A CASE STUDY OF CERVICAL DISC DISORDER WITH MYELOPATHY LEVEL C5-C6 AND C6 –C7 DISC PROLAPSE AND STENOSIS

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ABSTRACT

There is currently evidence to determine which recent neurological treatment and conservative medicine , however the patient benefits from multiple –treatment approach . The purpose of this case to describe cervical myelopathy management of a patient suffered with different painful sign and symptoms . The diagnosis based on the patient symptoms as well as more criteria of the clinical prediction rules ,which used identify patient with cervical myelopathy

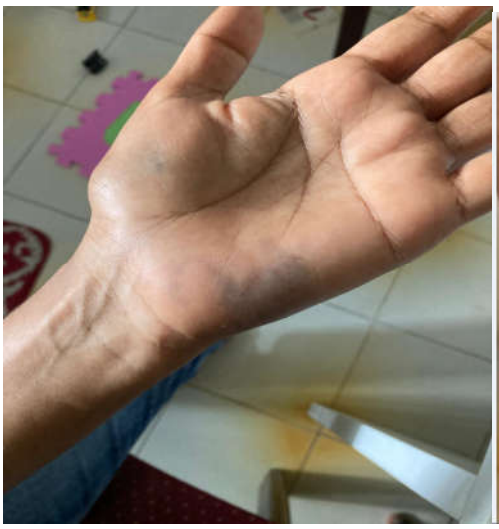
Results from the examination and evaluvation were consistent with MRI images findings under medical treatments , precausions . Patient pain imporved 9/10 to 0/10 and following multi-treatment approach that included patient medical education and precausion ,this patient patient with cervical myelopathy experienced decreased pain and burning sensation of sole and was able to return near normal life and prior level of body function .

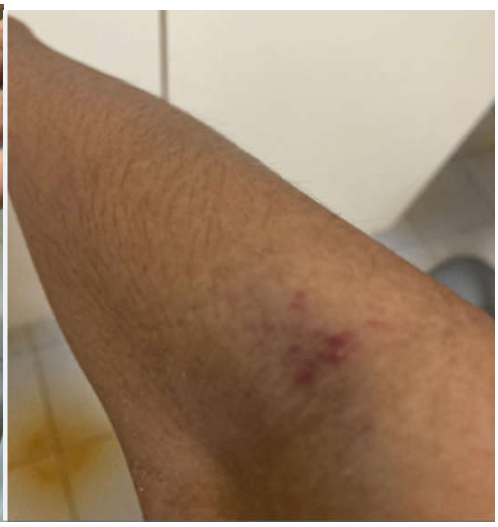
KEY WORDS

Cervical myelopathy , Neurological treatment , burning sensation sole .MRI scan

PATIENT DISCRIPTION

Photo





INTRODUCTION

A 38-year-old woman presented on 1 November 2021 with sudden onset neck pain associated with numbness of the limbs following recent COVID-19 vaccination. The patient subsequently developed progressive neurological symptoms. Clinical examination revealed that the patient was alert and conscious, with motor power graded as 4+ in the right lower limb involving both proximal and distal muscle groups. Patchy sensory loss was noted over the right lower limb and thoracic region. Neurological examination demonstrated hyperreflexia (3+) and mildly increased muscle tone on the right side.

Magnetic resonance imaging (MRI) of the brain was unremarkable, while MRI of the cervical spine demonstrated myelopathic features suggestive of cervical cord involvement. Routine blood investigations were unremarkable. The patient was initiated on dexamethasone therapy at a dosage of 4 mg twice daily and was referred to a neurospine specialist due to evidence of spinal cord compression. Based on the clinical and radiological findings, the provisional impression was cervical myelopathy.

In the international literature MRI magnetic resonance imaging based population studies have revealed that more than 85% of adult aged and above 60yrs severe degenerative of least one cervical level myelopathy [1]

Etiopathogenesis multi-factoral static factors like congenital cervical spine stenosis , Disc protrusion,Vertebral deformity , Osteophytes , Hypertrophy ligamentum flavum and ossification of posterior longitudinal ligaments causing spinal cord compression along dynamic force such as hypermobility of the spinal cord level repetitive trauma [1]

Cervical myelopathy can causes by the veretebral ossification hard and thickening surrounding the ligaments of cervical veretebra along spinal cord . Such as posterior longitudinal ligaments flavum . most common ligaments ossified in posterior longitudinal ligaments including spinal stenosis a narrowing of the veretebral body passage of the spine through spinal cord .

