

Cauda Equina Syndrome Following Vaginal Delivery: A Case Report

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Background

Cauda equina syndrome (CES) occurs due to compression of the lumbar and sacral nerve roots, resulting in impaired function. Lumbar disc herniation is a rare occurrence during pregnancy. Among these cases, only a small percentage progress to CES. Common symptoms include lower back pain, unilateral or bilateral radicular pain, lower limb weakness, saddle anesthesia, and bowel and/or bladder dysfunction. Because common symptoms of CES can resemble those commonly experienced during pregnancy and postpartum, there is a risk of misdiagnosis and delayed treatment. However, prompt recognition is crucial, as delayed diagnosis and decompression increase the risk of permanent complications.

This report describes a case the importance of performing MRI in postpartum patients presenting with urinary dysfunction and neurological symptoms to promptly identify CES.

Case report

A 33-year-old woman (para 0-0-0-0) delivered at 40 weeks of gestation via spontaneous vaginal delivery. Following delivery, she experienced mild muscle pain in her right thigh but had no other significant symptoms and was discharged the next day in stable condition. Ten days postpartum, she returned to the hospital for a routine check-up. She described difficulty voiding after discharge and had been relying on Credé's maneuver to initiate urination. A Foley catheter was inserted, draining 1,000 mL of urine, and a physical examination revealed decreased anal sphincter tone and sensory loss in the right thigh, perianal area, heel, and the fourth and fifth toes, as well as weakness in the right plantar flexion, graded as 3 out of 5. EMG and NCS were performed and revealed findings consistent with CES. MRI of the lumbosacral spine demonstrated a large herniated disc at the L5-S1 level, causing significant compression of the S1 nerve root (Figure 1). The patient underwent decompressive laminectomy and discectomy and a large extruded disc fragment was identified and successfully removed. (Figure 2)

During the first week postoperatively, the patient experienced slight improvement in perianal sensation and anal sphincter tone; however, full recovery was not achieved, and her urinary and bowel dysfunction remained unresolved. At 14 weeks postoperatively, she regained the ability to void independently, though her post-void residual volume remained elevated at approximately 400mL. Right plantar flexion strength improved, graded as 4 out of 5 and she was able to achieve independent gait.

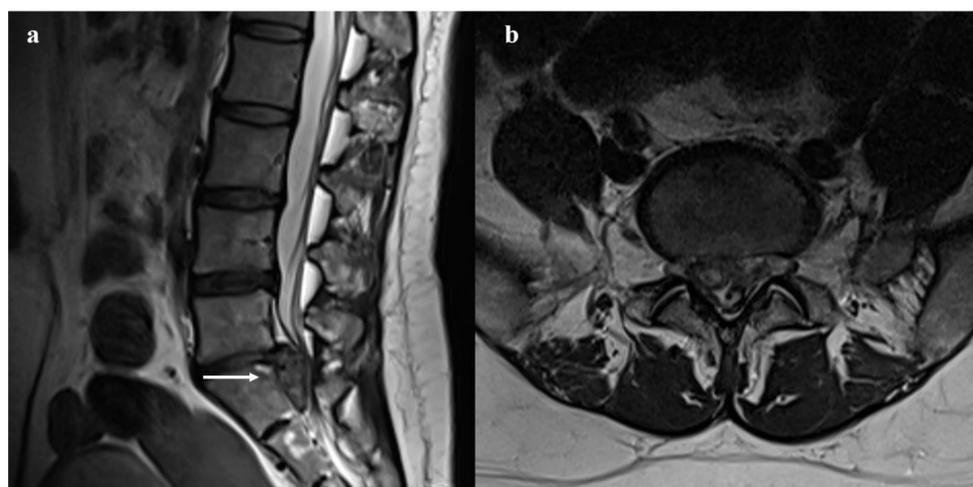


Figure 1. (a) Sagittal T2-weighted magnetic resonance image demonstrating L5/S1 vertebral disc prolapse compressing the cauda equina. (b) Axial image demonstrating central compression of the cauda equina at S1.



Figure 2. Main disc masses removed from S1

Key clinical lessons

1. Postpartum urinary retention with saddle anesthesia warrants early consideration of CES, even in the absence of motor deficits.
2. Early EMG/NCS and MRI may facilitate timely diagnosis and treatment, potentially improving outcomes.
3. Long-term rehabilitation with focus on bladder and bowel management is crucial for functional recovery.
4. A multidisciplinary approach involving obstetrics, neurosurgery, and rehabilitation medicine is essential for comprehensive management of postpartum CES.