

A 20-year-old woman with spinal cord injury without radiological abnormalities (SCIWORA)

Omar Alberto Venegas Gurrola, Omar Uriel Sánchez Alba, María Isabel Solís Gamboa, Goretti Monserrat Rodríguez Delgado

Abstract

Spinal cord injury without radiological abnormalities (SCIWORA) has been defined as a direct trauma to the spinal cord, with no radiological or tomographic abnormalities, although

there is a deficit, whether motor, sensory or both. (1) To establish the final diagnosis, shock, obstetrical complications, penetrating trauma to the spine and congenital malformations should be excluded. (2)

Key words: Spinal cord, injury, spinal compression, abnormalities, computed tomography (CT).

Case report

Female patient, 20-year-old, with no history of previous trauma, without chronic-degenerative diseases, which suffered a rollover type car accident while travel in the passenger seat without wearing a seat belt was taken to the emergency room by paramedical staff.

She arrived at the emergency room presenting a score of 9 on the Glasgow Coma Scale, lower extremities without mobility, no myotatic reflexes and loss of sensitivity, integrating a complete spinal cord syndrome at T6 level. After a few minutes she presented neurological deterioration from 9 to 7 points on the Glasgow Coma Scale, so it was decided to perform endotracheal intubation. Computed tomography (CT) was performed, show-

ing only traumatic subarachnoid hemorrhage and low-grade pneumocephalus at cranial cisterns. Plain x-rays on antero-posterior and lateral projection of cervical, thoracic and lumbar spine were performed, obtaining images with no abnormalities (**Figures 1-3**). After the exposed results, cervical and dorsal magnetic resonance imaging (MRI) were performed at 24 and 72 hours, of which no evidence of spinal cord damage or compression, edema, fracture or collapse of vertebral bodies were found (**Figure 4**). Based on the above, final diagnosis of Spinal cord injury without radiological abnormalities (SCIWORA) was settled down.

Discussion

SCIWORA in adults is a very rare condition, observed only in 12.4%, regarding to children cases, where is more common. Emphasizes that is more frequently observed cervical damage (80%) and no thoracic vertebrae injury, like this patient. (3) This case did not show other abnormalities either the spine or extravertebral, in contrast to 93% of cases presented in medical literature. (4)

From Universidad Autónoma de Zacatecas (Omar Alberto Venegas Gurrola, Omar Uriel Sánchez Alba, María Isabel Solís Gamboa, Goretti Monserrat Rodríguez Delgado) and Hospital General Zacatecas "Luz González Cosío", Zacatecas, México (Omar Alberto Venegas Gurrola).

Address for correspondence:

Omar Venegas, MD
410 Circuito Ciudad Gobierno St., Zacatecas 98160, México
Tel: 492-92-4-01-01
Email: omarvenegas006@yahoo.com.mx

Figure 1. Antero-posterior plain x-ray with no abnormality evidence at cervical spine



Figure 2. Antero-posterior thoracic spine x-ray without perceptible injury



Figure 3. Lateral projection of dorsal spine showing no signs of bony damage or any instability



Figure 4. MRI of thoracic spine without evidence of injury



Legend: MRI=magnetic resonance imaging.

References

1. Schellenberg M, Islam O, Pokrupa R. Traumatic Spinal Cord Injury without Initial MRI Abnormality: SCIWORA Revisted. *Can J Neurol Sci* 2011;38:364-6.
2. Rozelle CJ, Aarabi B, Dhall SS, Gelb DE, Hurlbert RJ, Ryken TC, et al. Spinal Cord Injury without radiographic abnormality (SCIWORA). *Neurosurgery* 2013;72: 227-33.
3. Sharma S, Singh M, Wani IH, Sharma S, Sharma N, Singh D. Adult spinal cord injury without radiographic abnormalities (SCIWORA): clinical and radiological correlations. *J Clin Med Res* 2009;1:165-72.
4. Boese CK, Lechler P. Spinal cord injury without radiologic abnormalities in adults: a systematic review. *J Trauma Acute Care Surg* 2013;75:320-30.