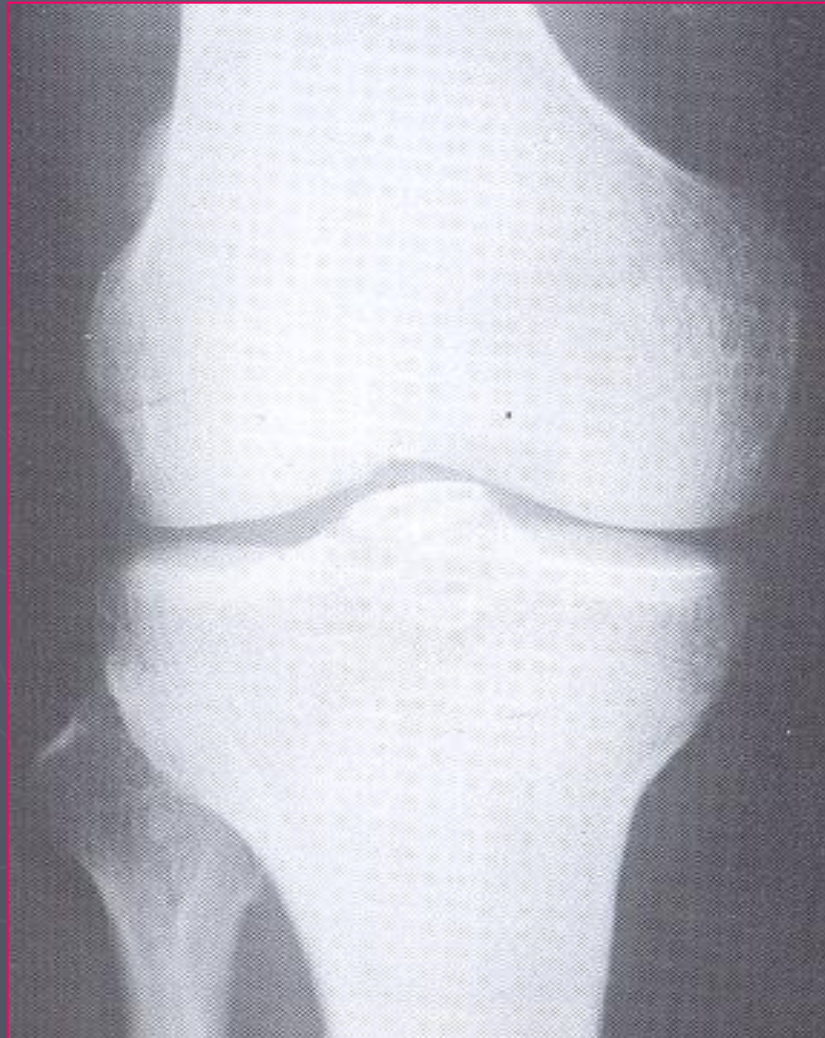




Ligament rupture

# Osteochondritis dissecans





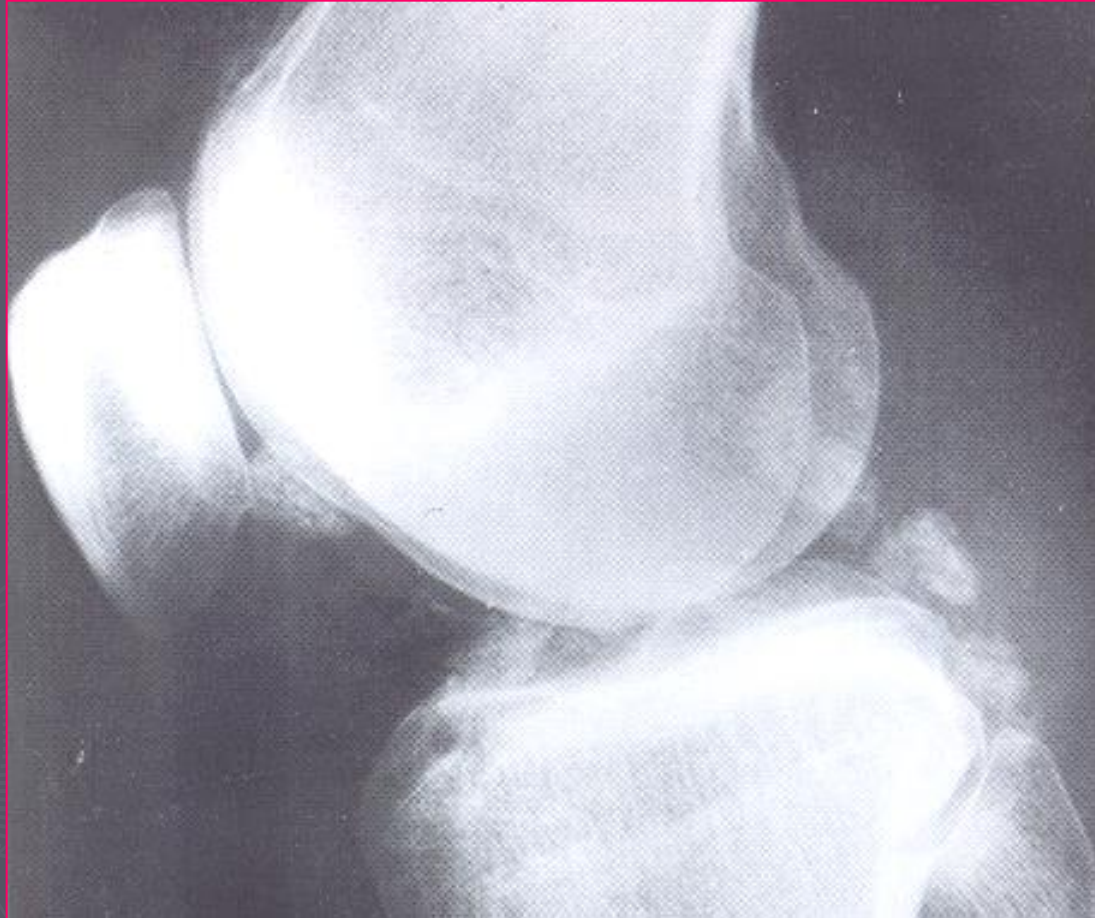
Radiograph of loose body



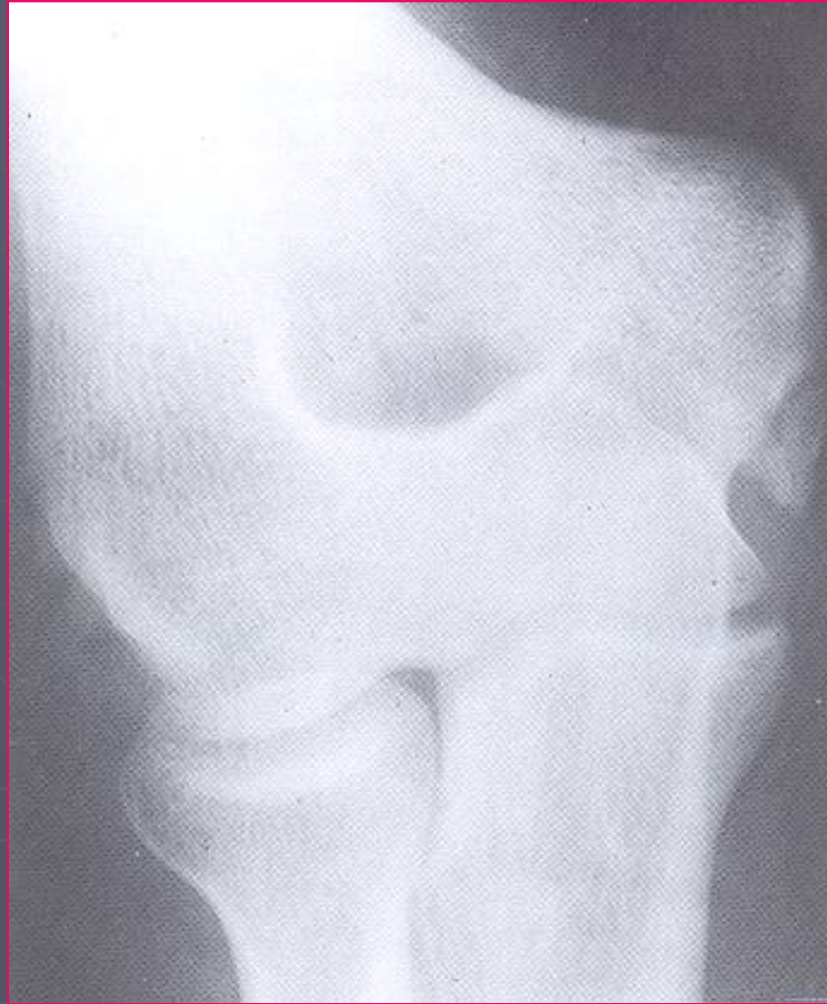
Loose body demonstrated at operation



