Severn Major Trauma Network

North Bristol NHS
NHS Trust

Guidelines for North Bristol Trust

Compartment Syndrome

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Authors:	Andrew Riddick
Approved by:	Approved by the Severn Major Trauma Network

Severn Major Trauma Network

Management of Compartment Syndrome

Diagnosis

- All patients with a significant limb injury should be assessed specifically for compartment syndrome

- The diagnosis of compartment syndrome remains a clinical diagnosis. There is no definitive investigation to exclude compartment syndrome

- **Symptoms of compartment syndrome include:**
    - **Pain (out of proportion to injury sustained)**
    - **Pain on passive stretch of muscles in compartment**

- **Signs of compartment syndrome include:**
    - **Tense (woody firm) compartments**
    - **Paraesthesia**
    - **Diminished or absent pulse**
    - **Delayed capillary refill**
    - **Neurological changes**

    } Late signs

- In obtunded patients, or where the clinical picture is unclear compartment pressures may be measured (either a single or continuous measurement).

    - If absolute compartment pressure exceeds 40mmHg, the affected compartments should be released unless other life threatening conditions take priority
    - If the difference between diastolic blood pressure and compartment pressure is **30mmHg** or less, the affected compartments should either be released or continuously monitored depending on the treating consultant decision.

- Pressure monitoring should not be performed if the clinical diagnosis is clear and performance should not delay surgical treatment.

Documentation

- Should include the following data
    - Time of injury
    - Mechanism of injury
    - Time of evaluation
    - Level of pain
    - Conscious level
    - Response to analgesia

    - Any regional anaesthesia given

- Patients at risk of compartment syndrome should receive hourly nursing assessment of these symptoms. Pain scores that do not reduce in response to treatment warrants **immediate** senior clinical assessment.

Management

Acute compartment syndrome is a surgical emergency. Once definitively diagnosed, surgical release should be performed urgently (within 1 hour). Surgical treatment should not be delayed for any reason, including starvation status or bed availability.

Immediate treatment

- All circumferential dressings should be removed
- Elevate the limb to heart level
- Avoid all regional anaesthesia and patient controlled analgesia
- Evaluation every 30 minutes is required. If symptoms fail to improve, proceed to surgical decompression
- The alternative of continuous pressure monitoring should only be instituted by a Consultant

Surgical treatment

- Surgical treatment of lower leg compartment syndrome should be via a dual incision 4 compartment fasciotomy (as per BOAST / BAPRAS guidelines)

https://www.boa.ac.uk/wp-content/uploads/2014/05/BOAST-4-The-Management-of-Sever-Open-Lower-Limb-Fractures.pdf

- If compartment syndrome occurs following a fracture and prior to definitive surgical stabilisation, temporary stabilisation should be performed **following** fasciotomy using external fixation.

- Fasciotomy wounds should be dressed with saline soaked gauze
    - **Negative pressure dressings should be avoided**

Onward Management

- Following surgical decompression, the patient should be referred to the on call plastic surgical team at Southmead hospital for transfer and coverage of fasciotomy wounds. If the patient still requires definitive fixation, they should be referred to the orthopaedic team who will liaise with the plastic surgeons.

- If there is any difficulty in contacting teams, the patient should be referred through the major trauma network via the Trauma Team Leader at North Bristol NHS Trust