

Spinal Trauma and Indications for Advanced Imaging: Unanswered Questions

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RESUMEN

El trauma espinal es una de las emergencias en trauma más devastadoras. La evaluación por imágenes es una parte fundamental en conocer el tipo de lesión asociada al trauma y necesaria para establecer tratamiento y pronóstico. Discutimos brevemente algunos interrogantes en cuanto a trauma espinal e evaluación imagenológica.

Palabras clave: Neurocirugía, Neurotrauma, Trauma espinal.

ABSTRACT

Spinal trauma is one of the most devastating trauma emergencies. Imaging evaluation is a fundamental part of knowing the type of injury associated with trauma and is necessary to establish treatment and outcome. We briefly discuss some questions regarding spinal trauma and imaging evaluation.

Keywords: Neurosurgery, Neurotrauma, Spinal trauma.

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ARE THE CT SCAN IMAGES AN INDICATION FOR URGENT SPINAL MRI?

Magnetic resonance imaging (MRI) is a superior imaging modality to diagnose soft tissue injuries.^{1,2} The use of contrast helps with the visualization of fluid collection vs blood vs cord injuries. Computed tomography (CT) scan of the spine identifies injuries to bony structures, such as dislocations, fractures, and other such injuries. CT scan is part of the initial workup of polytrauma patients and is done early after hospital admission. CT scan is not contraindicated for patients with metallic components as for MRI. Once a CT scan shows a spinal fracture, and the patient's condition allows for full neurological examination, delaying the MRI search for additional injuries is often an open-ended question. We suggest that the MRI with contrast is indicated after initial stabilization but before spinal surgery or instrumentation. There is no clear evidence to support this proposal, and further investigation research is warranted. There may be other trauma-related reasons to delay the MRI.³⁻⁵

SHOULD THE TREATMENT OF POLYTRAUMA BE DELAYED FOR SPINAL MRI?

Patients with polytrauma undergo extensive evaluation in a multidisciplinary fashion. The MRI should be delayed until life-threatening conditions such as airway control, massive thoracic or abdominal bleeding, major limb injury with crush trauma, blast injuries, and massive facial trauma are first dealt with. A physical examination can be limited due to the complex nature of the presentation. If the initial CT scan shows spinal trauma, the option to perform an MRI must wait until other overall conditions are stabilized. It is not clear when the right time to get the MRI is. This is best decided by close communication between the trauma

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team, vascular surgeons, orthopedic surgeons, and neurosurgery. Further investigation will eventually help in establishing the best timing for the MRI.

PRIMARY ADMISSION TO NEUROINTENSIVE CARE OR TO THE OPERATING ROOM FIRST?

Patients require fixation of spinal injuries when there is no urgent need requirement for non-spine emergent trauma procedures. These patients usually get an early MRI to look for into full spectrum of the spinal trauma.

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