# Osteochondromatosis



# Golfer's elbow



# Ectopic calcification



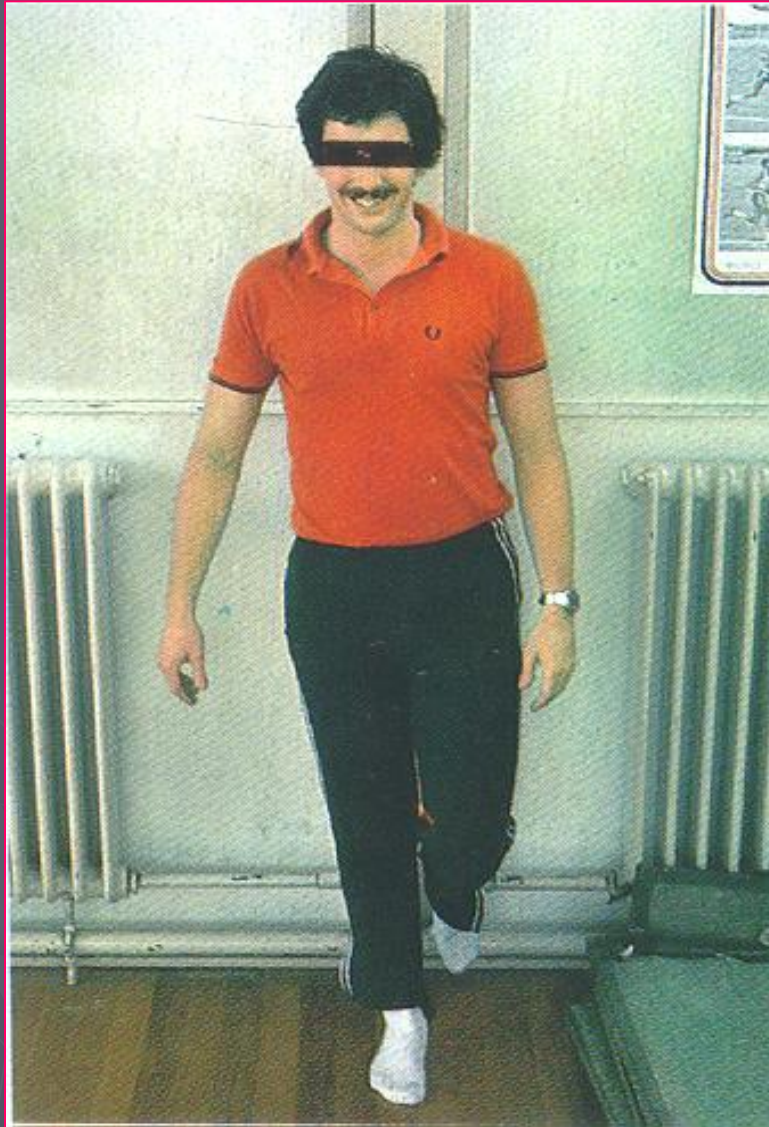
# LIGAMENT INJURY



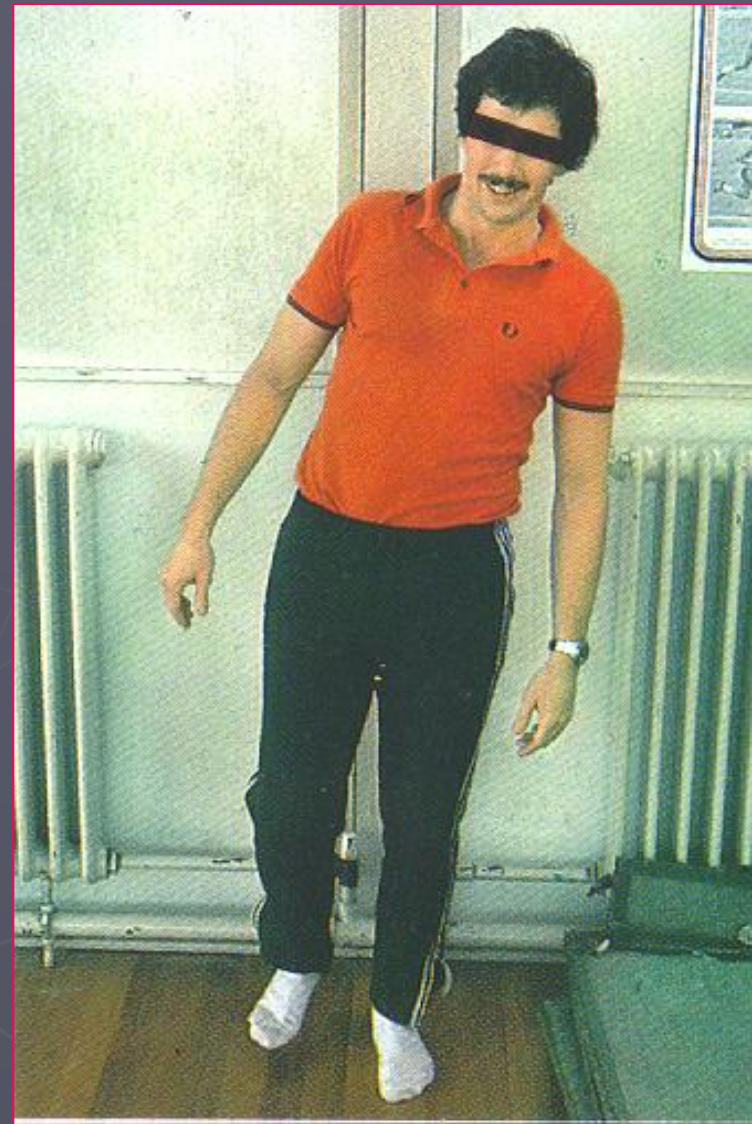
# Ligament injury



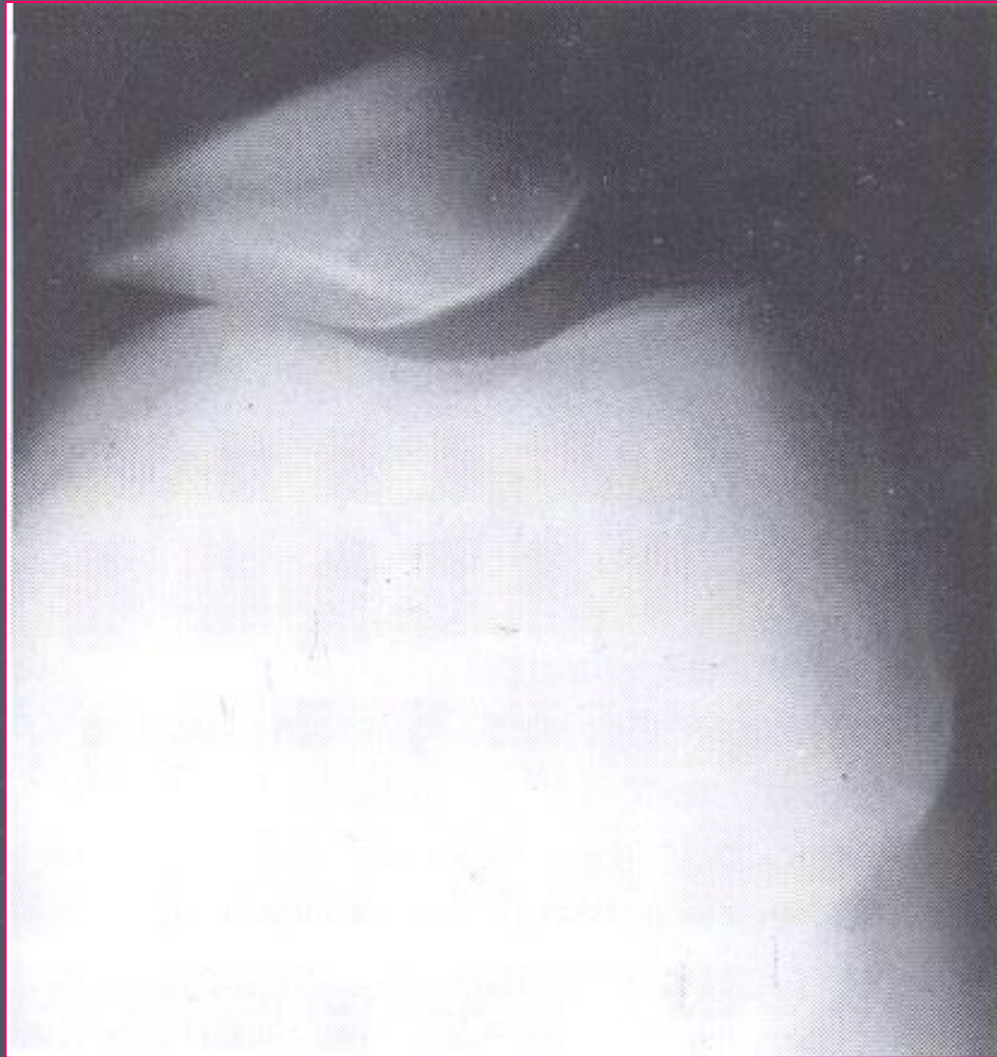
