

CT for all or selective approach? Who really needs a cervical spine after blunt trauma?

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1. Why is this topic important?

Paramedics have long been interested in being able to clear C-spine in the field; this would spare patients the discomfort of long board immobilization and may spare emergency departments the time and resources used to CT patients without S-spine injury. Another reason has now surfaced, namely the Affordable Care Act will mandate evidence-based practice interventions for physicians and perhaps EMS providers. It now becomes even more important to evaluate the criteria for C-spine immobilization.

2. What does this study attempt to show?

This study attempts to determine which factors would be the best predictors of possible C-spine injury. The factors are drawn from the National Emergency X-Radiography Utilization Study ([NEXUS](#)) and the Canadian C-spine rule ([CCR](#)). Research was done from 2008 through 2012 in-house at one Level I trauma center. All Trauma Team Activations were eligible. 5,182 patients were enrolled and examined retrospectively for presence of c-spine fracture using computed tomography (CT). Those with and without c-spine were compared using both the NEXUS and CCS criteria combined in order to determine the best possible predictors from both sets of criteria.

3. What were key findings?

Seven factors were independently identified that were positively and significantly associated with C-spine injury: tender to palpation midline, GCS score < 15, Age ≥65, paresthesias, rollover MVC, patient ejection, and patient never in sitting position in the ED. Of those seven, age and mechanism is from the CCS criteria. The sensitivity of these seven factors in prediction of c-spine injury was 100% with 12% specificity, meaning that almost all patients would be in line for a CT.

4. How is patient care impacted?

The results of this study underscore the necessity for more study using the CCR criteria, particularly for EMS. The limitations of this study pertain to all such studies examining clearance of c-spine which is measurement error, or the variation inherent in subjective interpretation. This study included one Level I center, and did find variation between the clinicians determining trauma activations. Recommendations for EMS are to continue c-spine clearance according to local EMS protocols; however robust EMS research using the Canadian C-spine rule has not yet been performed. A large study is currently enrolling patients which will perhaps be supportive of EMS ability to successfully clear c-spine injury prior to hospital arrival. [Clinical Trials](#). [Canadian Study](#)

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