Compartment syndrome

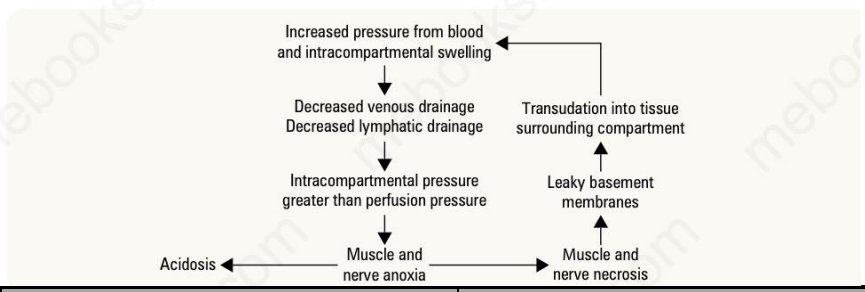
Definition

- **Acute compartment syndrome is a potentially devastating condition in which the pressure within an osseofascial compartment rises to a level that decreases the perfusion gradient across tissue capillary beds, leading to cellular anoxia, muscle ischemia, and death**
- **One of red flags**

types

Acute compartment syndrome	Chronic compartment syndrome
⇒ Most common cause by fractures	⇒ Repetitive muscle use during vigorous exercise

Pathophysiology



Etiology

Increase the Compartment Volume	Reduction in Volume of Tissue Compartments
● Close soft tissue injury/ crush injury ● Close fracture ● Open fracture ● Hemorrhage: ● Vascular injury ● Coagulopathy (anticoagulation therapy) ● Increased capillary permeability after burns (especially circumferential) ● Infusions or high-pressure injections (eg, regional blocks, paint guns) Reperfusion after prolonged periods of ischemia	● Tight circumferential dressings (eg, can occur with cotton cast padding alone) ● Cast or splint ● Prolonged limb compression, as in Trendelenburg and lateral decubitus or from alcohol or drug abuse Risk factors (general): ● Head injury ● Decreased conciseness (Late diagnosis) Hypotension

Clinical features

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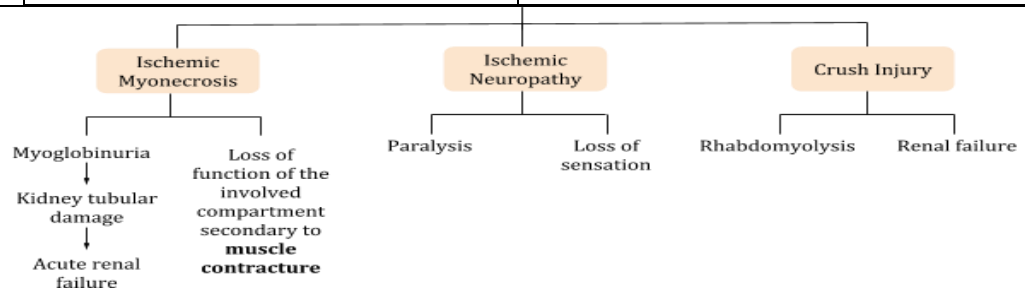
early presentation and most sanative	late signs:
➢ Pain out of proportion to the injury Exacerbated by movement not relived By analgesic ➢ Pain with passive stretching of the Muscles in the compartment	➢ 4Ps: ⇒ Paralysis ⇒ Paresthesia ⇒ Pallor ⇒ Pulsessness Pulseness usually not common very high Pressure to cause it. ➢ Tight (woody compartment) tense ➢ Tender compartment ➢ Reduced two point discrimination *In pediatrics:* ➢ 3As:

		⇒ Anxity ⇒ Agitation ⇒ Increase Analgesic requirement
Diagnosis	➢ Usually we do not need investigations BC it is <u>clinical diagnosis</u> ➢ Intramuscular pressure (IMP) measurement Needed for comatose or otherwise non evaluable patient : ⇒ Aesthesia and sedated ⇒ Head injury ⇒ Intoxicated ⇒ Pediatric patients	
treatment	**Non operative**	**Operative**
	Remove constrictive dressing (cast, Splint) +elevate limb at level of heart	1-Urgent fasciotomy **inductions** • Absolute Compartment pressure >30 mmHg or <30 mm Hg difference from diastolic pressure. • 6 hours of total ischemia time (ex: arterial embolism) • Significant tissue injury. • Worsening initial clinical picture. • Delayed presentation with a picture of developed compartment syndrome. ⇒ 48 -72 h post-operative: Wound closure +necrotic tissue Debridement 2-Escharotomy : Burn 3-limp amputation: Sever tissue necrosis
Complications		

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