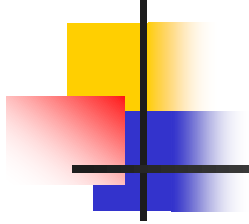


# Complications of Fractures:



**1-General complications:  
shock..etc**

**2-Local complications:**

**Early**

**Late**

# General complications



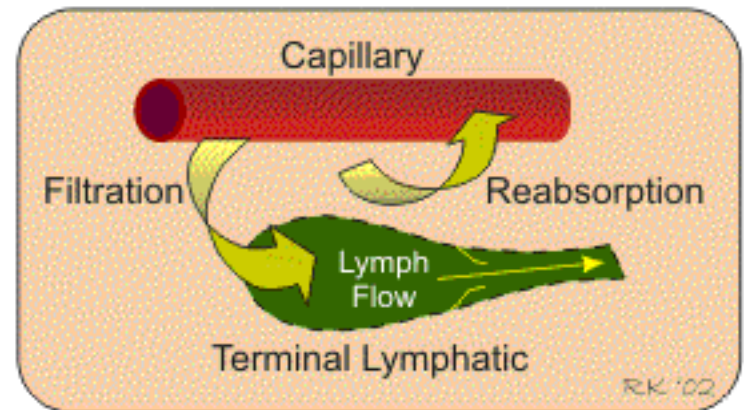
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- Shock; hemorrhagic, neurogenic or septic
- Crush syndrome: fracture— muscle damage— acid myoglobin release in the circulation— precipitate in renal tubules and vasoconstriction of renal arteries— renal tubular necrosis and failure
- DVT, PE and FPE
- Fat embolism
- Tetanus and gas gangrene
- ARDS

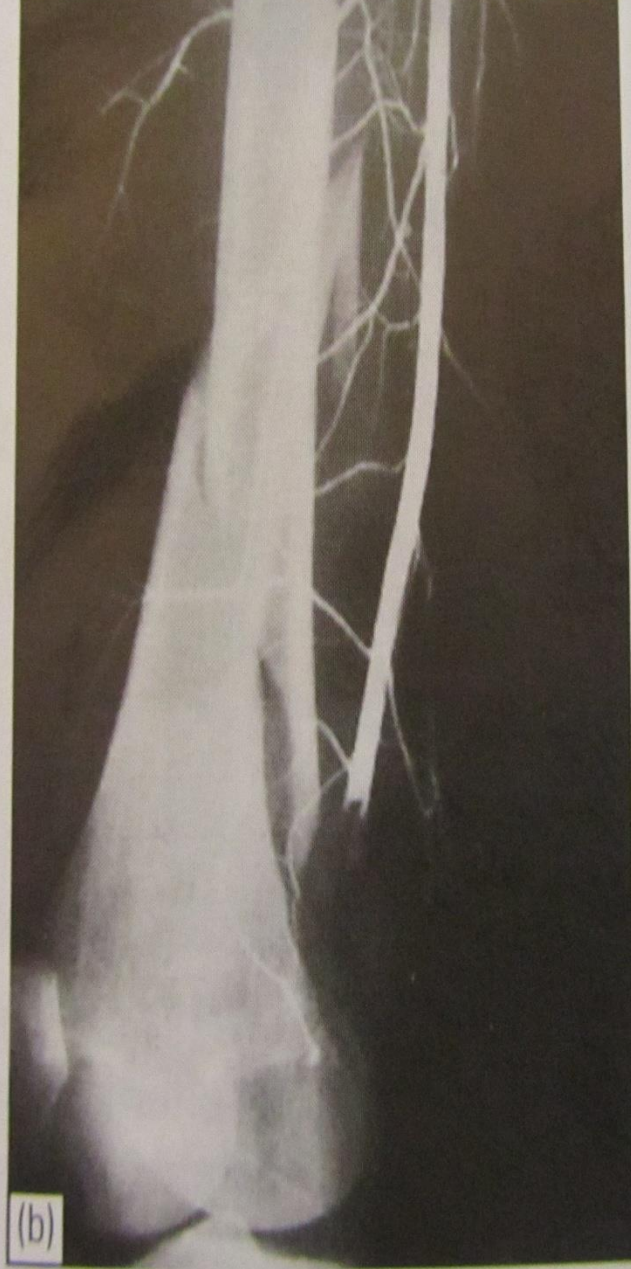
# Local complications

## • Early:

- Visceral injuries
- Vascular injuries
- Nerve injuries; neuropraxia, axonotomesis, neurotomesis
- Compartment syndrome
- Haemarthrosis
- infection