Sprain



Stable

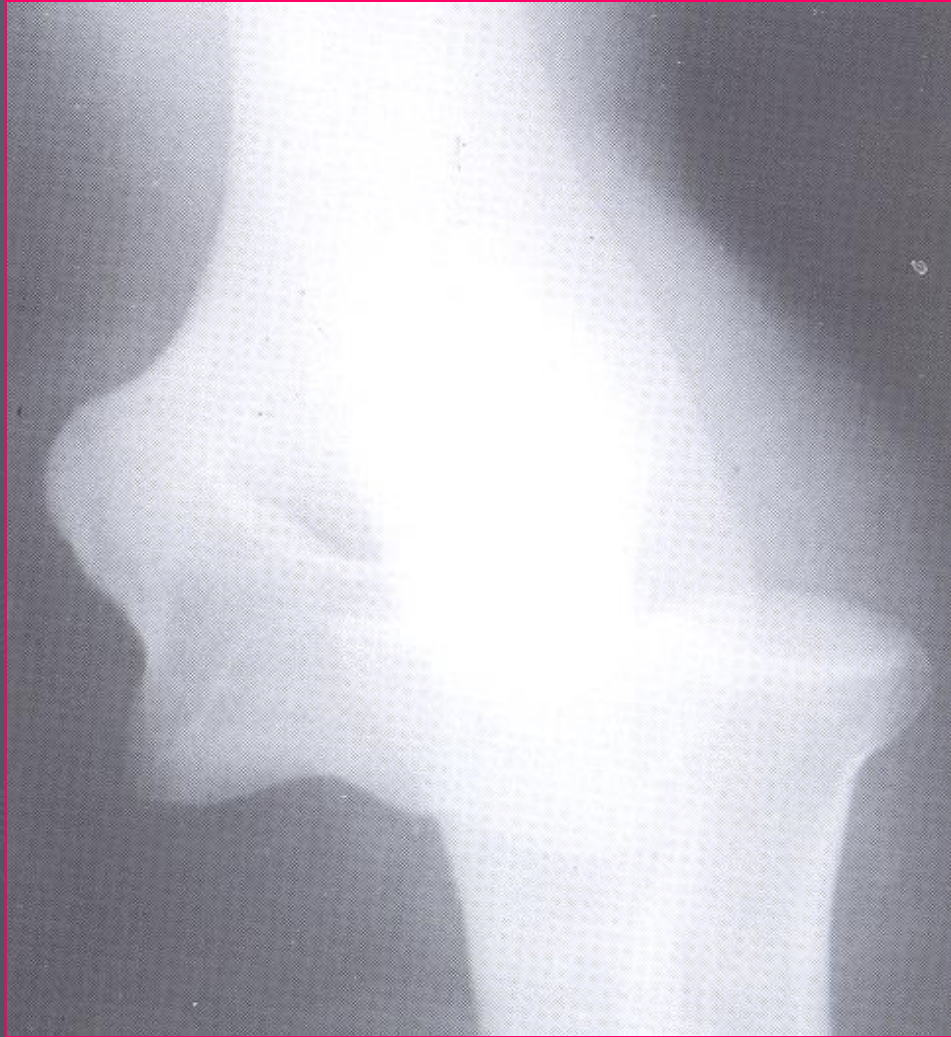


instability

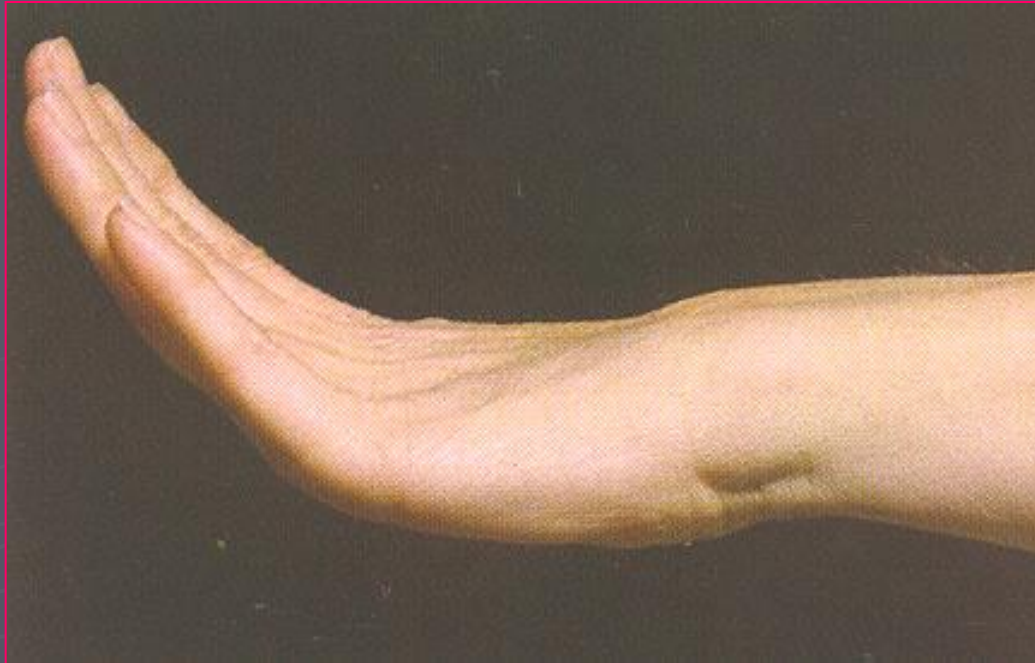


Subluxation

# Dislocation



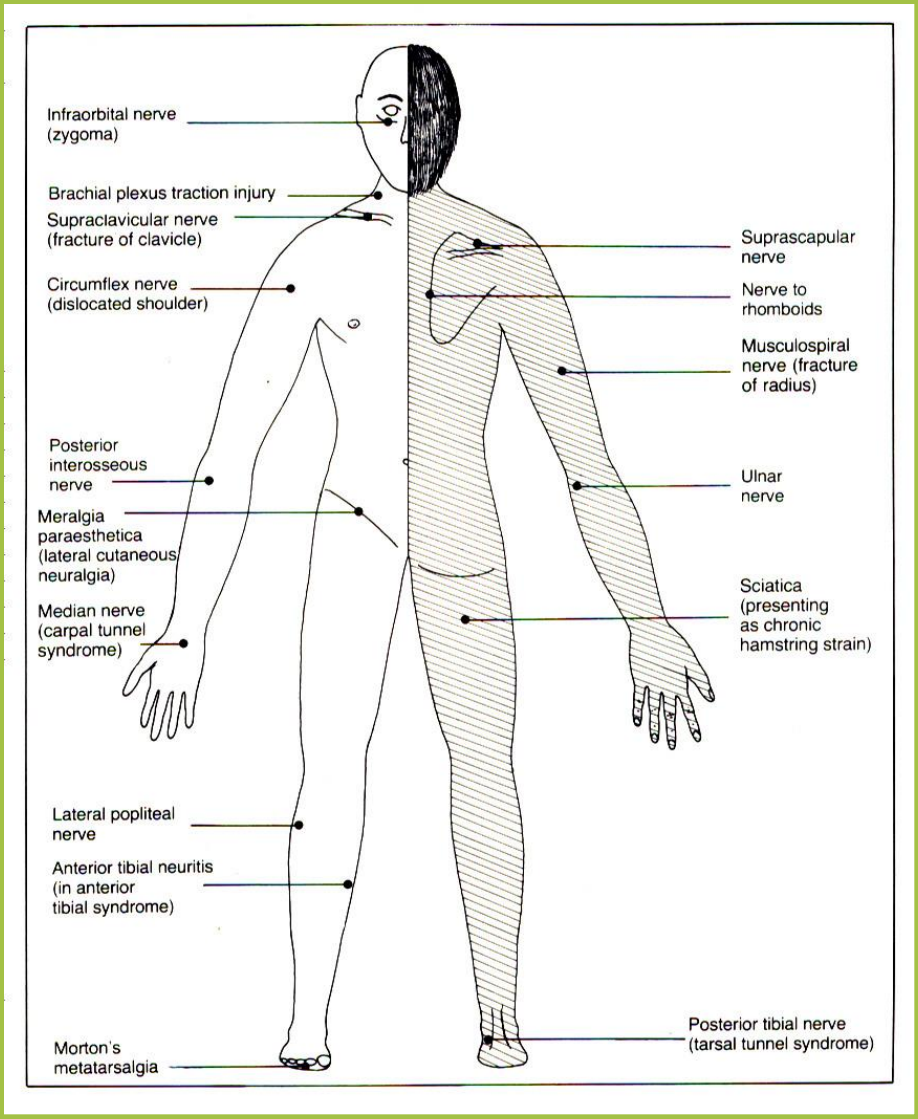




Hypermobility

