

South East of Scotland Major Trauma Centre Training and Education



Musculoskeletal Trauma - Management

Recognized injuries include:

- ✓ Major soft tissue injuries
- ✓ Compound fractures
- ✓ Vascular limb injuries
- ✓ Compartment syndrome
- ✓ Neurological injuries
- ✓ Joint dislocations

Complications from soft tissue and bony injuries can lead to functional, cosmetic and psychological problems including chronic pain, numbness, limb stiffness and weakness, leading to difficulties with mobility, rehabilitation, work and recreation.

Management plan should be initiated during secondary survey.

Clinical examination (secondary survey):

Soft tissue and bony injuries can be easily missed, in particular in a patient with reduced GCS.

Exposing and performing a thorough examination on the patient can reduce errors.



LOOK – compare limbs, check for swelling, deformity, wounds and symmetry



FEEL – for swelling, skin temperature, peripheral pulses, sensation, crepitus and tenderness



MOVE – use active (if able) and passive movement to compare both sides

ANALGESIA should be provided at the earliest opportunity. Oral and IV analgesics are standard care - the use of nerve blocks may be indicated.

NON-PHARMACOLOGICAL methods include elevation of injured limb, immobilization and support using slings or traction, ice packs.

Image: Nerve Block

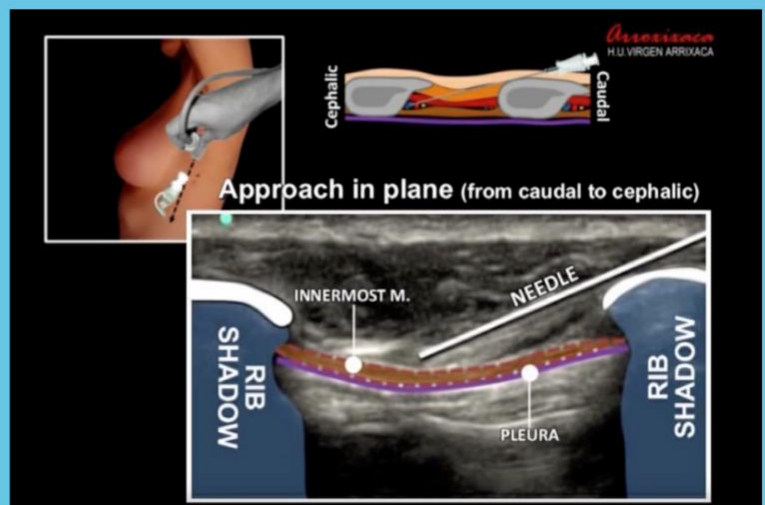


Image credit:
<https://painandpsa.org/rnb/>

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Management of MSK injury:

- Haemorrhage control
- Analgesia
- Reduction and alignment of fracture
- Immobilisation of limb
- Cleaning and application of an appropriate dressing of wound
- Antibiotics
- Anti-tetanus
- Specialist referral

Vascular Impairment:

Vascular damage may not be immediately apparent, so it is vital that the pulses distal to the injury are checked frequently to confirm presence of distal limb perfusion. Signs of vascular impairment are:

