

# Compartment Syndrome

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# Aims and Objectives

- What is compartment syndrome?
- Understand the anatomy involved
- Causes
- History and examination
- Investigations
- Treatments
- Complications



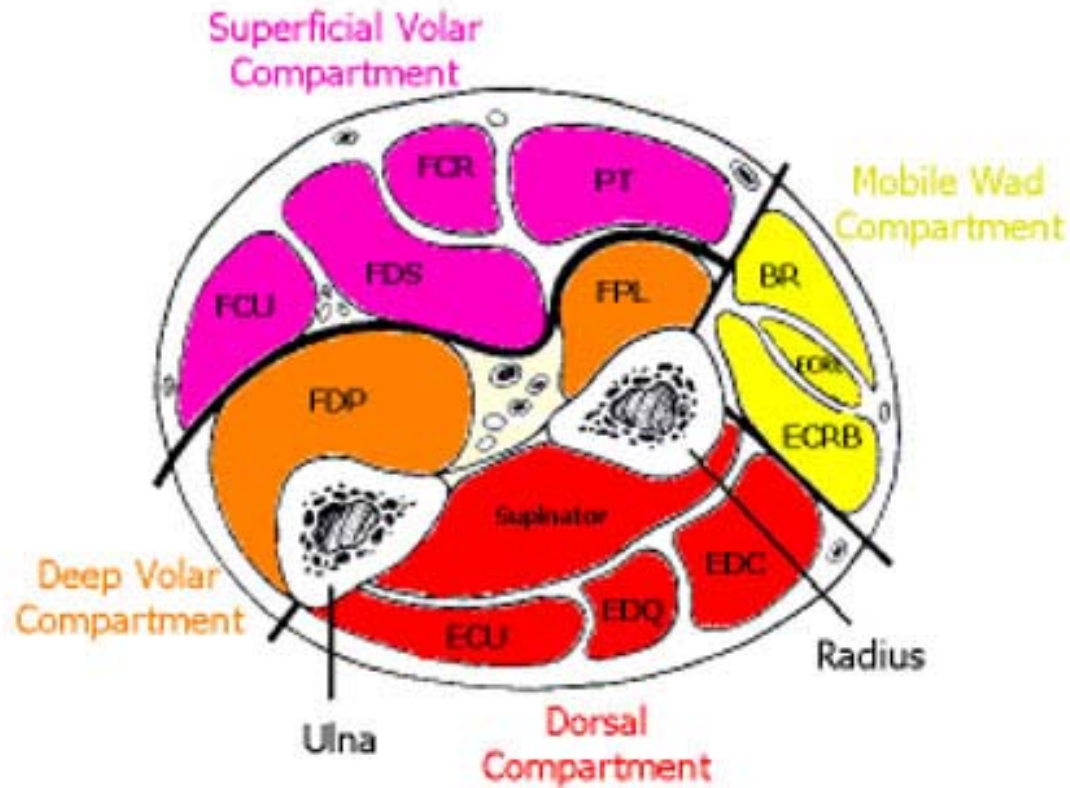
# What is Compartment Syndrome?

- Compression of nerves, blood vessels and muscle within a closed space
- Can lead to tissue death through ischaemia
- Commonly involve forearm and lower leg
- Divide into acute, subacute or chronic
- Life/limb threatening emergency

# Some anatomy...

- Fascia divides muscle groups into compartments
- Forearm contains 4 compartments:
  - superficial volar
  - deep volar
  - dorsal
  - mobile wad

