

Brown-Séquard Syndrome after a Thoracic Discectomy: A Case Report

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Introduction:

- Thoracic disc surgeries do not constitute a large portion of spine surgeries, however there are a multitude of intraoperative and postoperative complications that can arise. A thoracic discectomy consists of removal of a part or entire herniated disc that impinges on a nerve. An indication for this procedure is when the patient has severe back pain which limits activities of daily living, suffers from intercostal neuralgia, radicular or neurological deficits [1] Thoracic discectomy consist of 0.15 to 4% of all surgical procedures for disc herniation [2]. Spinal cord injuries can occur as a result of disc herniation but it is not common to see Brown-Séquard Syndrome as a result of a thoracic discectomy.

Case Diagnosis:

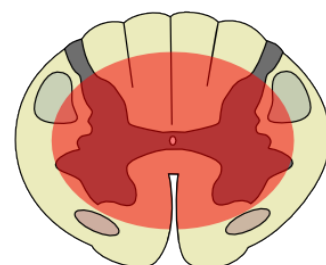
- 45-year-old male with history of chronic back pain who developed worsening pain with MRI demonstrating large calcified T8-T9 disc herniation with spinal cord compression, patient underwent a thoracic discectomy which was complicated with intraoperative loss of motor and sensory signals in the bilateral lower extremities

Case Description:

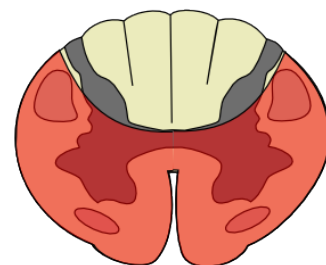
- Patient experienced worsening back pain that was persistent and interfered with ambulation and ADLs. The patient was unable to ambulate for more than thirty minutes without having to rest due to the discomfort. An MRI was obtained demonstrated a large calcified T8-T9 disc herniation with spinal cord compression. After failing conservative therapy, patient underwent T8-T9 thoracic discectomy. Patient had intraoperative loss of motor and sensory signals on neuro-monitoring to bilateral lower extremities. Post operatively, patient was treated with dexamethasone and had a catheter placed for neurogenic bladder. Hospital course complicated with hypotension requiring pressor support.

Incomplete lesions of the spinal cord

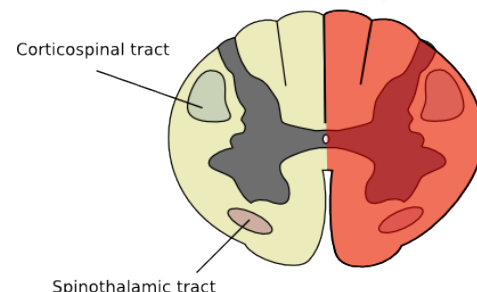
Central Cord Syndrome



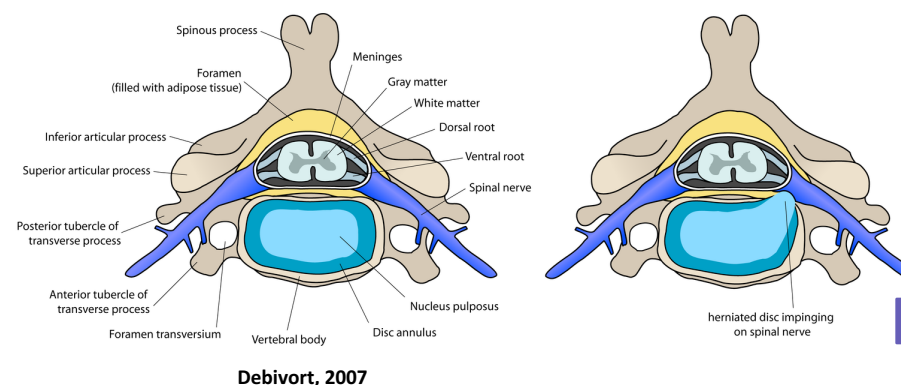
Anterior Cord Syndrome



Brown-Séquard Syndrome

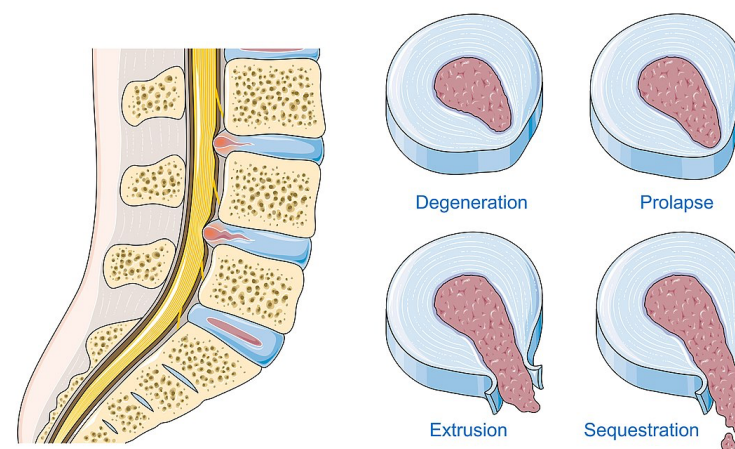


Olson, 2009



Debivort, 2007

Disc herniation



Case Description:

- On discharge to acute rehabilitation, patient had no motor function in the right lower extremity and continued to have sensory deficits. Upon rehabilitation admission, patient was found to have flaccid RLE. LLE strength 3-4/5. Decreased pain/temperature sensation in LLE. Decreased proprioception of RLE. Patient had progressive improvement in tone and muscle strength of the right lower extremity. Therapy focused on functional mobility with gait training, transfers and bed mobility. Patient was trained in donning and doffing of KAFO to RLE and demonstrated ability to ambulate 45 feet with rolling walker. Catheter was discontinued as neurogenic bladder improved. After discharge home, patient followed up with outpatient therapy and continued to have functional improvement.

Discussion:

- Brown-Séquard syndrome is a neurological condition that classically results from the hemisection of the spinal cord as a result of a penetrating injury to the spinal cord [3]. It has been described in cases of post epidural hematoma, abscess, and tumor in the spinal cord. Cases of post-surgical discectomy have been rarely described in literature. This spinal cord injury results in ipsilateral hemiparaplegia and ipsilateral loss of proprioceptive sensation due to the disruption of the corticospinal and ascending dorsal column tracts [4].

Conclusion:

- Brown-Séquard syndrome has shown to have good motor and neurological recovery of the involved levels. Markers of good motor outcome include progressive improvement with hip extension and ankle dorsiflexors. Literature review also shows good outcome and neurogenic bladder recovery as we observe in this case.

References:

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- OlafJanssen: "Disc herniation - Degeneration Prolapse Extrusion Sequestration -- Smart-Servier .jpg" via API upload