- Pain
- Pallor
- Perishing cold
- Pulselessness
- Parasthesia
- Paralysis

Image credit: medicinenet.com/

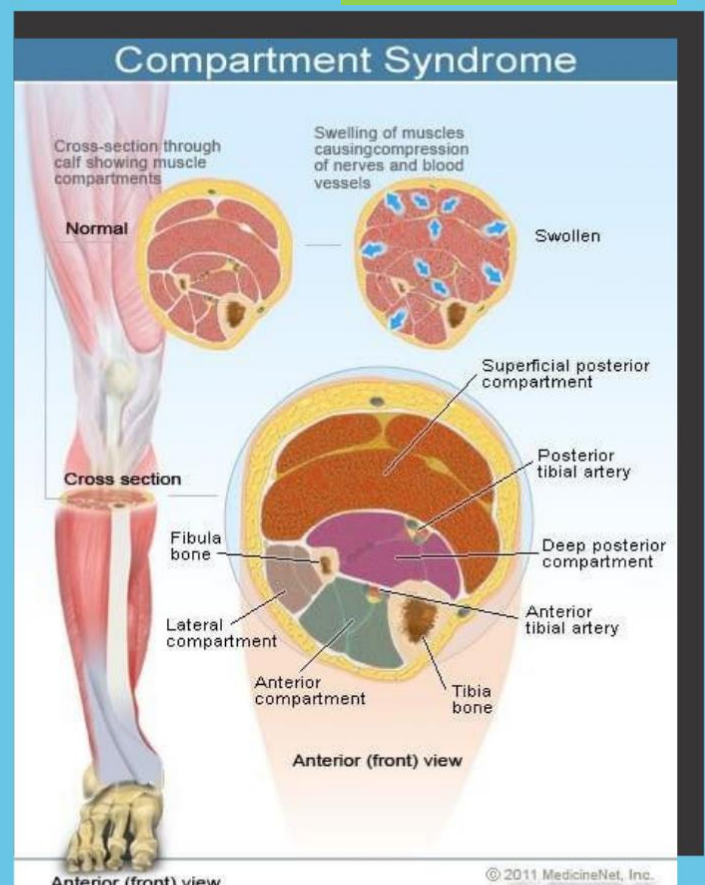
Compartment Syndrome:

⇒ When swelling in the muscle compartment results in compression and ischaemia of the muscles and nerves

Most common in lower leg fractures, but can occur in the forearm, hand, foot, thigh, buttock

Causes: Fractures, crush injuries, reperfusion injury, pharmacological causes (e.g. over anticoagulation), misplaced intramuscular injections.

Unrecognised and untreated results in parasthesia, ischaemia and muscle and nerve necrosis.





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Skin traction is a non-adhesive material available as a traction kit.

Skin traction is commonly used in the short term management of a fracture

Patient care

- Following application of the traction a neurovascular and pain assessment (CSM) should be undertaken and documented
- Neurovascular assessment should be undertaken 1 hour following application and regularly post application



- Pressure ulcer risk is increased (shearing forces in particular due to the pull of the traction).
- Ensure the heel is off the bed due to high risk of pressure damage
- Counter traction must be maintained at all times by ensuring the weights are off the floor



Image credit: Traction: Principles and application – RCN Guidance

Contact:

Orthopaedic Nurse Bleep for traction in ICU - 1791





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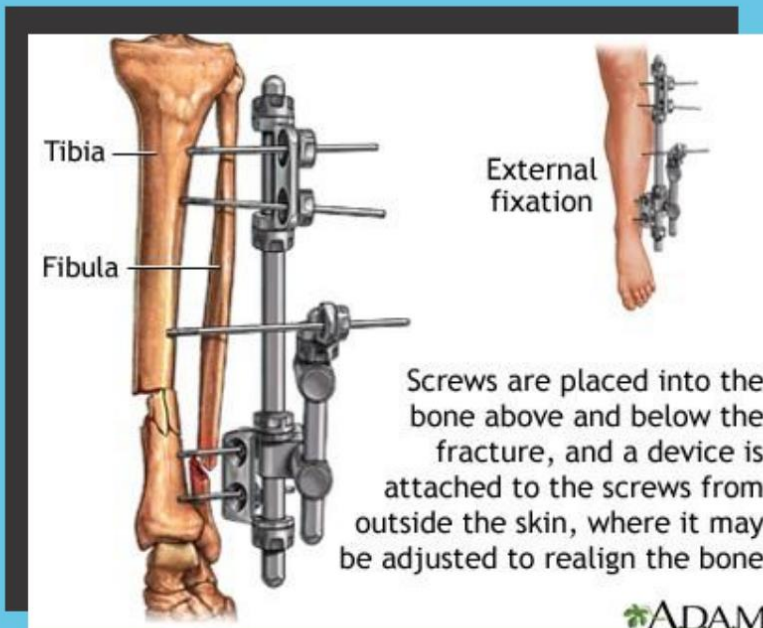


Image credit: medlineplus.gov/

External fixation –

surgical technique used to manage musculoskeletal conditions such as complex fractures.

Patient care

- Pin site care should be undertaken as often as necessary, keeping the area clean
- Any deterioration of the pin site or surrounding area warrants more frequent care and assessment
- The frequency of pin site care should also increase if there is copious drainage or if infection is suspected
- Inform medical staff if any signs of infection appear in the pin site area – redness, discharge, swelling, fever, pain.



Image credit: verywellhealth.com