

## Crush syndrome

Crush injuries are a further variant of blunt injury and are often accompanied by degloving and compartment syndrome. Injury to tissues within a closed fascial compartment leads to bleeding, exudate and swelling of these tissues, and increased interstitial pressure. As the interstitial pressure rises above capillary perfusion pressure the blood supply to the viable tissues is reduced, resulting in further ischaemic tissue injury and swelling. This cycle causes a worsening **compartment syndrome** with muscle ischaemia and nerve ischaemia progressing to muscle necrosis, skin necrosis and limb loss. Muscle necrosis may result in renal failure (Release of globulins). This process can be arrested by early recognition and decompression of the affected compartment(s) by fasciotomy.

**The most reliable clinical sign of compartment syndrome** is pain worsened by passive stretching of affected muscles. Where any doubt exists compartment pressure measurements can be carried out. Loss of peripheral pulses is not a sign of compartment syndrome, but indicates major vessel damage. Where compartment syndrome is suspected or confirmed fasciotomy is advised. Longitudinal incisions are made in the deep fascia and it may also be necessary to make extensive longitudinal releases in the skin. It is important to release the fascia over each individual compartment in a limb.

Signs of compartment syndrome

- ❖ Pain
- ❖ Pallor
- ❖ Parasthesia
- ❖ Paralysis
- ❖ Pulslessness

**Lines of management are:**

- + Release pressure within the compartment by fasciotomy
- + IV fluids until good hydration
- + Diuretics to encourage diuresis
- + Mannitol also to encourage diuresis
- + Sodium bicarbonate to alkalinize the urine protecting against renal failure
- + O<sub>2</sub>
- + Foley catheter to measure the urine output