Cervical myelopathy occurs when you have compression in the cervical spine , most common myelopathy including spinal stenosis narrow space with spinal column . The case study of patient compliance pain neck and back , Difficult with fine motor skills , Balance and co-ordination issues , Changes of reflexes in her upper and lower extremities , Loss of bladder and bowl control .Cervical myelopathy occur sudden injury or infection wear and tear degenerative spinal condition of spondylosis . Most common Nutritional deficient myelopathy B_{12} deficiency . Numeric pain- rating scale and he had intermittent non -dermatomal Bilateral upper extremity paresthesia and a neck disability index score of 34%[2] An epidemiologic studt was performed an intensive study of 2100 patients with ossification of posterior longitudinal ligaments in japan [3]

PHYSICAL EXAMINATION OF THE CASE STUDY PATIENT

The patient underwent a comprehensive neurological and musculoskeletal examination. Persistent and constant pain was reported throughout the assessment. Clinical evaluation revealed a positive Lhermitte's sign, characterized by an electric shock–like sensation radiating along the spine during neck flexion, suggestive of cervical spinal cord involvement. The distraction test produced symptomatic relief, indicating possible cervical nerve root compression. A positive Spurling's test further supported cervical radiculopathy, as neck extension and lateral rotation reproduced radiating pain symptoms.

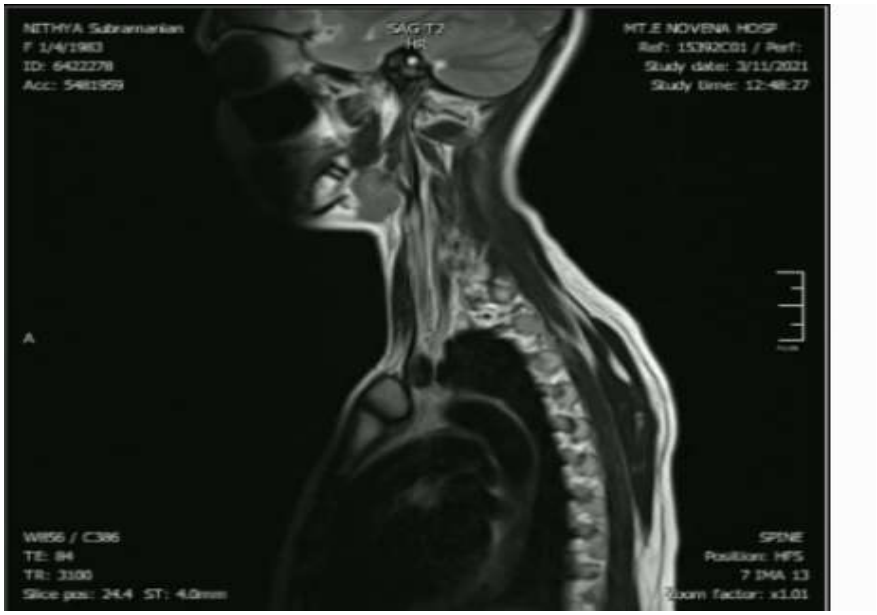
Neurological examination demonstrated upper motor neuron involvement. A positive Babinski reflex was elicited bilaterally, indicating corticospinal tract dysfunction. Hoffman's test was also positive, suggestive of cervical myelopathy. Deep tendon reflex examination revealed hyperreflexia of the biceps and Achilles tendons, further confirming exaggerated reflex activity associated with upper motor neuron lesions. Overall, the physical examination findings were consistent with cervical cord compression and associated myelopathic features.

MRI Technique

Pre- and post-contrast multisequence MRI of the whole spine was performed according to the standard departmental protocol. Intravenous administration of Gadovist was used for contrast enhancement. No immediate adverse effects or complications were observed following contrast administration.

