

Subacute combined degeneration with vitamin E deficiency cause spinocerebellar ataxia: Case report

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Subacute combined degeneration(SCD) is degeneration of posterior and lateral columns, which may include limb numbness, weakness, and gait disturbance. It is usually caused by vitamin B12 deficiency, but it is rarely caused by vitamin E deficiency. We present a rare case of SCD with vitamin E deficiency associated with severe malabsorption. A 50-year-old woman had adhesive intestinal obstruction in China and underwent surgical treatment such as adhesiolysis and small intestinal suture 4 months ago. After surgery, decreased consciousness and fever continued, therefore intensive treatment was performed. Although consciousness level was recovered to alert, ataxia, limb weakness and dysarthria occurred, Resulting in bed-ridden state for 5 weeks. She came to Korea and was admitted to our hospital for curing the unknown disease 3 months ago. At the physical examination, cranial nerves were intact. Ocular movement, hearing, tongue movements were normal. Facial sensation and symmetry were intact but severe dysarthria was observed. Muscle strength of bilateral upper extremities was MRC grade 2/5 in proximal and 3/5 in distal muscles and bilateral lower extremities was 2/5 in both proximal and distal muscles. Both upper extremities were hyperreflexic, but both lower extremities were areflexic and seemed decreased proprioception. Cerebellar examination showed bilateral positive findings in finger-to-nose testing and alternative rapid movements. Bilateral limb and truncal ataxia were observed. Whole spine MRI showed T2 high signal in bilateral posterior and lateral horn of spinal cord at the C5 level. <figure1> Nerve conduction studies showed lower extremities dominant sensorimotor polyneuropathy and delayed P40 latency in somatosensory evoked potentials, suggesting cervical myelopathy. BMI was 14.45 kg/m² and severe malabsorption could be suspected. Laboratory tests revealed serum vitamin B of 649mg/dl (normal: 197~771) and vitamin E of 3.7mg/dl (normal: 5.0~20.0mg/dl). Finally, it was diagnosed to SCD associated with vitamin E deficiency. She underwent a 400mg vitamin E capsule 3 times a day, followed by physical and occupational therapy. The vitamin E level improved to 17.34mg/dl on follow up 3 weeks later. Functional level was improved and moderate assisted walker gait was possible. This case was diagnosed as SCD associated with vitamin E deficiency. The Chinese doctors did not find the cause for 5 weeks and she was improved with vitamins E supplementation and rehabilitation. Early diagnosis could have been possible if the micronutrient level, including vitamin E, was examined early in the symptoms. It is important because prompt replacement can stop disease progression and improve cerebellar syndrome. In Conclusion, patient with tetraplegia who do not know the cause need appropriate imaging test and if the cause is due to SCD, it is necessary to detect the deficiency of micronutrients like vitamin B12 and E.

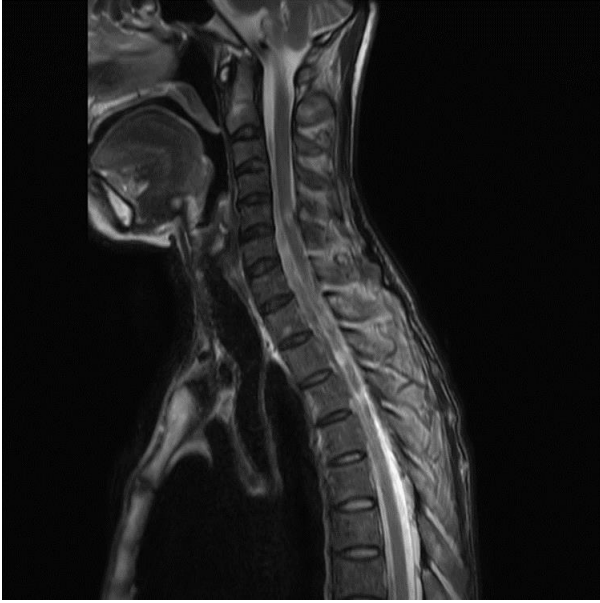


Fig 1. Whole spine MRI - T2 high signal in bilateral posterior and lateral horn of spinal cord, C5 level.

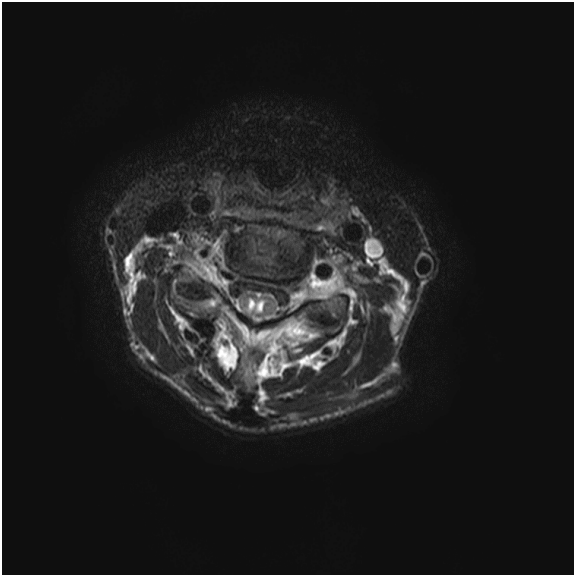


Fig 2. Whole spine MRI - T2 high signal in bilateral posterior and lateral horn of spinal cord, C5 level.