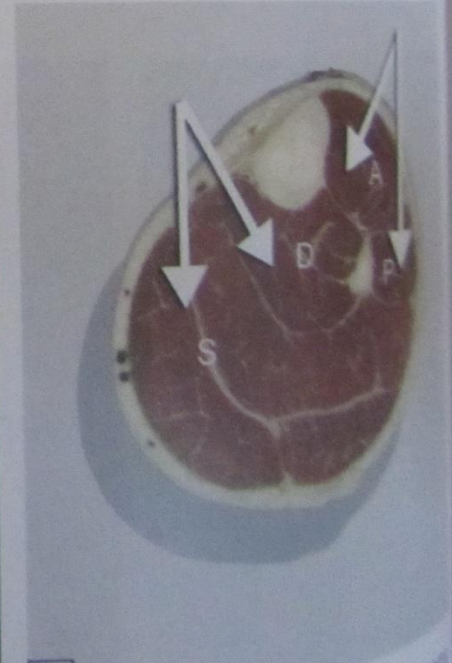
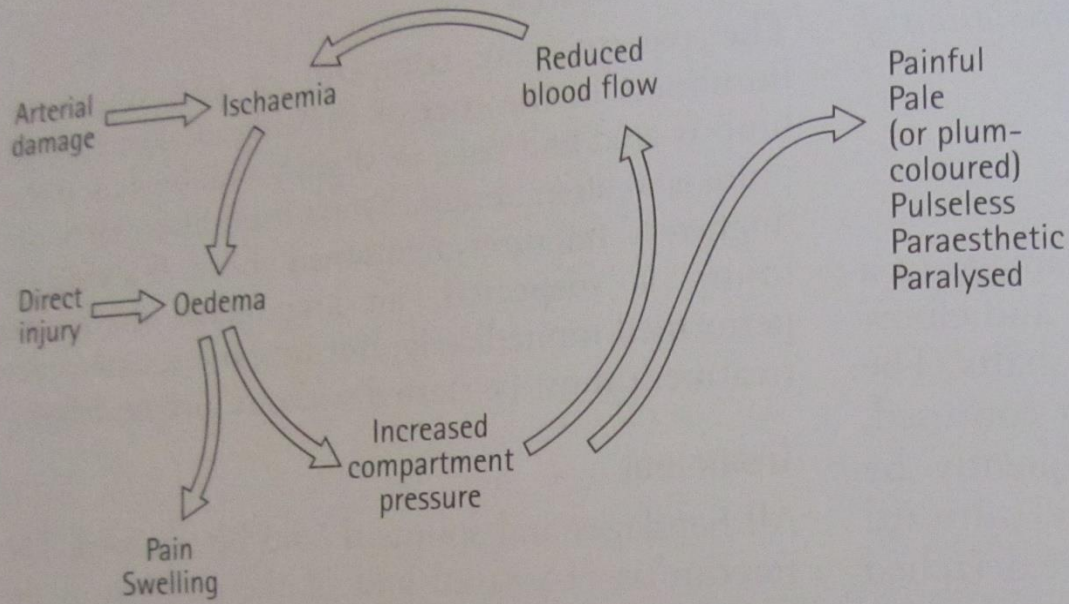
The interstitial volume (bounded area) depends on the rates of filtration, reabsorption, lymph flow, and the compliance of the interstitial compartment.



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**Case 1 Vascular**  
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interrupted  
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# Local complications



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- **Late:**

- **Delayed union,**

- **Causes**

1. **Inadequate blood supply**
2. **Severe soft-tissue damage**
3. **Periosteal stripping**
4. **Movement at fracture site**
5. **Imperfect splinting**
6. **Infection**

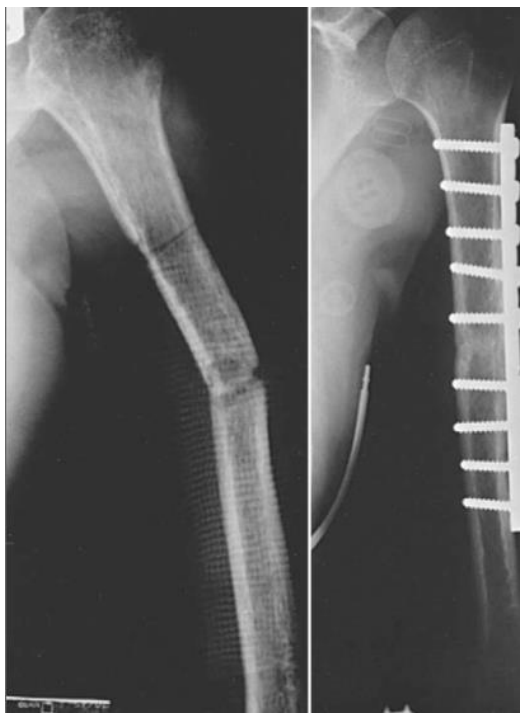
# Local complications



## **Non-union, either hypertrophic or atrophic**

### **CAUSES**

- 1. Excusive soft-tissue loss/damage**
- 2. Bone loss**
- 3. Intact fellow bone**
- 4. Soft-tissue interposition**
- 5. Poor blood supply**
- 6. Poor haematoma formation**
- 7. Infection**
- 8. Pathological fracture**
- 9. Poor splintage or fixation**
- 10. Impatience**
- 11. Patient- immense, immpatient, impossible, immovable**





# Local complications



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- **Malunion, either angulation, rotation or shortening**
- **Avascular necrosis— osteoarthritis— pain**
- **Growth disturbance**
- **Bed and cast sores**
- **Myositis ossificans, heterotrophic ossification**
- **Rupture of tendons**
- **Nerve compression by callus, or stretching by deformity**
- **Muscle contracture**
- **Joint instability from lig., bone or mm weakness**
- **Joint stiffness, extra-, peri-, or intra-articular cause**
- **Algodystrophy (complex regional pain syndrome) Sudeck's atrophy**
- **Osteoarthrosis – joint degeneration**

