Penetrating Thoracic Trauma Clinical Pathway

JOHNS HOPKINS ALL CHILDREN'S HOSPITAL

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Rationale:

This clinical pathway was developed by a consensus group of JHACH physicians, advanced practice providers, nurses and pharmacists to standardize the management of children presenting with penetrating thoracic injury.

This guideline is designed to assist the emergency bedside provider with the potential decisions on diagnostics and disposition based on the clinical presentation of the patient.

Background

Thoracic injury occurs infrequently in pediatrics but injuries can be immediately life threatening with mortality rates of 15-26%. Rapid and thorough assessment is necessary to prevent a bedside practitioner missing/delaying identification of and intervening with a life threatening injury.

Diagnosis

Information received pre arrival or at triage will help assist the bedside practitioner in identifying thoracic penetrating injury. For the unconscious patient, rapid and thorough primary and secondary assessment is necessary to find all injuries.

Lab tests: CBC, CMP, T&S, PT/PTT

Radiologic studies: CXR, Chest CT

Clinical Management

Determining stability of the patient on presentation is necessary to determine the immediate interventions necessary and to determine diagnostic and disposition options for treatment. Because penetrating injuries can unseen injuries, a comprehensive assessment and high index of suspicion is necessary.

Assessment and intervention should be coordinated with a trauma team activation and care driven by ATLS protocol.
Penetrating Thoracic Trauma

- ATLS primary survey
- Remove clothing
- Complete body assessment for wounds
- Paperclips to wounds

Loss of vital signs < 5 minutes

EC thoracotomy versus OR

Stable

- CXR
- Consider abdominal imaging
- Labs
- Insert chest tube(s) as indicated

Unstable

- Needle decompression/ Chest tube(s) as indicated
- Labs
- CXR

FAST pericardial window

Massive hemothorax
- Evacuation >10-15 cc/kg of blood
- Continuous EBL >2-4cc/kg/hr
- Persistent air leak

Observation

(-)

OR thoracotomy

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Observation

OR thoracotomy

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Observation

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- Sternotomy versus Thoracotomy

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- Bronchoscopy/Eosophagoscopy
Emergency Center Management
Patients presenting for thoracic penetrating injury should have a level 1 trauma team immediately activated and ATLS protocols followed for initial assessment, correction of life threatening injuries, rapid secondary assessment, and disposition decision.

All patient with an injury will be admitted to a surgical service under the direction of a trauma attending.

Discharge
After thorough and comprehensive assessment and diagnostics completion, a patient with no injury can be discharged from the EC.

Outcome Measures:
- Team compliance with guideline
- Unexpected morbidity and mortality

References
Children’s National Trauma And Burn Handbook (hardcopy on file)

Eastern Association for the Surgery of Trauma Management Guidelines (EAST).
http://www.east.org


UK HealthCare Pediatric Trauma Care Guidelines. 2011. www.hosp.uky.edu/careweb
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Disclaimer

Clinical Pathways are intended to assist physicians, physician assistants, nurse practitioners and other health care providers in clinical decision-making by describing a range of generally acceptable approaches for the diagnosis, management, or prevention of specific diseases or conditions. The ultimate judgment regarding care of a particular patient must be made by the physician in light of the individual circumstances presented by the patient.

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