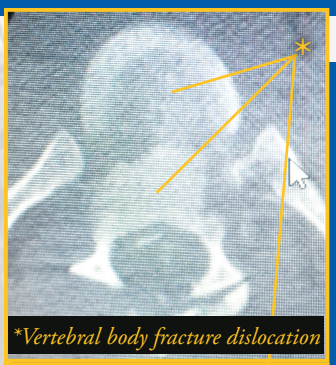
Case Study 3

Motor Vehicle Accident (MVA)

WESTERN SPINE INSTITUTE PLLC
Mark A. Weight, M.D.
(208)523-0303 | www.MarkWeightMD.com
2355 Coronado St. | Idaho Falls, ID 83404

A high energy automobile accident caused the ejection of an unrestrained passenger. The patient was transported by ambulance to the emergency department. The patient was intubated and stabilized and transferred to the ICU. The major injuries sustained were pulmonary contusions with bilateral hemopnueomothoraces and massive trauma to the thoracic spine and spinal cord, with complete loss of sensory and motor function from the abdominal region down through the lower extremities. Imaging studies of the spine revealed a fracture dislocation of the thoracic spine involving the T8-9 segment with transection of the spinal cord.



*Vertebral body fracture dislocation

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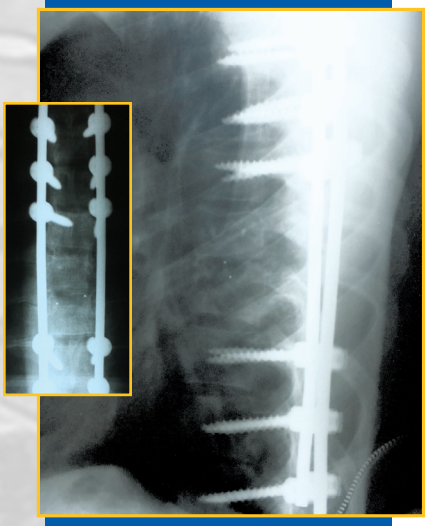

Hospital Course

After four days in the ICU, the patient was stable and cleared for surgery. The patient's fracture dislocation of the thoracic spine was treated with open reduction and internal fixation. Pedicle screw and rod instrumentation were used to stabilize the spine following reduction of the fracture dislocation. A costotransverse approach was utilized to reconstruct the T8-9 disc space with a carbon fiber cage and autogenous bone graft. The thecal sac within the spinal canal was reconstituted with synthetic graft. The patient progressed out of the ICU to the regular floor and then on to specialized paraplegic rehabilitation. With continuted paraplegia, the patient has progressed to regular activities and hobbies and recently married.

Spinal Cord Injury (SCI)

There are an estimated 12,000 new cases of SCI in the United States annually. The mean age is 34 years, with the most frequent age being 19 years and 80% of injuries are males. MVA is the leading cause of SCI, followed by falls, violent injuries, and sports, with diving the most common sport associated with spinal injury.

The paralysis that follows SCI is unfortunately only one aspect of a complex condition – a lifetime of physical care is necessary as a result of SCI. Appropriate management requires specific rehabilitation, mobilization, and self-care. Addressing respiratory dysfunction, autonomic dysreflexia, venous thromboembolism, pressure ulcers, neurogenic pain, neurogenic bowel and bladder, sexual dysfunction, abnormal carbohydrate and lipid metabolism, osteoporosis, and a plethora of other types of morbidity and causes of premature mortality.

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Mark A. Weight, M.D. • Ph: 208-523-0303 • Fx: 208-523-9815

Western Spine Institute · 2355 Coronado St. 8 3 4 0 4
markweightmd.com