

SUMMARY AND CONCLUSION

The role of magnetic resonance imaging (MRI) in the assessment of spinal injuries is continuing to evolve. MRI allows direct visualization of the soft tissues of the spine, which previously could be evaluated only via secondary or indirect signs.

The primary goal of MR imaging in patients with trauma to the spine and spinal cord is to search for a spinal cord lesion and to demonstrate the presence and location of spinal cord compression. In addition, bone, joints, ligaments and soft tissues should be examined.

The aim of this work is to assess the role of MRI in evaluation of spinal trauma.

This study included 50 patients with spinal trauma; they were 39 males and 11 females. Their age ranged between 16 years and 84 years (mean 42years). T1 and T2W MRI were acquired for all cases in sagittal and axial views.

Three major groups of accident types were identified: traffic accident, falling, and other accidents including sports.

The mechanisms of injury consisted of 28 motor vehicle collisions, 18 falls, 4 others.

In traffic accidents, 28 patients sustained mainly wedge compression fractures and burst fractures. In the falling accidents, 18 patients sustained mainly WCF and burst fractures.

The majority of injuries occurred in the cervical spine, followed by thoracic spine and then lumbar spine.

The majority of WCF injuries occurred in the thoracic spine, followed by lumbar spine and then cervical spine.

Burst fracture (n=13, 26%) was the second most common fracture type and was most frequently seen in the thoraco-lumbar junction.

Bone bruise was the commonest type of secondary injury.

The incidence of wedge compression and burst fractures peaked at the thoracolumbar junction.

Among 45 patients with acute spinal injury had acute traumatic findings on MRI were subdivided: 17 of 45 patients (37,77%) had acute ligamentous injury, 23 of 45(51,11%) patients had an acute disc injuries, 6 of patients 45 (13%) had spinal epidural or subdural hematoma, 21 of 45 patients (46,6%) patients had spinal cord edema or contusion, 5 of 45 patients (11.3%) had a prevertebral hematoma. Eleven cases of cord damage (SCI) located at the cervical region (52,3%) and 6 in the thoracic region(28,5%) and 4 (19,04%) in the lumbar region.

A fast and accurate diagnosis of spine injuries is important because a delayed or un-diagnosed, unstable injury can lead to severe morbidity and mortality. Spine MR imaging has been shown to be an excellent technique for evaluating soft-tissue injuries and is considered the reference standard in this regard.

Patients who have suffered a spinal cord injury (SCI) and who demonstrate new or changing clinical features such as increasing myelopathy, ascending neurological level, pain and increasing muscle spasms require imaging, as treatable causes exist. Chronic spinal cord injury is optimally investigated using MRI.

In conclusion, MR imaging is essential for the accurate understanding, documentation, and depiction of osseous and soft-tissue injuries that occur in different type of spinal injuries. MRI is ideally suited to assessment of the patient with acute spinal injury. Careful attention to technique and imaging of the whole spine will allow a complete evaluation of injury to the vertebral column, ligaments, discs and cord.