

New Case Study Available Detailing a Successful Spine Trauma Case

Case Study: Fracture Reduction and Stabilization of a L1 Burst Fracture in Active 50-Year-Old Male Using Combined Anterior and Posterior Approach

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Background Context: A trauma patient who suffered an acute burst fracture of the thoracolumbar (TL) spine required acute operative stabilization to avoid a progressive deformity and neurological deterioration. Due to the canal compromise and instability, two types of devices were utilized. The treatment plan dictated a combined anterior and posterior operative procedure to correct the deformity associated with the burst fracture and then stabilization of the fractured vertebrae on the anterior aspect of the spinal column. The combined anterior and posterior operations required two instrumentation procedures. Fracture stabilization using the S⁴ Fracture Reduction Instrumentation System and the expandable Hydrolift VBR to stabilize the anterior column.

Conclusion: The patient had complete neurologic function in his lower extremities following the surgery and went on to achieve a successful fusion with his spine restored to normal anatomic alignment. He also had sustained improvement of the back pain he initially presented with.

Materials and Methods

An expandable cage offers surgeons a vertical body reconstructive solution and is used in tandem with the S⁴ Fracture Reduction Instrumentation (FRI) to correct the fracture or deformity. To successfully treat fractures of the vertebral column, absolute control above and below the fracture site is necessary. The Aesculap Spine S⁴ FRI instrumentation affords the ability to correct deformity in alignment while utilizing the mechanical advantage engineered into the system for precise retraction and correction of the fracture. In this procedure, the Hydrolift Vertebral Body Replacement (VBR) System uses hydrostatic pressure to expand. A mechanical lock mechanism maintains the distraction of the vertebral body space.

We present a case in which the Aesculap S⁴ FRI instrumentation was used for reduction of the lytic segmental deformity relating to the L1 burst fracture and the Aesculap Hydrolift VBR was employed within the L1 segment, distal to greater fracture from T12-L2. No complications resulted from the surgery.

History of present illness

A 50-year-old male presented as a trauma patient to the emergency room for a neurological consultation with severe back pain and radiographic evidence of a spine fracture.

He initially presented to the emergency room six weeks earlier after suffering a generalized seizure for the first time and fell hard to the ground on the beach. At that time, he underwent a CT scan of the head. The scan was normal in appearance and there was no evidence of any intracranial mass lesion. He was not started on anti-seizure medication. His past medical history was notably significant for human immunodeficiency virus. He stated that all of his hereditary conditions had been stable on his chronic medication regimen. He was also diagnosed with hypertension.

The patient then experienced a second generalized seizure five days before this visit while he was the restrained passenger in an automobile. He did lose consciousness during the event, but there was no aggressive-type epiphrasms described following this second seizure. However, he now reported a new pattern of significant pain in his upper lumbar region. Upon arrival to the emergency room, he described the pain as intense and fairly constant and aggravated by weight-bearing activity. He denied any perception of numbness, tingling, or focal weakness in his legs or any problems with respect to bladder or bowel control. On physical examination, he was alert and hemodynamically stable. He was found to be normotensive and afebrile. Cervical spine examination did not reveal any focal tenderness. However, thoracolumbar spinal examination noted the presence of focal tenderness to palpation at the thoracolumbar junction on the midline. No other abnormality was noted. On neurologic examination, the patient was found to be alert and oriented. Cranial nerve

deformity and neurological deterioration. The treatment plan dictated a combined anterior and posterior operative procedure to correct the deformity associated with the burst fracture and then stabilize the fractured vertebrae on the anterior aspect of the spinal column. The combined anterior and posterior operations required two instrumentation procedures: Posterior stabilization using the S⁴ FRI System and the expandable Hydrolift VBR to stabilize the anterior column.

The patient had complete neurologic function in his lower extremities following the surgery and went on to achieve a successful fusion with the spine restored to normal anatomic alignment. Sustained improvement of the presenting back pain was also reported. Dr. Coufal said, "The Hydrolift had a continuous expansion that was well controlled using hydrostatic pressure, and it did not limit us to incremental expansion—thereby allowing us to achieve a tension to our distraction that was more physiologically appropriate. The FRI is very powerful instrumentation! It allowed us to precisely manipulate the spine and it optimized correction of deformity particularly in the trauma setting."

Frank J. Coufal, MD, FACS presents a combined anterior and posterior spine trauma case using the Aesculap Hydrolift™ Vertebral Body Replacement System in tandem with the S⁴ Fracture Reduction Instrumentation System.

There are approximately 700,000 clinically diagnosed vertebral fractures each year. To successfully treat fractures of the vertebral column, absolute control above and below the fracture site is necessary. Recently, a new paper was released that presents the case for fracture reduction and stabilization of a L1 burst fracture using a combined anterior and posterior approach. The paper discusses the successful outcome of using the Aesculap Hydrolift™ Vertebral Body Replacement (VBR) System in tandem with the S⁴ Fracture Reduction Instrumentation (FRI) System to correct the fracture or deformity.

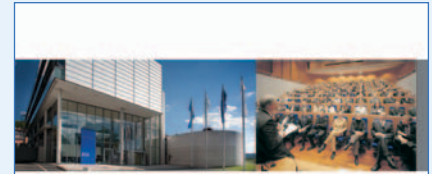
Frank J. Coufal, MD, FACS, founder of La Jolla Neurosurgical Associates, presents a case in which, a trauma patient suffered an acute burst fracture of the thoracolumbar spine and required acute operative stabilization to avoid a progressive

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