A 62-year-old man with a history of heavy alcohol abuse was admitted to our hospital with chronic diarrhoea, confusion, and weakness in both legs. Initial physical examination showed marked cachexia and decreased strength in both lower limbs. His sensation was intact. Laboratory testing showed several electrolyte abnormalities—presumed to be due to his diarrhoea—including hyponatraemia (130 mmol/L); this was gradually corrected over the course of 4 days, using 0·9% sodium chloride. At the end of this period, the sodium was 140 mmol/L (normal range 135–145 mmol/L). Over the next few days, he continued to be encephalopathic and eventually lost motor function of his arms and legs; his pupils continued to be reactive to light and the function of his extraocular muscles remained intact. An MRI scan of his brain showed restricted diffusion and fluid-attenuated inversion recovery (FLAIR) showed a corresponding abnormality in the central pons that was consistent with a diagnosis of central pontine demyelination (figure). Sadly, the patient died in the intensive care unit after his family decided to pursue palliative care.

Osmotic demyelination syndrome—also known as central pontine myelinolysis or extrapontine myelinolysis—usually occurs after rapid correction of sodium abnormalities, although it might be seen secondary to chronic alcohol use, other severe electrolyte disturbances, and malnutrition. According to one theory, the lack of sufficient energy in malnourished patients leads to suboptimal functioning of the Na+/K+ATPase pump, which subsequently results in imbalances in sodium homeostasis in the brain. A high degree of clinical suspicion that it is likely to occur in patients with chronic alcohol use and those who are malnourished might help to prevent the development of osmotic demyelination syndrome. Treatment is usually just supportive management. However, there have been some case reports of successful treatment with plasma exchange, methylprednisone, and immunoglobulins. MRI usually confirms the diagnosis, and the FLAIR sequence is used to suppress the effects of cerebrospinal fluid on the image—this is especially helpful in showing subtle changes at the periphery of the cerebral hemispheres and in the periventricular region.

**Contributors**

We all treated and provided care for the patient. We all devised and wrote the report. Written consent for publication was obtained from the patient’s spouse.

© 2018 Elsevier Ltd. All rights reserved.