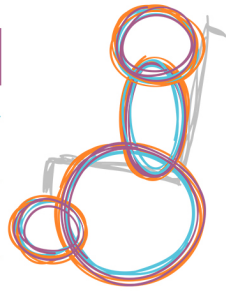


# Epileptic seizures may promote spinal cord injuries in patients with spinal instrumentation for scoliosis

childhood  
disability  
LINK



## Summary

Injuries secondary to epilepsy, particularly injuries of the spine and spinal cord, are not uncommon. Beyond the effects of seizures, spinal instrumentation inserted surgically to treat scoliosis may add pressure to the spine, making injuries even more likely. Thus, myelopathy, or injury of the spinal cord, should be considered a real possibility in patients with epilepsy and spinal instrumentation.

This was a case report of a 15-year-old girl who was unable to walk, with no movement in her right leg and only limited movement in her left leg. She had confirmed Dravet syndrome and epilepsy with nearly daily seizures and also had prior surgery to insert spinal instrumentation for scoliosis. Upon presentation, she also had global developmental delay. A computed tomographic myelogram gave an image of the spine and spinal cord, confirming spinal cord compression due to shifted and degenerated vertebrae. The girl was immediately treated with surgical decompression and additional instrumentation to stabilize her spine. The patient recovered well, able to fully bear weight on her legs again in two days and with restored baseline motor capacities within a few weeks. At 2 1/2 years of follow-up, neurological complications remained absent.

## What families should know

Reports of spinal injuries due to seizures in patients with preexisting spinal instrumentation are rare. However, doctors should monitor patients with spinal instrumentation who regularly experience seizures, in order to detect spinal instability. It is well established that, beyond long-term cognitive impairment and neurobehavioral or neuropsychiatric disorders, epilepsy can lead to immediate physical injuries. The most likely injuries are head injuries, burns, crushing injuries, and traumatic brain injury. Additionally, anti-seizure medication may compromise bone health; patients using this medication should also have vitamin D and calcium supplements. Families should be aware of the risk for injury posed by seizures.

## What practitioners should know

In this case, a patient with a history of epilepsy presented with limited leg movement following a particularly severe seizure. Because epilepsy can be associated with neurological deficits, such as global developmental delay, determining the cause of motor impairments may be difficult. However, spinal imaging can detect degenerated and deformed vertebrae that may be compressing the spinal cord, causing the motor impairment. Epilepsy and the drugs used to treat it can increase the likelihood of spinal injury by their effects on bone mineral density and neurological function. Spinal instrumentation to treat scoliosis can further increase the risk of spinal injury at the region of transition from instrumented to non-instrumented spine, since this region is under high stress. Doctors should routinely monitor patients with spinal instrumentation who regularly experience seizures in order to detect spinal instability that may lead to spinal cord compression.

## Reference

[Myers, K., Payne, E., Esser, M., Kirton, A., Howard, J. \(2011\). Thoracic myelopathy secondary to seizure following scoliosis surgery. \*Journal of Child Neurology\*, 1-3. Advance online version. doi:10.1177/0883073811426933.](https://doi.org/10.1177/0883073811426933)