

## Multi-Disciplinary Rehabilitation in Osmotic Demyelination Syndrome: A Case Report

**Authors :** Wei Qu, Cassandra Agius, Nikki Varvazovsky, Angela Meade

**Abstract :** The goals of the case study are to address the importance of early diagnosis of osmotic demyelination syndrome (ODS) and to analyse the types, duration, and intensities of the rehabilitation program to promote neurological and functional recovery. It can be associated with biphasic course of disease and severe neurological and neuropsychiatric symptoms. Although a few treatment modalities, such as plasmapheresis, immunoglobulin therapy, steroid, and thyrotrophin-releasing hormone, have been suggested, there is no effective treatment for ODS. The overall prognosis of established ODS is generally poor. A high proportion of patients have a severe permanent disability, which has led to social, economic, and emotional burdens to carers and societies. In this case, a 69-year-old retired pensioner with chronic alcoholism was admitted to the hospital with a reduced level of consciousness and tonic-clonic seizure. He had severe hyponatraemia (serum sodium 118 mmol/L) and hypokalemia (serum potassium 2.8 mmol/L). He was treated with anticonvulsants, 150ml 3% hypertonic saline over one hour, and 40 mmol potassium chloride over one hour, and his sodium was increased by 11 mmol/L in the first 24 hours. However, he had worsened neurological symptoms with quadriplegia, dysphagia, anarthria, and confusion, and the radiological features suggested the diagnosis of ODS. He had minimal neurological recovery during the first four weeks of hospital admission. He was treated with seven weeks of a multi-disciplinary intensive rehabilitation program. On discharge, he had made a significant cognitive and functional recovery and could mobilize independently without a walking aid. In conclusion, ODS can still occur despite correcting sodium following the current clinical guidelines. Patients with severe neurological deficits in the context of osmotic demyelination syndrome would benefit from intensive rehabilitation to facilitate their functional improvement and to promote their quality of life.

**Keywords :** osmotic demyelination syndrome, hyponatremia, central pontine and extrapontine myelinolysis, rehabilitation

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