

H06: Chest Trauma

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Reviewed:

Introduction

Management of chest injuries represents a challenge in prehospital care. Common chest trauma injuries seen by paramedics include rib fractures, flail chest, simple pneumothorax, hemothorax, open pneumothorax and tension pneumothorax. Paramedics must maintain a high index of suspicion for underlying life-threatening injuries is critical necessary, as many patients may present with initially stable vital signs.

Essentials

- Closely monitor all patients with chest trauma for signs of deterioration, with particular attention to respiratory status. Be prepared to support oxygenation and ventilation as necessary.
- Be suspicious of the potential for underlying torso injuries in cases of high mechanisms. Injuries to the great vessels, diaphragm, abdominal organs, and the myocardium can occur.
- Differentiate between blunt and penetrating mechanisms of injury.
- Place a commercial vented chest seal (preferred) or occlusive dressing taping on 3 sides to seal open chest wounds.

Additional Treatment Information

- Sealing of open chest wounds may place patients at risk for tension pneumothorax.
- Monitor these patients closely and relieve pressure by lifting the chest seal or occlusive dressing if a tension pneumothorax is potentially developing.
- Entonox is contraindicated in patients with suspected pneumothorax or inhalation injury.
- Decompression of a suspected tension pneumothorax should be rapidly performed in patients with deteriorating respiratory and hemodynamic status (ACP/CCP).
- Positive pressure ventilation may worsen clinical status in patients with untreated tension pneumothorax.

Referral Information

Follow the appropriate BCEHS Provincial Major Trauma Triage Guideline as appropriate to the local response area. Use Auto Launch or Early Fixed Wing Activation processes as indicated.

General Information

- Palpation of the chest wall, axilla and neck can be helpful in feeling the presence of subcutaneous air
- CPAP is contraindicated in the patient with suspected pneumothorax

Interventions

First Responder

- Position patient sitting if other injuries permit
- Perform basic airway interventions and be prepared to provide ventilatory support as needed
 - → [B01: Airway Management](#)
- Administer high flow oxygen
 - → [A07: Oxygen and Medication Administration](#)
- Rapidly apply a chest seal to an open pneumothorax if present

Primary Care Paramedic – All FR and EMR interventions, plus:

- Insert supraglottic airway as indicated to support oxygenation and ventilation
 - → [PR08: Supraglottic Airways](#)
- Consider vascular access
 - → [D03: Vascular Access](#)
- [Tranexamic acid](#) if indicated

Advanced Care Paramedic – All FR, EMR, and PCP interventions, plus:

- Perform needle decompression in a patient with signs of decompensating obstructive shock secondary to a suspected tension pneumothorax
 - → [PR21: Needle Thoracentesis](#)
- Consider advanced airway management as necessary to support oxygenation and ventilation in deteriorating patients
 - → [PR18: Anesthesia Induction](#)
- Manage cardiac dysrhythmias associated with myocardial injury as indicated
 - → [C02: Bradycardia](#)
 - → [C03: Narrow Complex Tachycardia](#)
 - → [C04: Wide Complex Tachycardia](#)
- Administer analgesia as necessary
 - → [E08: Pain Management](#)

Critical Care Paramedic – All FR, EMR, PCP, and ACP interventions, plus:

- Perform ultrasound assessment for pneumothorax
- Consider rapid sequence intubation for patients requiring oxygenation and ventilator support
- Secure and manage chest drainage system in the interfacility transfer environment as necessary

Evidence Based Practice

[Chest Trauma](#)

References

1. Ambulance Victoria. Clinical Practice Guidelines: Ambulance and MICA Paramedics. 2018. [\[Link\]](#)
2. Alberta Health Services. AHS Medical Control Protocols. 2020. [\[Link\]](#)
3. Campbell JE, et al. International trauma life support for emergency care providers. 8th edition. 2016.
4. Greaves I, et al. The trauma care pre-hospital manual. 2018.