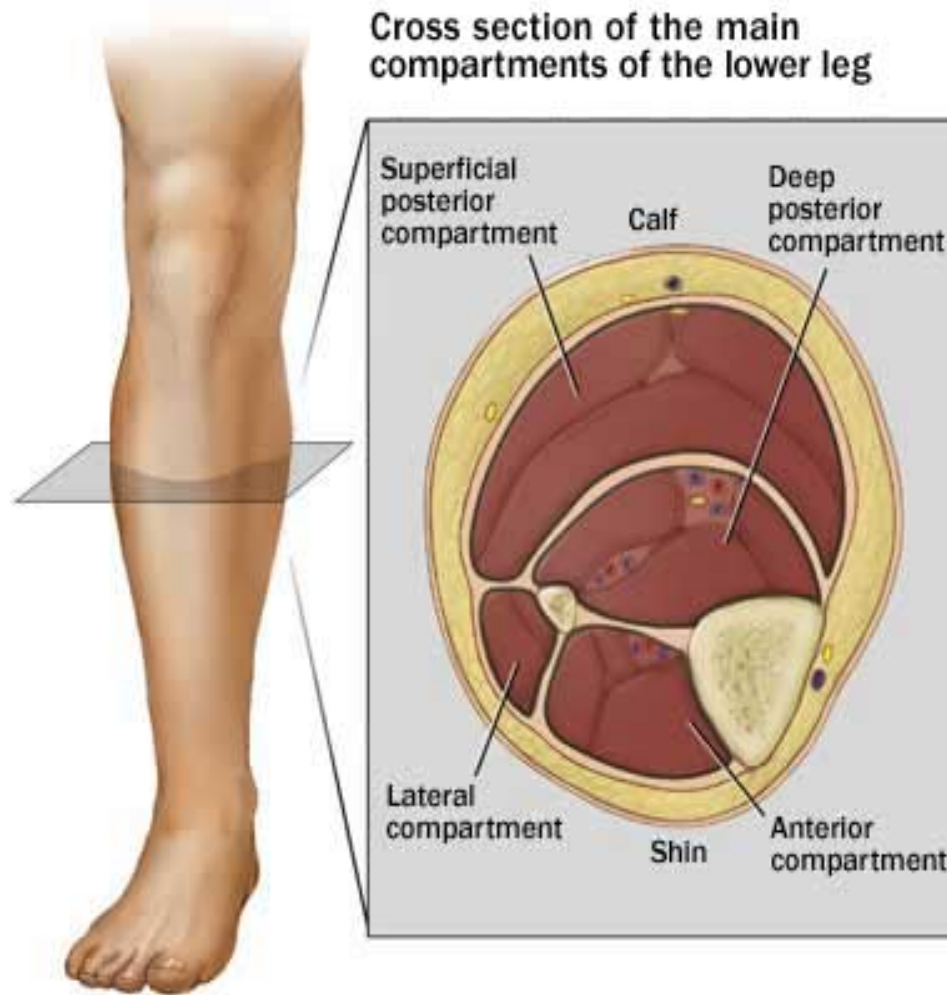
# Some more anatomy...



# Some more anatomy...

- Lower leg contains 4 compartments:
  - **Anterior** (tibialis anterior, extensor hallucis longus, extensor digitorum)
  - **Lateral** (peroneus longus, peroneus brevis)
  - **Deep posterior** (tibialis posterior, flexor digitorum longus, flexor hallucis longus)
  - **Posterior** (gastrocnemius, soleus)

# Some more anatomy...





# Causes of Compartment Syndrome

- Fractures
- Haemorrhage
- Crush injuries
- Casts
- Limb compression
- Burns



# History and Examination

- Remember 5 P's!
  - **Pain**
  - **Paraesthesia**
  - **Pallor**
  - **Paralysis**
  - **Pulselessness**

# Passive dorsiflexion of the foot





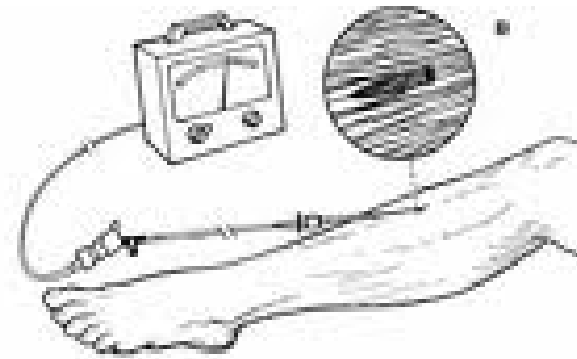
# History and Examination

- Remember 5 P's!
  - **Pain**
  - **Paraesthesia**
  - **Pallor**
  - **Paralysis**
  - **Pulselessness**

# Investigations

- Often diagnosed on history alone
- Measurement of intracompartmental pressures
  - normal resting pressures 0 - 10 mmHg
  - if >30 mmHg, treat as CS
- Measure BP: if diastolic BP - intracompartmental pressure > 30 EMERGENCY!

# Intracompartmental Pressure Measurement



# Investigations

- Often diagnosed on history alone
- Measurement of intracompartmental pressures
  - normal resting pressures 0 - 10 mmHg
  - if >30 mmHg, treat as CS
- Measure BP: if diastolic BP - intracompartmental pressure > 30 EMERGENCY!

# Treatments

- Conservative: elevate, remove all bandages, split cast (if not already split)
- Operative: fasciotomy





# Complications

- Necrosis of tissue
  - amputation
  - contractures, eg Volkmann's
  - rhabdomyolysis

# Volkmann's Contracture





# Complications

- Necrosis of tissue
  - amputation
  - contractures, eg Volkmann's
  - rhabdomyolysis



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- What is compartment syndrome?
- Understand the anatomy relating to CS
- Causes of CS
- History and examination
- Investigations
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Thank you!

Any questions?