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Cervical Non-Surgical Spinal Decompression for Disc Herniation in a Patient with Multiple Sclerosis: A Case Study Using the DRX9000C

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Abstract

Introduction: Cervical disc herniation (CDH) can produce severe radiculopathy and functional impairment, and management becomes more complex when neurological comorbidities such as multiple sclerosis (MS) are present. This case study reports on a 35-year-old female with CDH at C5–C6 with a concurrent demyelinating MS lesion at the same level, who presented with debilitating cervical pain, marked left upper-extremity weakness (3/5 strength), sensory loss, absent reflexes, and significant activity limitations.

Methods: Non-surgical spinal decompression using the DRX9000C was selected to avoid elevated surgical risk and potential MS exacerbation. The patient completed 20 decompression sessions over 15 weeks, using robotically controlled intermittent traction targeted at C5–C6.

Results: By the fifth treatment, she reported full resolution of pain and complete return to activities of daily living. Post-treatment examination demonstrated restored strength (5/5), normalized sensation, and symmetrical reflexes, with the Neck Disability Index improving from 36/50 to 1/50. MRI revealed reductions in lesion size (AP length decreased 1.67 mm; SI length decreased 1.27 mm), increased spinal canal diameter (+3.15 mm), and increased left foraminal space (+0.81 mm). At 1-year follow-up, neurological function remained normal, Neck Disability Index measured 0/50, and imaging showed sustained or continued improvements without recurrence of symptoms or worsening of MS.

Conclusion: This case highlights the longitudinal effects, as well as the potential benefits and safety, of targeted cervical non-surgical spinal decompression using the DRX9000C for CDH in the presence of MS. Findings support its role as a viable non-surgical intervention for CDH.

Keywords: Cervical disc lesion, Traction, Non-surgical spinal decompression, Neck pain, Cervical intervertebral disc, Conservative therapy, Case study

Introduction

Cervical disc herniation (CDH) is a clinically significant spinal disorder, most commonly affecting individuals between the ages of 30 and 50 [1,2]. While both sexes are affected, epidemiological data suggest a higher prevalence among females, accounting for approximately 60% of cases [1], in contrast to lumbar disc herniation which shows a male predominance with a 2:1 male-to-female ratio [3]. The clinical presentation of CDH varies depending on the location and degree of neural compression, with severe cases manifesting as debilitating cervical and upper thoracic pain, radiculopathy, and functional impairment of the ipsilateral upper extremity [1,2].

Although surgical intervention such as anterior cervical discectomy and fusion (ACDF) remains a common recommendation for symptomatic patients, it carries risks of neurological injury, infection, and adjacent segment degeneration [4,5]. In patients with comorbid neurological conditions, particularly MS, surgical risk may be further compounded. MS is a chronic autoimmune demyelinating