Diagnosis

Based on detailed clinical examination and radiological as well as neurological investigations, the patient was diagnosed with cervical radiculopathy associated with C5–C6 intervertebral disc protrusion and small fiber neuropathy. The clinical findings, including positive Lhermitte's sign, Spurling's test, Hoffman's sign, Babinski reflex, and hyperreflexia, were suggestive of cervical spinal cord and nerve root involvement. Imaging studies confirmed disc protrusion at the C5–C6 level, contributing to nerve compression. Additionally, the patient exhibited symptoms consistent with small fiber neuropathy, characterized by chronic pain and sensory disturbances.



FINDINGS

Discs

The lower cervical intervertebral discs and T3–T4 disc demonstrated reduced T2 signal intensity with loss of disc height at the C5–C6 and C6–C7 levels. No annular fissure or annular tear was identified.

At the C5–C6 level, a broad-based central to right paracentral disc protrusion was noted, causing moderate to severe central spinal canal stenosis and right lateral recess stenosis. Both neural foramina were relatively preserved.

At the C6–C7 level, a smaller central to right paracentral disc protrusion was observed, producing mild right lateral recess stenosis, while both neural foramina remained preserved. No additional focal disc protrusion or diffuse disc bulge was identified at other spinal levels.

Spinal Alignment

Spinal alignment was preserved with no evidence of spondylolisthesis.

Vertebral Bodies and Marrow Signal

Vertebral body heights were maintained. Marrow signal intensity was preserved except for mild Modic type I endplate marrow signal changes adjacent to the C6–C7 disc space.

Posterior Fossa and Craniocervical Junction

The posterior fossa and craniocervical junction appeared normal with no evidence of cerebellar ectopia.

Spinal Cord

The spinal cord demonstrated normal configuration and signal intensity without abnormal enhancement. The conus medullaris terminated normally at the T12–L1 level.

Additional Findings

No intraspinal or paraspinal mass lesion was detected. Mild lower thoracic degenerative facet arthropathy with mild buckling of the ligamentum flavum was observed bilaterally, particularly at the T10–T11 level, without significant lateral recess or spinal canal stenosis.

The MRI study was electronically reported and approved by Dr. Tan How Ming on 3 November 2021 at 3:00 PM.

Laboratory and Clinical Investigations

Comprehensive investigations were performed, including clinical molecular studies, renal/kidney profile, liver profile, coagulation profile, urinalysis, special protein studies, thyroid function studies, miscellaneous immunology investigations, hematology, and serology analyses.

Discharge Details

Medical Certificate No.: PNH-2021-022042
Hospitalization Period: 01 November 2021 to 11 November 2021

At discharge, the patient was prescribed dexamethasone tablets administered orally at a dosage of 4 mg twice daily for five days.

Follow-Up Evaluation

One month later, the patient presented with complaints of low back ache for two days along with twitching sensations over the trunk and abdomen. Further treatment and neurological evaluation were carried out at MIOT International under the care of Dr. K. Subramaniyan.

On examination, the patient was conscious, oriented, and exhibited full extraocular movements. Motor power was normal, deep tendon reflexes were present, and Romberg's test was negative.

Conclusion

MRI findings revealed a C5–C6 cervical disc protrusion causing moderate to severe spinal canal stenosis at the C5–C6 level, along with mild spinal canal stenosis at the C6–C7 level. No significant neural foraminal stenosis was identified at either level. No additional levels of

degenerative disc disease or significant degenerative facet arthropathy were observed within the cervical or lumbar spine. Mild lower thoracic spondylosis with degenerative facet arthropathy was noted; however, this was not associated with significant spinal canal or neural foraminal stenosis. The craniocervical junction and spinal cord demonstrated normal appearance without abnormal enhancement, signal alteration, or cord edema.

The exact etiology of the patient's condition remains unclear. However, clinical and radiological findings demonstrated a generalized hyperostotic tendency associated with cervical disc pathology and neurological manifestations. The patient had no significant past medical or family history of similar neurological or musculoskeletal disorders. Notably, the onset of symptoms was reported following administration of a COVID-19 vaccination, which was considered a preceding event in the clinical timeline. Further studies are required to better understand the possible association and underlying pathophysiological mechanisms.

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