# NERVE INJURY





# BONE INJURY



# Instantaneous fracture





**A football player breaks his leg**

**Fractured fibula**



# STRESS FRACTURE



## Stress fracture of tibia

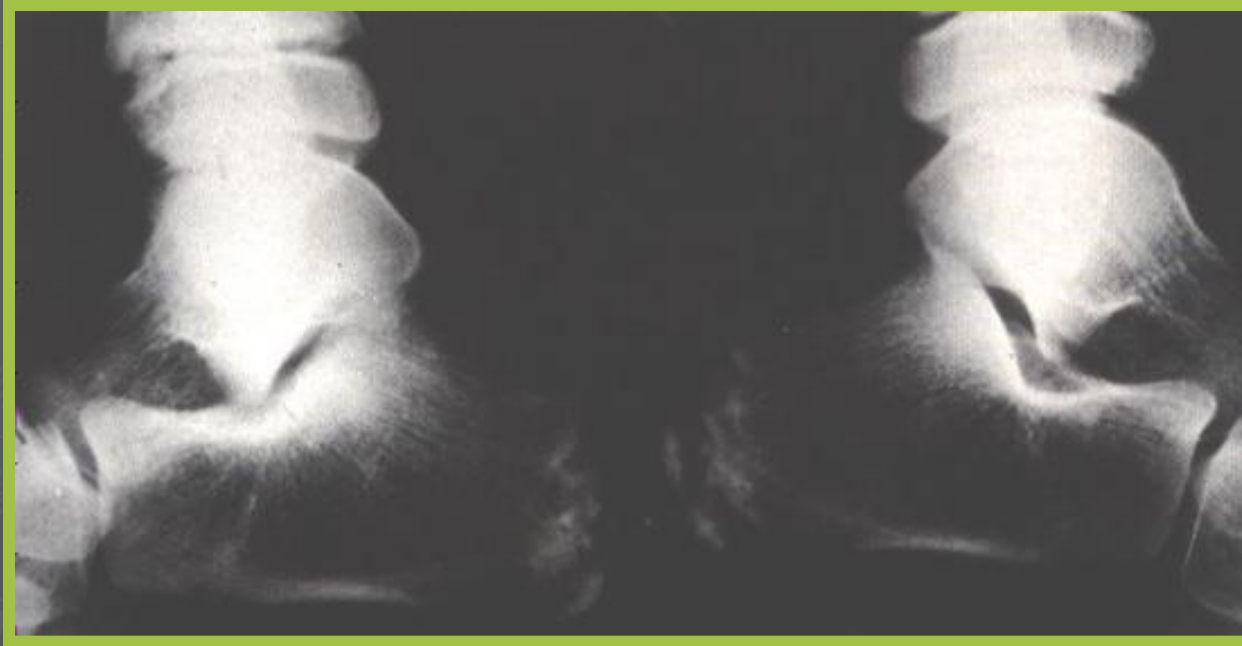




