British Orthopaedic Association

BRITISH ORTHOPAEDIC ASSOCIATION AUDIT STANDARDS for TRAUMA

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The Management of Blunt Chest Wall Trauma

Background and justification

Patients with blunt chest wall injuries often have severe associated injuries and even isolated chest injuries may have a high mortality and morbidity. All patients, no matter where they present, should have access to high quality, specialist care. Within England, they should be managed within a Major Trauma Network. Chest trauma care pathways must include resuscitation protocols with early and appropriate pain management, which can significantly reduce complications. NICE guideline IPG361 suggests that a small proportion of patients will benefit from early operative chest wall stabilisation.

Inclusions

Adults with severe chest wall injuries.

Standards for Practice

1. Initial management should be directed by a consultant-led trauma team. Significant chest injury can be associated with severe haemorrhage, respiratory compromise, haemothorax and/or pneumothorax and other life-threatening injuries.
2. All hospitals receiving patients with major trauma must have agreed protocols for resuscitative thoracotomy with suitable equipment, instruments, and surgeons with appropriate training, immediately available.
3. Early CT scan with contrast should be immediately available to define chest wall injuries. 3D surface rendered images should be available within 24 hours if rib fractures are identified.
4. Agreed guidelines for the insertion, management and removal of intercostal drains in trauma, including site, technique and the use of prophylactic antibiotics, must be available.
5. An agreed analgesia protocol, including indications for neuraxial, regional (e.g. paravertebral) and opioid analgesia, must be available.
6. Written and agreed guidelines for the management of patients with severe chest wall trauma must include multidisciplinary care with specialist consultant-led surgical, anaesthetic, pain management and physiotherapy teams. These guidelines must be available to staff and the resulting management decisions documented in the patient record.
7. Persistent (> 48 hours) air leak should be discussed with a thoracic surgeon.
8. Consider surgical stabilisation for patients with severe chest wall injuries including flail chests, injuries causing respiratory compromise or where pain control cannot be achieved. Pre-operative assessment must include multidisciplinary anaesthetic, intensive care and surgical review and this must be documented in the patient's notes.
9. There should be clearly defined pathways for the early identification, management and transfer of patients who may benefit from surgical stabilisation of the chest wall and associated injuries.
10. Transfer of patients for specialist management should occur within 48 hours of the decision to transfer or the patient becoming fit for transfer.
11. Surgery to stabilise the chest wall should take place within 48 hours of the decision to operate unless there are medical contraindications.
12. Surgery must be undertaken by a surgical and anaesthetic team with experience in management of chest injuries and fracture surgery. This may necessitate dual consultant operating in some centres. The surgical team should be able to manage all aspects of chest wall and intra-thoracic trauma, including thoracoscopic procedures.
13. Early postoperative care should be on a critical care facility or a specialist thoracic surgery ward. Nursing and physiotherapy from providers with the requisite experience is essential.
14. On-going care should be facilitated by a rehabilitation consultant with continued care from surgical, pain management and specialist respiratory physiotherapy teams.
15. All units that treat patients with chest wall trauma should have on-going audit, including submission to the Trauma Audit and Research Network (TARN).

Evidence base:

Multidisciplinary Consensus Meeting 2015: www.nice.org.uk/guidance/ng37

Retrograde Urethrogram:

- Usually in Resuscitation room.
- X-ray plate under pelvis.
- 20 ml dilute IV contrast medium (10 ml contrast + 10 ml saline).
- Balloon of small Foley catheter into penile meatus and gently inflated.
- Hold catheter in place and inject contrast.
- AP Pelvis x-ray taken. Additional lateral if possible.

Catheter Cystogram:

- Usually in Resuscitation room.
- X-ray plate under pelvis.
- 300ml dilute IV contrast medium (150 ml contrast + 150 ml saline).
- Push catheter in a further 2-3 cm so balloon not blocking bladder neck.
- Inject contrast down catheter with bladder syringe and clamp catheter.
- AP Pelvis x-ray taken. Additional lateral if possible.
- Evacuate contrast and repeat AP Pelvis x-ray.