The Utility of MRI in Cervical Spine Clearance in Alert Blunt Trauma Patients with Cervical Spine Tenderness and Negative CT Scan

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STUDY OBJECTIVE
- To evaluate the utility of MRI of the cervical spine in alert blunt trauma patients with a GCS of 15 without any neurological deficits who have cervical spine tenderness and a negative CT scan.

HYPOTHESIS
- Blunt trauma patients with a GCS 15 who have cervical spine tenderness do not need an MRI when the CT scan of the cervical spine is negative.

METHODS
- A retrospective study was performed from January 2005 through August 2012 at a community-based Level II trauma center.
- Of the 1,400 blunt trauma patients who underwent a CT and an MRI of the cervical spine, 601 patients met the inclusion criteria.
- This included patients who had a negative CT of the cervical spine, GCS 15, with persistent cervical spine tenderness and without any neurological deficits.
- All MRI results were reviewed and those of clinical significance (requiring long term immobilization or operative intervention) were independently reviewed by each of the three neurosurgeons at our institution.

RESULTS
- Of the 601 patients who met the inclusion criteria, 155 (25.8%) had an abnormal MRI of the cervical spine.
- Seven (1.2%) patients had clinically significant findings, with only one (0.2%) undergoing operative management.
- The remaining six (1.0%) individuals were managed with long-term cervical spine immobilization.

CONCLUSION
Blunt trauma patients who are awake and alert without any neurological deficits, who have cervical spine tenderness despite a negative CT, may not warrant an MRI prior to cervical spine clearance.