## Stress fracture of metatarsal



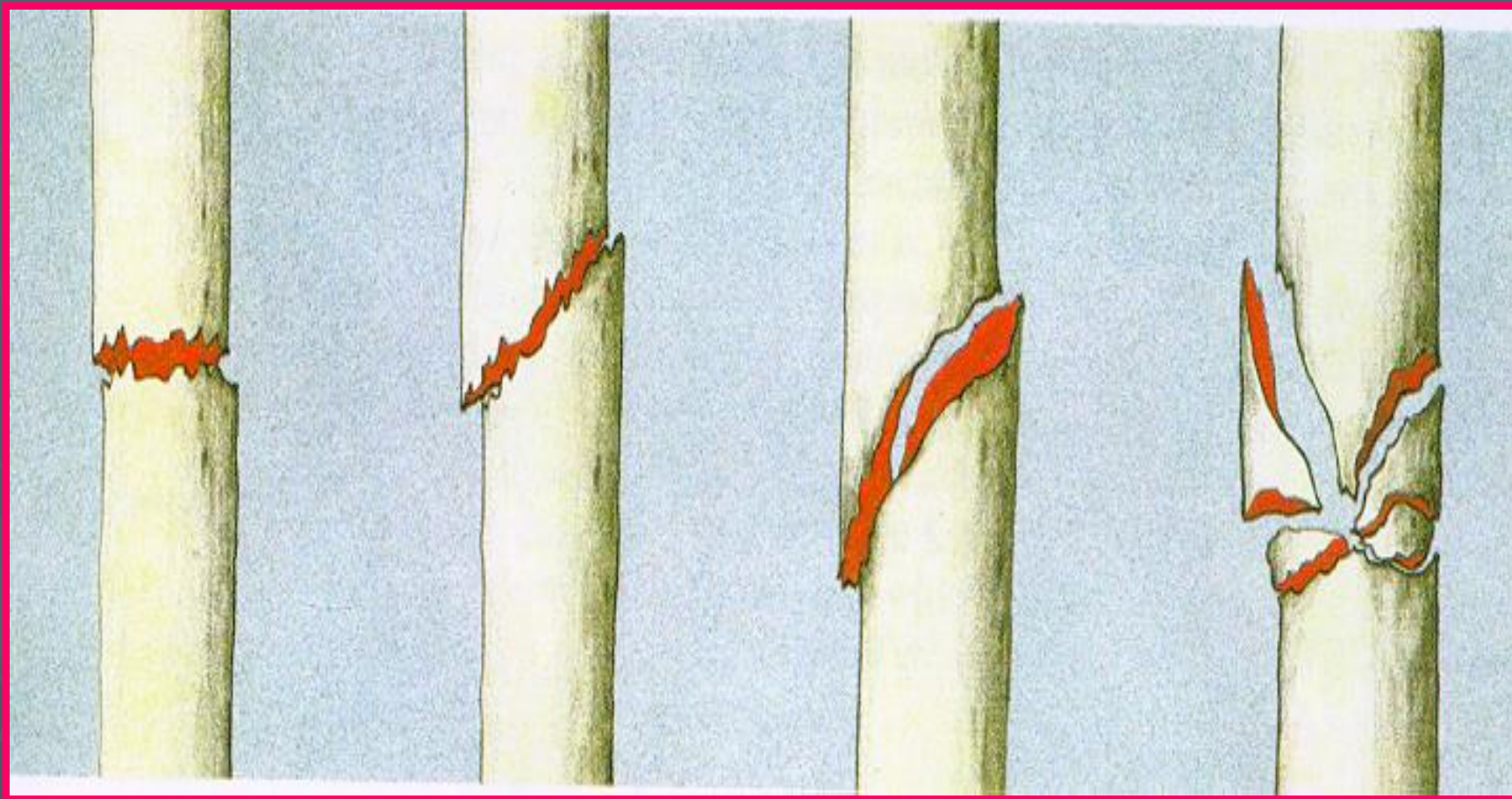
## Osteochondritis or epiphysitis



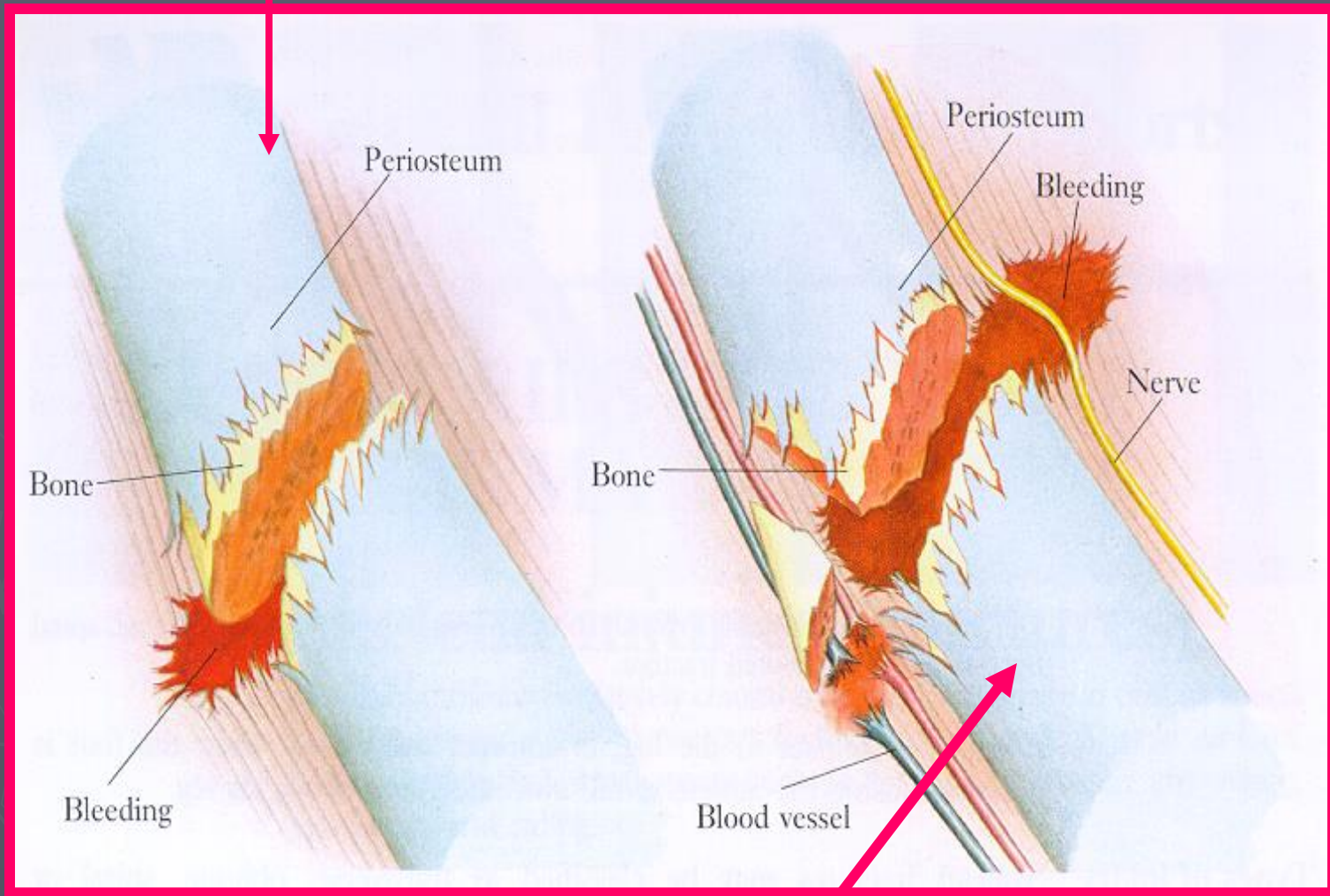
## Wedge fracture in osteoporosis



## Different type of fractures

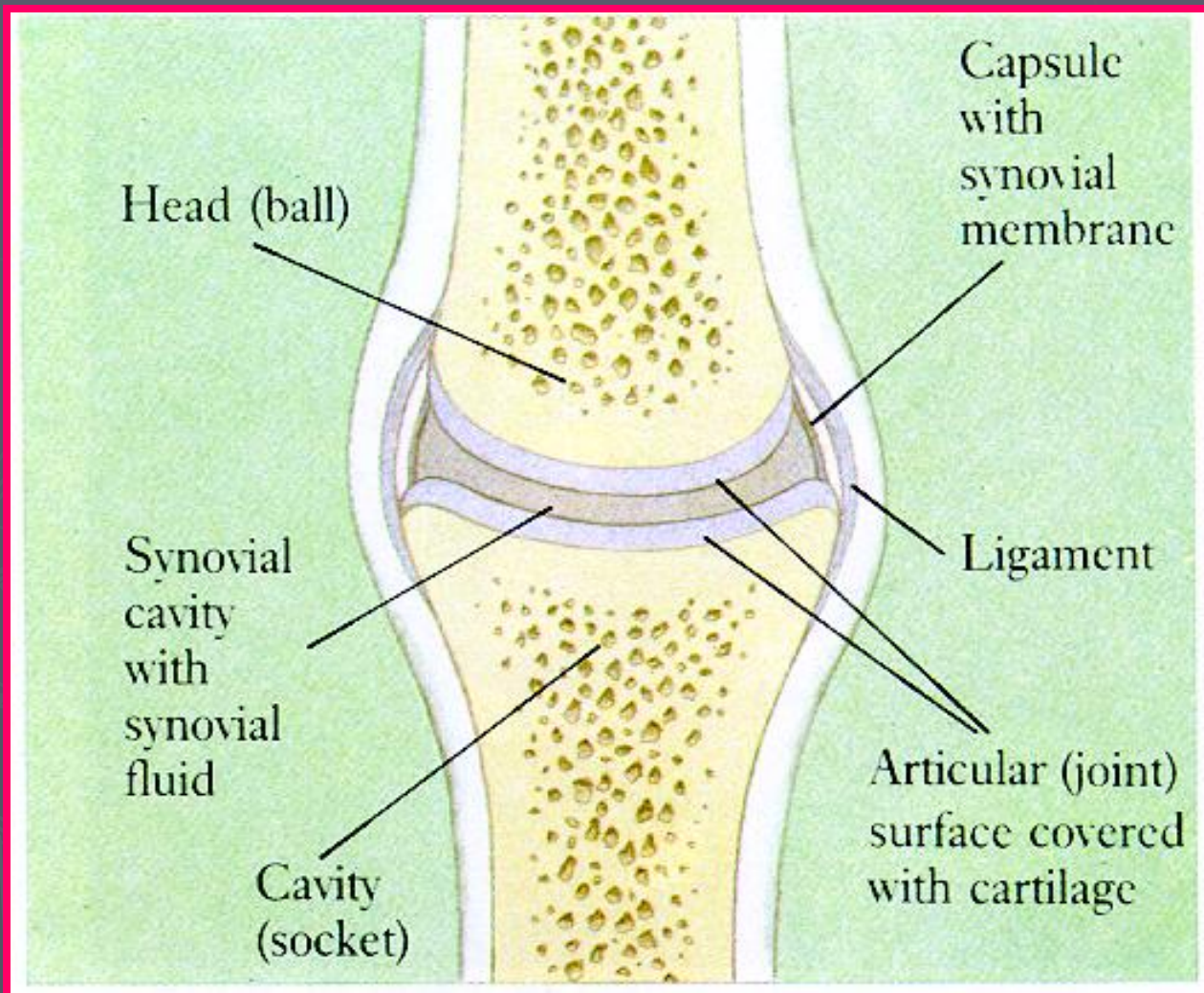


