Guideline for Cervical Spine Clearance In Trauma

Last updated: 2nd September, 2010.

Definition:
To provide indications for determining if a trauma patient has sustained a cervical spine injury.

Parameters of the Guideline:
All patients who have sustained injuries through the following mechanisms should have a cervical collar placed in the pre-hospital environment if the tactical situation allows:

- Trauma resulting in loss of consciousness or even the question of loss of consciousness due to any form of head injury
- Trauma resulting in temporary amnesia
- Major explosive or blast injury
- Mechanism that produces a violent impact on the head, neck, torso or pelvis
- Mechanism that creates sudden acceleration/ deceleration or lateral bending forces on the neck or torso
- Fall from height (vs. fall from standing)
- Ejection or fall from any motorized vehicle
- Vehicle roll-over
- Any patient complaining of neck pain or displaying neurological impairment following a trauma should have a cervical collar placed.
- Patients with penetrating cervical injury from an explosive mechanism should have a cervical collar placed if possible. When a blunt mechanism is combined with a penetrating injury, the cervical collar is an important protection until unstable spinal injury is ruled out, but all providers must be aware that the collar may hide other injuries and developing pathology such as expanding hematoma.

Definitions of terms:

- GCS – Glasgow Coma Scale
- Significant distracting injury - defined as any injury which is so painful that it may obscure the patient’s ability to notice pain in their neck; proximity increases the risk of distraction, and therefore upper extremity and upper torso injuries are more likely to be distracting than lower torso or lower extremity injuries

Background:
The incidence of cervical spine injury in a trauma patient is estimated to be 1% to 3%.1-3 In patients with a major head injury, the incidence of an associated spinal injury increases to 5%, and has been reported to be as high as 10% to 20%.4,5 Early recognition and management of cervical spine injuries in the acute trauma patient is necessary to prevent detrimental neurologic outcomes.
Assessment:

1. Referral points from outside Divisional Hospitals (Emergency Departments of Divisional Hospitals inclusive):

   Appendix 1

2. Divisional Hospital (Surgical Department) Algorithm:

   Appendix 2

Divisional Hospital considerations:

Any patient with a suspected cervical spine injury and a neurologic deficit should have a cervical collar in place, and should be referred immediately for surgical consultation and imaging. There are separate algorithms for reliable and unreliable patients. 6-8

Unreliable patients are those who cannot adequately communicate, have a decreased level of consciousness (GCS<15), or have a significant distracting injury.

The treating physician / surgeon has final say in determining a certain injury is distracting enough to render a patient unreliable and require clearance via the unreliable patient algorithm. If uncertain, err on the side of caution and consider the injury distracting and proceed accordingly. 9-12

Investigations / other Issues:

Covered with Algorithms

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References:

ALGORITHM FOR SUSPECTED CERVICAL SPINE IN TRAUMA

Cervical collar to remain in place until cervical spine injury excluded

- Decreased level of consciousness (GCS< 15) or painful distracting injury?
  - Is the patient unable to communicate adequately?

HISTORY & EXAMINATION

Patient complaining of neck pain or paresthesia

Physical Exam:
Maintain C-spine control, remove collar
inspect for deformities, palpate for point tenderness if none, check for active full ROM

REFER TO ORTHOPEDICS
CERVICAL SPINE CLEARANCE ALGORITHM - UNRELIABLE PATIENT

1. Decreased level of consciousness (GCS < 15) or painful distracting injury?
2. Is the patient unable to communicate adequately?

**YES to either question**

**Limited exam:** While maintaining C-spine control, remove collar, visually inspect, palpate for deformities. Replace collar.

**Imaging:** Lateral, AP, odontoid views. CT scan if available.

- Imaging normal
- Imaging abnormal

**Will the distraction injury be stabilized or level-of-consciousness issue be cleared up in 24hrs?**

**YES**

Wait until issues cleared up. Is patient reliable in 24hrs?

**YES**

**Physical Exam:** Maintain C-spine control. Remove collar, inspect for deformities, palpate for point tenderness. If none, then check for active full ROM.

**NO FINDINGS**

- C-spine cleared
- Remove collar
- Document in chart

**NO**

**Films Inadequate**

Keep collar on. Repeat films needed.

**NO**

Go to RELIABLE algorithm

**Films Inadequate**

Keep collar on. Repeat films needed.

**ANY FINDINGS**

1. Keep collar on
2. Consider definitive treatment

*Adequate views show C1 to T1*
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Scope and Application

This CPG is intended for use by all health care workers in their daily care of patients who undergo this particular surgical procedure

Effective Date

2010

Supercedes Policy Number

Not applicable

Review Responsibilities

The Chairperson of the Surgical CSN will initiate the review of this guidelines every 3 years from the date of issue or as required.

Further Information

Surgical CSN Chairperson

RESPONSIBILITY:

CPG Owner: National Surgical CSN

CPG Writer: Ministry of Health

Date: November 2010

Endorsed:

National Medicines & Therapeutic Committee, MOH

Date: 23 November 2010

Endorsed:

National Health Executive Committee, MOH

Date: 25 November 2010