Bladder Dysfunction in Transverse Myelitis: A Case Report

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Introduction

Transverse myelitis is a rare neurological disorder characterized by inflammation of the spinal cord, leading to motor, sensory, and autonomic dysfunction, including urinary dysfunction. The inflammatory process disrupts neural transmission, significantly affecting mobility and bladder control. Neurogenic bladder dysfunction is a well-recognized complication of transverse myelitis, manifesting as urinary retention, urgency, frequency, incontinence, or detrusor sphincter dyssynergia (DSD). These symptoms require early diagnosis and a multidisciplinary approach to prevent complications and optimize patient outcomes.

Objective

This case highlights a rare presentation of transverse myelitis with persistent urinary dysfunction and emphasizes the importance of multidisciplinary management.

Case Report

A 19-year-old single female presented to our urogynecology clinic for evaluation of dysfunctional voiding symptoms, which had persisted for 1.5 years. Her symptoms began after she was diagnosed with transverse myelitis, which initially manifested as acute quadriparesis associated with fecal and urinary incontinence. Neurological evaluation, including MRI, revealed demyelination of the cervical spinal cord, extending from the craniocervical junction to the C4 level. Lumbar puncture and blood tests were within normal limits. Her only significant history was receiving a COVID-19 vaccination two months prior to symptom onset. She was initially admitted to the intensive care unit (ICU) and managed supportively with high-dose corticosteroids. Following extensive rehabilitation, her mobility improved, and she is now able to walk with a walking cane. At her urogynecology clinic visit, she reported urinary urgency, incomplete emptying, and stress urinary incontinence. Urodynamic evaluation suggested residual neurogenic bladder dysfunction with detrusor sphincter dyssynergia (DSD) and stress urinary incontinence.

She was initially treated with solifenacin, but the response was minimal. She later underwent intravesical botulinum toxin injections, which provided no significant benefit. Due to persistent urinary dysfunction, she subsequently underwent sacral neuromodulation (SNS) for 3 weeks which also yielded minimal improvement. Currently, she performs regular clean intermittent self-catheterization (CISC) and is scheduled for a urodynamic study to assess bladder pressures and guide further management.

Discussion

Urinary dysfunction is a common consequence of transverse myelitis, resulting from spinal cord inflammation affecting bladder control pathways. The severity of motor deficits in transverse myelitis often correlates with the extent of bladder dysfunction. Depending on the level and severity of the lesion, patients may develop neurogenic bladder, presenting with urinary retention, urgency, frequency, incontinence, or detrusor sphincter dyssynergia. The natural progression of bladder recovery in transverse myelitis typically mirrors improvements in lower limb function.
However, approximately 20% of patients experience persistent bladder dysfunction alongside residual motor impairment.

Conclusion

This case highlights the complex interplay between transverse myelitis and urinary dysfunction, emphasizing the need for multidisciplinary management. Early and accurate diagnosis, coupled with appropriate urodynamic studies, pharmacotherapy, bladder management strategies, and rehabilitation, can significantly improve patient outcomes and quality of life. Regular follow-up and individualized treatment plans are essential in preventing complications such as recurrent UTIs, hydronephrosis, and upper urinary tract damage. Further research is needed to explore optimal treatment strategies for neurogenic bladder dysfunction in transverse myelitis patients.

References:
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