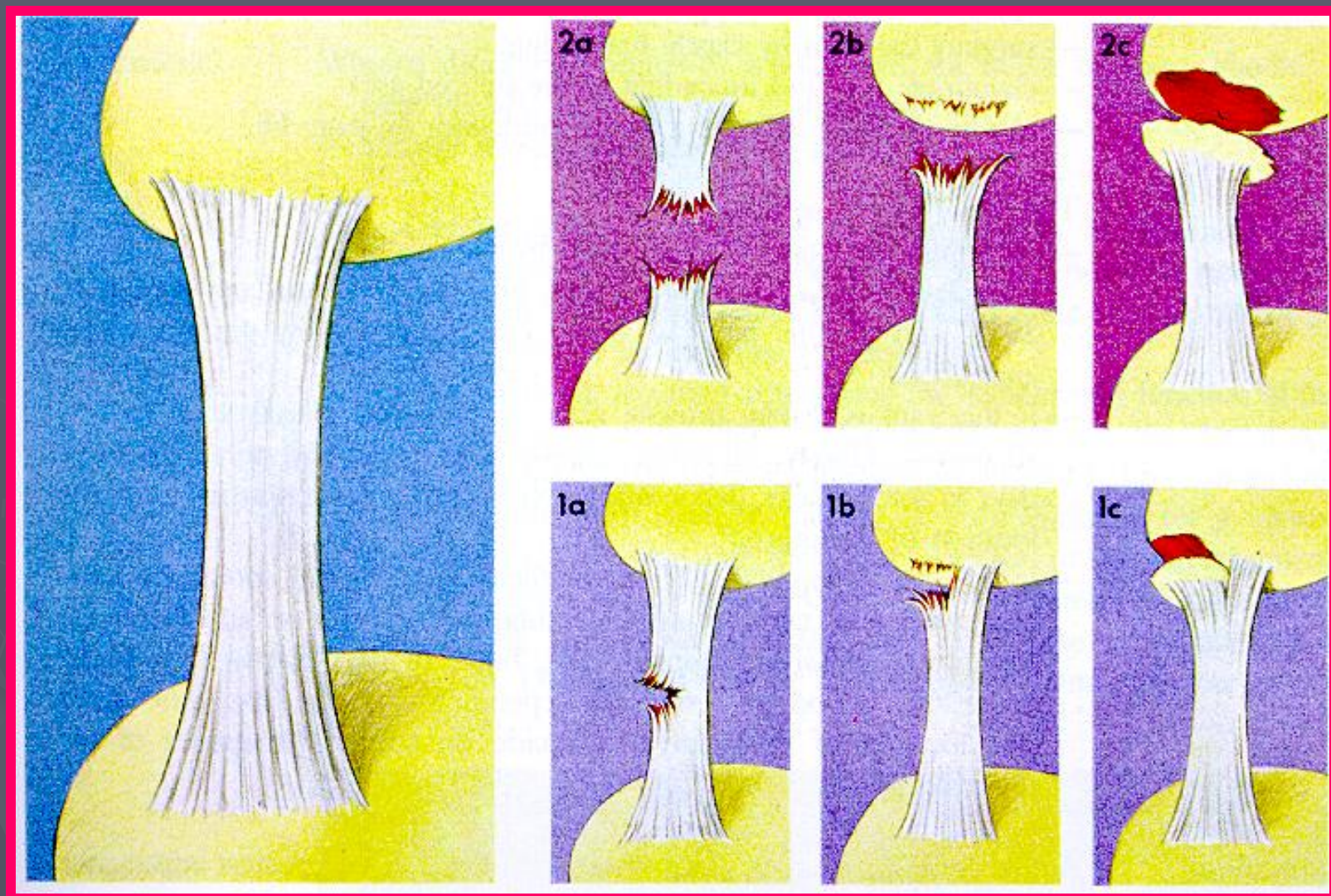
## Fracture with bleeding and rupture of the periosteum



Fracture with bleeding and rupture of the periosteum,  
Also affecting nerves and blood vessels

