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A Severe Case of High Cervical Spinal Cord Injury without Radiographic Abnormality

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The hypermobility of the pediatric bony cervical spine allows deformation of the musculoskeletal structures beyond physiologic extremes, permitting direct trauma or ischemic injury of the spinal cord followed by spontaneous reduction of the bony spine. This predisposes to a spinal cord injury without radiological abnormality (SCIWORA) [1]. SCIWORA has positive neurologic

findings and negative plain X-ray or CT scan but pathologic spinal cord MRI [2]. We report the neuroimages of a 4-year-old male who suffered a SCIWORA at the high cervical level due to a traffic accident. He developed complete tetraplegia and mechanical ventilation was required. MRI revealed a complete section of the spinal cord at the C₁ level (fig. 1).

References

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Fig. 1. T₂- (a, b) and T₁- (c) weighted sagittal MRI display a traumatic lesion in the high cervical spine without radiological abnormality (SCIWORA). T₂-weighted coronal (d) and axial (e) MRI show the same lesion. The lesion is an apparently complete section of the spine at the C₁ level (arrows). f Normal X-ray of cervical spine.