

## REHABILITATION OUTCOME OF SUBACUTE COMBINED DEGENERATION – A CASE REPORT

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### Abstract

**Background :** Progressive degenerative condition of the spinal cord, due to vitamin B12 deficiency, is known as Subacute Combined Degeneration (SCD). SCD usually affects people older than 40. Frequently, it is due to the body's inability to absorb vitamin B12 and rarely due to dietary deficiency. The faster rate of nerve signal transmission is mainly due to a fatty layer known as Myelin sheath, that surrounds nerves. The formation and maintenance of this fatty sheath requires vitamin B12. Damage to this myelin sheath in SCD, cause sensory and motor nerve fibres from the spinal cord to degenerate. Damage to brain, nerves of the eyes, and peripheral nerves are also not uncommon.

**Conclusion :** The Physiotherapy interventions aimed at Rehabilitation and Restoration of a healthy lifestyle had a good result as anticipated.

**Keywords :** Physiotherapy, Subacute Combined Degeneration (SCD), Vitamin B12 replacement.

### INTRODUCTION

Subacute combined degeneration (SCD) is a medical condition resulting from cobalamin deficiency. SCD is a posterolateral demyelination syndrome that manifests as rapidly progressive myelopathy with neurological deficits. Common presentations include progressive vibratory and proprioceptive abnormalities like ascending paraesthesia, gait ataxia, hyper or hyporeflexia. Motor weakness and bowel/bladder abnormalities occur infrequently.

### CASE STUDY

A 34 years male with no comorbidities, non Alcoholic and vegetarian diet had difficulty in walking for 1month and pain while walking. He also gave a history of numbness of bilateral lower limbs which was gradual in onset and progressive in nature.

### CLINICAL FINDINGS



Figure 1 : Clinical Findings

### NEUROLOGICAL ASSESSMENT

Normal mental status

Extra Ocular Muscles - Full No nystagmus

Muscle power 5/5 in both upper limbs

Muscle power 3/5 in both lower limbs

Stance ataxia

Wide based gait

Sensation- Fine touch and pin prick bilaterally decreased below hip

Bilateral loss of joint position and vibration sense

Deep Tendon Reflexes : Upper Limb – Normal (++) Lower limb – (+++) Bilaterally

Plantar – Bilateral Flexors

Positive Romberg's sign

Tinetti Balance Assessment tool improved from 21/28 to 28/28.

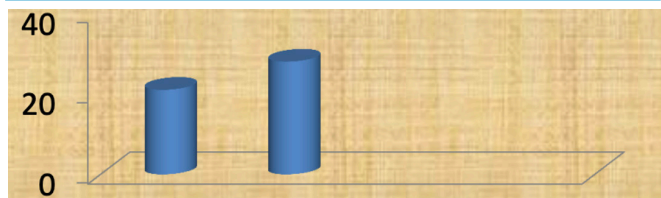


Figure 2 : Tinetti Balance Assessment tool



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## INVESTIGATIONS

Vitamin B12 - Improved from 112 pg/ml to 256 pg/ml (187-883 pg/ml)

Folic Acid - 598.1ng/ml (280-791 ng/ml)

Homocystine – 12.14  $\mu\text{mol/L}$  (5.9-16  $\mu\text{mol/L}$ )

NCS Lower limb - Sensory Neuropathy of lower limbs

Peripheral smear – Macrocytic Anaemia

MRI Brain with whole Spine Screening – **Symmetrical hyperintensity in dorsal cord from D3-D12 level predominantly involving the posterior column** (? Subacute combined degeneration of the cord)



Figure 3 : MRI Dorsal Spine



Figure 4 : Follow up

## TREATMENT GIVEN

Inj. Cyanocobalamin 1000 mcg intramuscularly on alternate days for 4 weeks was given. He was also on T. Folvite 5 mg, once daily, PO. He was provided with Intensive Neuro Rehabilitation Therapy, Gait training, Proprioceptive Neuromuscular facilitation, Sensory and motor re-education and Strengthening exercise

## RESULTS

The patient regained muscle power from 3/5 to 5/5 in both

lower limbs, regained full sensory perception in both lower limbs and achieved normal gait pattern.

## DISCUSSION

The challenges in the treatment were Positive Romberg's sign with Ataxia and MRI showing Lesion involving > 7 segments. In such cases only 14% Recover completely. However, due to early initiation of rehabilitation and management led to a good recovery.

## CONCLUSION

The extent of neurological damage can be minimized by early initiation of and tailoring rehabilitation program to the patient's functional needs. Early intensive rehabilitation facilitates complete recovery.

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