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Challenging Case of Hypertensive Encephalopathy with atypical MRI findings: Prolonged Hospital Stay and Multiple Intubations

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Dear Editor,

Hypertensive encephalopathy (HE) is a rare yet life-threatening condition associated with acute hypertension. It presents with various neurological symptoms, including encephalopathy, seizures, headache, visual disturbances, and focal neurological deficits. Neuroimaging, particularly MRI with diffusion-weighted imaging, is crucial for accurate diagnosis, differentiating it from stroke, a common alternative diagnosis[1]. ADEM (acute demyelinating encephalomyelitis) and cerebral vasculitis were also considered close differentials based on MRI findings. ADEM requires long-term immunosuppression for remission, while vasculitis may have relapses without proper ongoing therapy[3]. HE is often linked to uncontrolled primary hypertension and other secondary factors contributing to high blood pressure. It can also be associated with conditions like Posterior Reversible Leukoencephalopathy Syndrome (PRES), Hypertensive Brainstem Encephalopathy, and preeclampsia/eclampsia[2]. The management of HE involves a multidisciplinary approach, typically in an ICU setting. Intensivists lead the care, with input from specialists such as neurologists, cardiologists, radiologists, and others as needed. A comprehensive hospital-based team includes various professionals, including nurses, physiotherapists, occupational therapists, dietitians, speech and language therapists, social workers, pharmacists, and attending physicians[4]. This collaborative effort is crucial for effectively treating HE and addressing its complex nature. Here we describe a case of hypertensive encephalopathy in an alcoholic patient with atypical findings on the MRI.

A patient in his 40s was brought to the emergency department with agitation and confusion. His blood pressure on admission was 215/100. He has a background history of alcohol excess and pulmonary hypertension. His blood pressure was treated with IV Labetalol. He developed generalized seizures in the ED and the GCS was dropped to 7/15. He was intubated by the anesthetic team and moved to the ICU. The initial CT brain showed no significant findings but the MRI brain showed multiple hyperintensities indicating demyelination disease. These findings didn't correlate with the clinical picture. A multidisciplinary team including a radiologist, neurologist, and intensivist was on board and the patient was investigated for the following

differentials based on MRI findings: Hypertensive encephalopathy, Ischemic stroke, Acute disseminated encephalomyelitis, Vasculitis, Wernicke Encephalopathy.

CSF examination and the vasculitic screen were normal. Workup for secondary hypertension was normal.

The patient was intubated three times during the hospital stay with difficult extubation and had completed two courses of antibiotics. He was given two weeks of an alcohol detox regime based on his background alcohol excess. Blood pressure control was very difficult, especially after extubations. Multiple antihypertensive medications were used to control blood pressure. Due to a long hospital stay and repeated infections, he was severely deconditioned. He was on parental nutrition to meet his calorie requirement. The physiotherapist, occupational therapist, speech and language therapist, and dietitian played an important role in his recovery.

This case highlights the complexity of the management of a patient with hypertensive encephalopathy and alcohol misuse. The atypical findings on the MRI made the diagnosis difficult. Multiple chest infections, repeated intubations, and long hospital stays deconditioned the patient. A multidisciplinary approach played a crucial role in controlling blood pressure, resolving agitation, and finally diagnosing hypertensive encephalopathy. The case highlights the importance of considering unusual presentations and collaborative approaches in challenging clinical scenarios.

Declarations of Conflicts of Interest:
None declared.

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