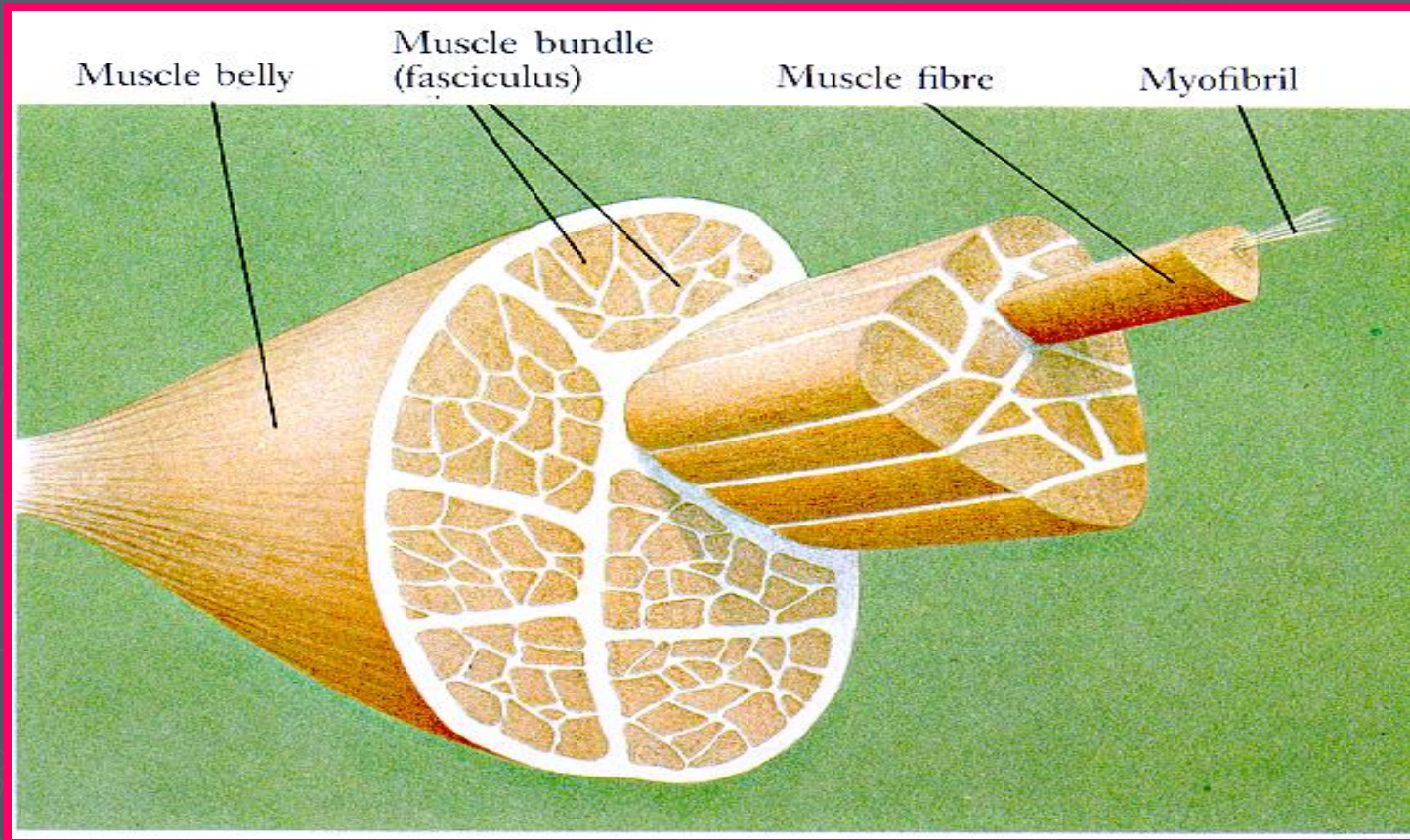
# Joint ligament injuries



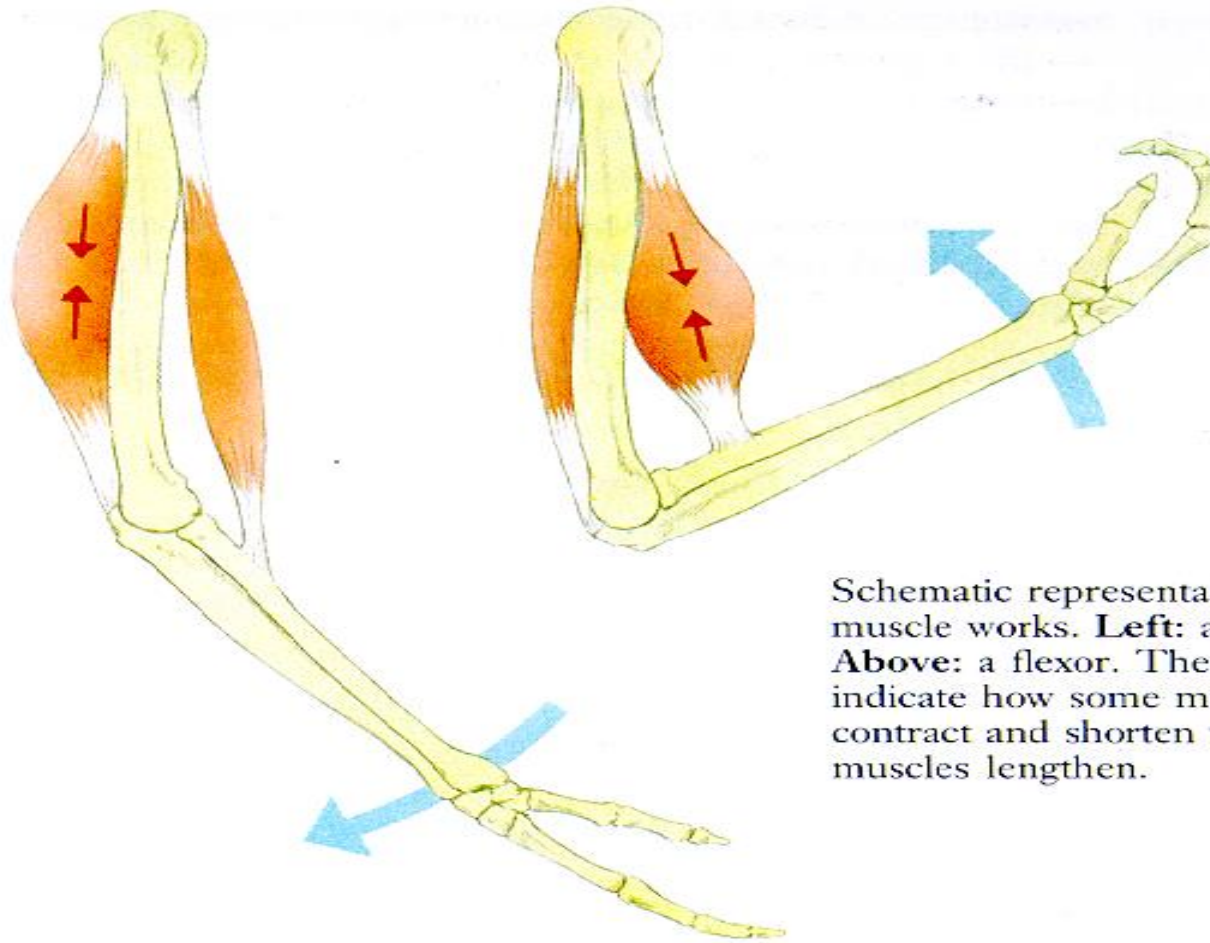


# Muscle injuries strains

## Muscle structure

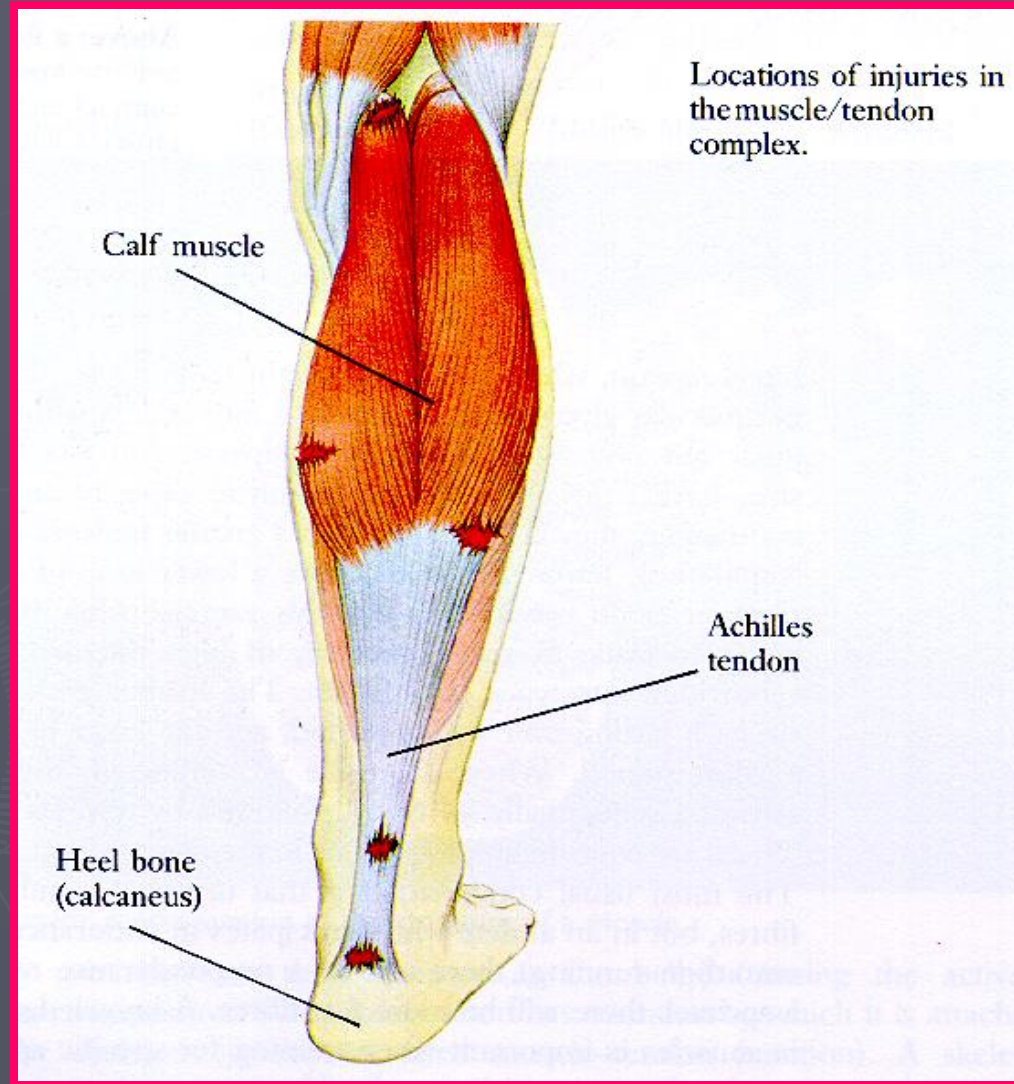




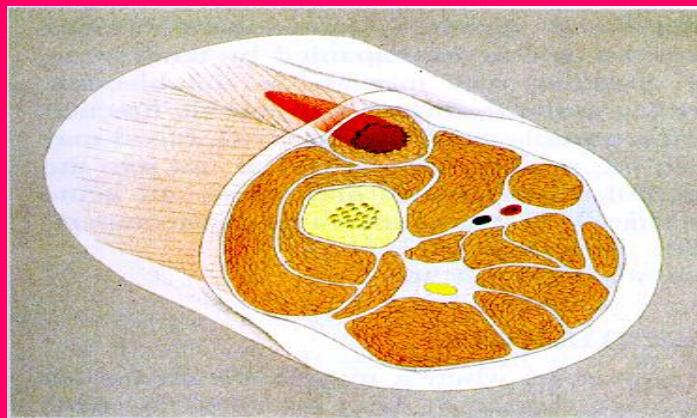


Schematic representation of how a muscle works. **Left:** an extensor  
**Above:** a flexor. The small arrows indicate how some muscles contract and shorten while other muscles lengthen.

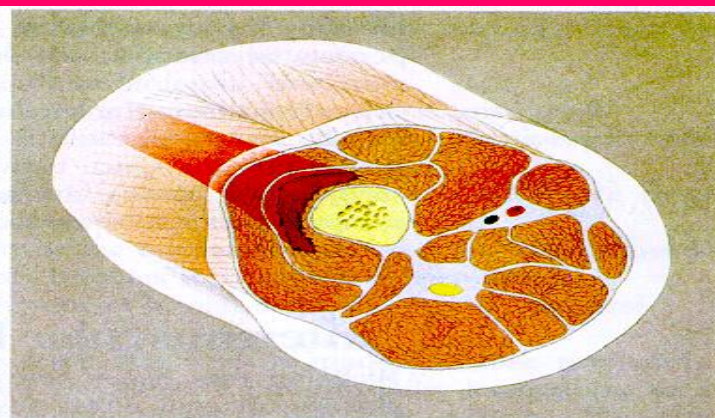
