Blunt chest injury SOP

QPI

Great North Air Ambulance Service

Further reading

NICE NG39 2016
FPHC Consensus 2013

Related SOPs

Penetrating torso trauma SOP	**Prehospital emergency anaesthesia SOP**	
Low output state in trauma SOP	**Thoracotomy SOP**	**Tranexamic acid SOP**

Assessment

- Respiratory rate
- Oxygen saturations
- Work of breathing
- Early 'hands-on'
  - Trachea
  - Clavicles
  - Crepitus from rib fractures
  - Subcutaneous emphysema
  - Expansion
- Auscultation
- Point of care ultrasound

Initial management

Titrated oxygen aiming SpO_2 94-99%

Where possible, manage in a sitting position or on their side with the uninjured lung down

Assess pain score and provide early analgesia

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Suspected pneumothorax

Stable patients

Suspected pneumothoraces without significant CVS/RS compromise may be transported without intervention. Patients should be monitored closely for deterioration. SpO_2 should be maintained at 94-99% with titrated oxygen.

Standard helicopter altitudes will **not** significantly increase pneumothorax size, but ground transport (where feasible) will permit easier intervention en-route if required.

If PHEA is required for any other reason, all suspected pneumothoraces however small should be decompressed with a finger thoracostomy after the intubation.

Unstable patients

Patients with marked CVS/RS compromise may require temporizing with needle decompression. Be aware that a standard 14G cannula in the 2nd IC space may not reach the parietal pleura. The lateral 5th IC space is an alternative site.

If PHEA is also required, immediate finger thoracostomy is then indicated after intubation.

Rarely, some patients with **isolated chest injury** and respiratory compromise may be appropriate to manage with a prehospital chest drain, either after needle decompression, or as a primary technique. In the right patient group, this will avoid the need for PHEA.

LOST/NOST patients

Patients with low output state or no output state from a suspected tension pneumothorax should be managed with a finger thoracostomy. In this setting, thoracostomies do **not** need to wait for intubation first. Positive pressure can follow on immediately afterwards, or be provided by other team members (even via mask or iGel initially).

Refer to the Low output state in trauma SOP.

NICE guidance: A negative ultrasound does not reliably exclude pneumothorax. Use it primarily as a 'rule-in' investigation.

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Rib fractures / Flail / Lung contusion

The degree of intervention will be guided by the physiological state of the patient.

Strong analgesia alone may significantly improve respiratory dynamics and avoid the need for more aggressive intervention in some cases.

NICE guidelines suggest that a negative ultrasound does not reliably exclude pneumothorax, so where doubt still exists because of other suggestive signs, treat for one as above.

Patients with significantly impaired gas exchange will likely require prehospital emergency anaesthesia to optimize oxygenation.

- Where significant hypovolaemia is not a concern, higher PEEP levels (10 - 15mbar) may be beneficial
- Where head injury is not a concern, lower tidal volumes (with permissive hypercapnia) may be beneficial

Chest crush / Traumatic asphyxia

The degree of intervention will be guided by the physiological state of the patient.

Patients should be managed as above. Where there has been a significant hypoxic insult to the brain, patients should also be managed in accordance with the traumatic brain injury SOP.

HEMS team only

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