



Rare Obstetrical Complication of Lower Extremity Nerve Injury and Paresthesia in an L5 Dermatomal Distribution

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Introduction

This case highlights a rare, pregnancy-related neuropathy primarily driven by biomechanical changes, including an anterior shift in the center of mass and maternal weight gain. These factors increase strain on the lumbar spine and may contribute to nerve root irritation and intervertebral disc herniation. Such stress on the lumbar spine, particularly in the lower lumbar region, predisposes to radicular symptoms.

Besides herniation of lumbar discs, although uncommon, lower extremity nerve injuries—such as common fibular neuropathy—are important considerations to consider in the differential diagnosis of peripartum neurologic complaints. These injuries may present with symptoms during pregnancy and persist well into the postpartum period.

Obstetric neuropathies may arise from various etiologies including:

- Lumbar radiculopathy
- Lumbosacral plexopathy

- Compression of peripheral nerves
- Iatrogenic injury, such as compression of the common fibular nerve from lithotomy positioning during delivery

These neuropathies can present with a range of symptoms: paresthesia, hypoesthesia, numbness, weakness, muscle atrophy, and diminished or absent deep tendon reflexes. Timely recognition is crucial to reduce the risk of long-term morbidity.

Case Presentation

A 36-year-old primigravida female presented with burning pain and paresthesia extending from the knees to the bilateral feet. She had minimal back pain. Symptoms began during the third month of pregnancy and persisted for more than one year postpartum.

The Patient Described:

- Bilateral paresthesia and diminished sensation starting below the knees radiating to lateral leg and foot.
- Discomfort localized to an L5 dermatomal

distribution, including the plantar surfaces of both feet

- Burning, uncomfortable sensation with no associated motor weakness or foot drop

She declined the use of gabapentin due to breastfeeding but was advised to apply topical capsaicin cream for symptom relief. Further evaluation included a lumbar MRI, which revealed an L5 disc herniation. Electromyography and nerve conduction studies (EMG/NCS) were recommended but not completed due to the patient's decision not to proceed.

Physical therapy with a focus on core strengthening was initiated postpartum. One year later, the patient reported significant symptomatic improvement with conservative management alone.

Discussion

Lower extremity nerve injuries during pregnancy and delivery may result from:

- Biomechanical changes: anterior shift in center of gravity, lumbar hyperlordosis
- Maternal weight gain
- Hormonal effects (e.g., relaxin-induced ligamentous laxity)
- Maternal positioning (e.g., prolonged dorso-lithotomy during labor)
- Prolonged labor or operative delivery
- Fetal factors such as positioning and size

Disc herniation, particularly at L4–L5, may compress the L5 nerve root, producing a characteristic radicular syndrome including burning pain and paresthesia in the L5 distribution. The involvement of

the plantar surface in this case supports L5 radiculopathy or possible lumbosacral plexopathy, although EMG/NCS would have been valuable for further localization.

Lumbosacral plexopathy is a rare but possible postpartum complication, potentially resulting from fetal head compression of the lumbosacral trunk. While more commonly affecting L5, it may also involve L2–L4 roots, simulating femoral or obturator neuropathy.

The absence of motor deficits in this patient is noteworthy and consistent with isolated sensory radiculopathy. Conservative management, including physical therapy and topical analgesia, proved effective over time.

Conclusion

This case underscores a rare but significant obstetric complication: L5 disc herniation with sensory neuropathy in a primigravida patient. The estimated incidence of obstetric-related nerve injuries is <0.92%.

Key takeaways from this case is to recognize risk factors for these symptoms, such as excessive maternal weight gain, macrosomia, prolonged labor, and improper labor positioning during delivery.

Early neurological assessment and imaging are critical for diagnosis.

Conservative management, including physical therapy and pain modulation, can lead to symptom resolution and prevent long-term disability. Proactive multidisciplinary care involving obstetrics, neurology, and physical therapy is vital for optimizing outcomes in similar cases.