# Type of injury to the muscle-tendon complex



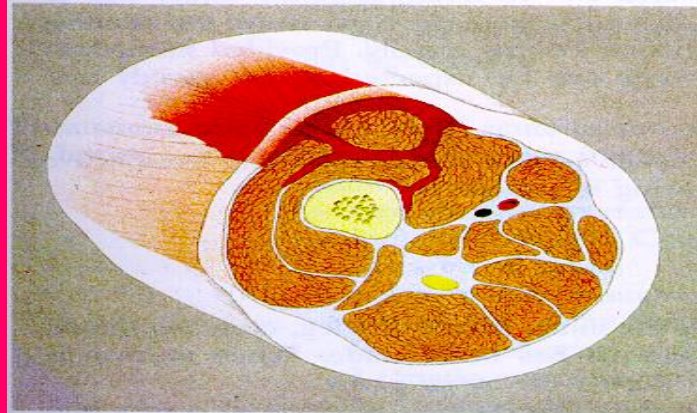
# Muscular haematoma



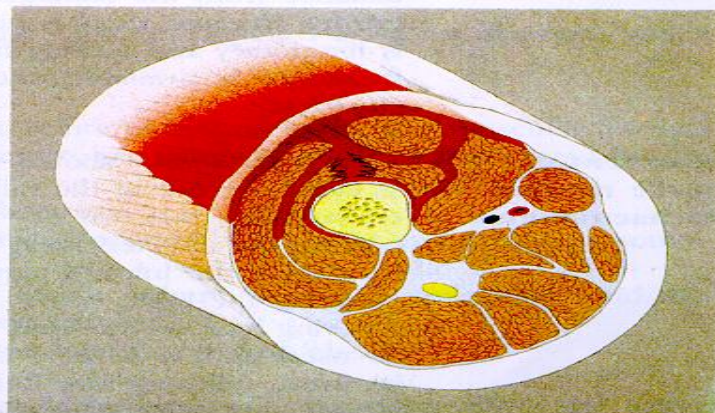
Example of a superficial intramuscular haematoma.



Example of a deep intramuscular haematoma.



Example of an intermuscular haematoma.



Example of a deep intramuscular haematoma with an intermuscular spread.

