

CT Scanning Is Sufficient to Clear the Cervical Spine of Elderly Falls Less Than 5 Feet.

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CT Scanning Is Sufficient to Clear the Cervical Spine of Elderly Falls Less Than 5 Feet

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Background

- In elderly patients with low mechanism of injury, such as those who fall from less than five feet, the risk of a purely ligamentous injury is low in the absence of calcified ligaments.
- Cervical spine injuries are not uncommon after elderly falls, especially fractures of the odontoid.
- Cervical spine clearance is often complicated in elderly patients.
- Elderly patients may have compromised exams secondary to dementia, drugs, and other co-morbidities.
- Obtunded patients present as a special challenge. However, a recent study evaluated obtunded trauma patients with gross movement of all extremities and found CT was sufficient to clear the cervical spine¹.
- Interventions in the elderly population carry serious risks.
- Prolonged use of cervical collars can lead to pressure ulcers, increased agitation, or respiratory or swallowing difficulties.
- MRI evaluation to rule out ligamentous injury carries risks and cost.

Hypothesis

- We hypothesize in elderly patients who present with a negative neurological exam, a negative CT will safely clear the cervical spine in these patients.

Methods

- Retrospective review from 3/2007 to 8/2008
- Trauma registry of Level I trauma center
- All patients 75 years of age or older who fell from less than five feet included.
- NEXUS criteria was used to clear the cervical spine without radiographic studies in selected patients.
- Plain films, cervical CT and/or cervical MRI were performed on appropriate patients.
- Data collected:
 - Age
 - Gender
 - Race
 - ISS
 - Co-morbidities
 - Length of stay
 - ICU/Vent days
 - Discharge disposition/Mortality
 - Radiologic studies performed for the cervical spine

Outcome measures

- Need for surgery or need to continue to wear a cervical collar at discharge

Study population

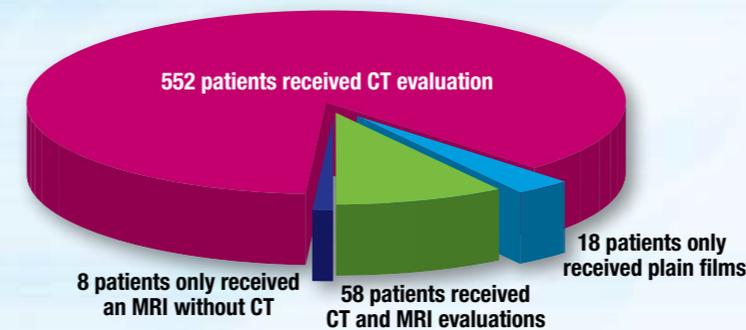
- 1259 patients met criteria
- Average LOS - 5.3 days
- Average age - 84 years
- Average ISS - 10.1

Reference

Como JJ, Leukhardt WH, Anderson JS, Wilczewski PA, Samia H, Claridge JA. Computed tomography alone may clear the cervical spine in obtunded blunt trauma patients: a prospective evaluation of a revised protocol. J Trauma. 2011 Feb;70(2):345-9; discussion 349-51.

Radiographic studies performed

- 636 patients had studies; 623 had no studies



Conclusion

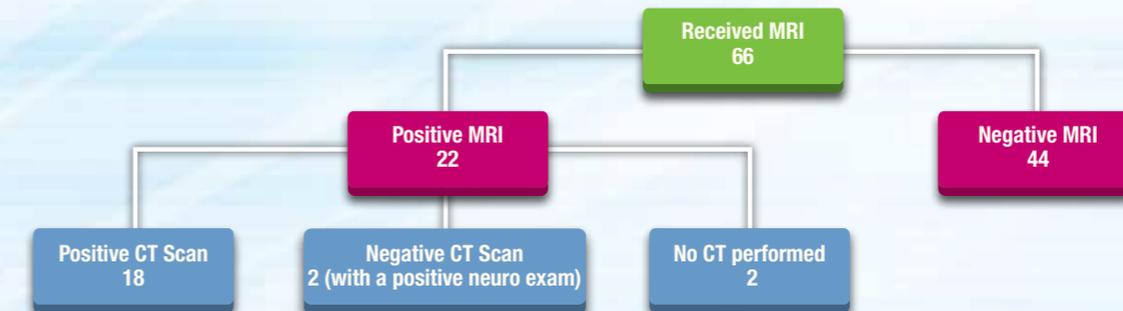
- We conclude that, since ligamentous injuries are rare in patients who fall from standing, liberal use of CT and only selective use of MRI is a safe approach to clearing the cervical spine in this group.
- By only performing MRIs on patients with persistent neck pain, neurological findings and/or positive CT/plain films, we were able to safely reduce MRI use (and the potential associated risks) to just 66 patients.



CT Scan showing C2 Fracture

Results

- 72 (5 %) patients were discharged with cervical collars or received surgery prior to discharge.
- 1187 patients (95% of patients) were discharged without a collar or a surgical intervention.



- No patient with a positive MRI had a negative CT, negative plain film and/or a normal neurological exam.