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REVIEW ARTICLE

STATUS EPILEPTICUS RELATED TO A POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME (PRES): A CASE REPORT

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ABSTRACT

Posterior reversible encephalopathy syndrome (PRES) is a clinic-radiological syndrome characterized by the association of clinical signs such as high blood pressure, acute headache, altered level of consciousness, visual alterations, seizures, nausea, vomiting, and radiological findings showing posterior brain alterations. We report a case of a 26-year-old woman with a medical history of hypertension and kidney failure requiring peritoneal dialysis. She was brought by her husband to the emergency department after experiencing acute blindness. At presentation, she had a blood pressure of 220/110 mm Hg, a pulse of 80 bpm. She was drowsy but with a normal neurological examination. Capillary blood glucose was 1,2 g/l. Soon after her arrival, she presented six serial seizures that were resistant to clonazepam and phenobarbital. Therefore, general anesthesia was indicated. A brain MRI scan showed multifocal, T2-hyperintense lesions symmetrically surrounding the white matter of the temporo-parietal and occipital regions and the left frontal lobe, suggesting PRES. She was kept under general anesthesia. Four days after her admission, she presented severe hyperkalemia resistant to medical treatment as well as dialysis, with a fatal outcome. Emergency physicians must be alert to the clinical manifestations suggestive of PRES in order to initiate adequate treatment immediately to ensure a better outcome for the patients.

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INTRODUCTION

Posterior cerebral damage associated with hypertension encephalopathy was first described in 1984 by Aguglia and al. (1). In 1996, Hinchey and al. reported 15 cases of patients having posterior reversible encephalopathy syndrome (PRES) (2). This entity is characterized by the association of clinical signs such as acute headaches, altered level of consciousness, visual alterations, seizures, nausea, and vomiting, associated with radiological findings showing posterior brain alterations. We report a case of a young woman with a fatal outcome.

CASE PRESENTATION

A 26-year-old female with a medical history of hypertension and kidney failure requiring peritoneal dialysis. She did not have any risk factors for epilepsy and did not use any illicit drugs. She was brought by her husband after experiencing acute blindness. At presentation, she had a blood pressure of 220/110 mm Hg, a pulse of 80 bpm. She has no hemodynamic or respiratory impairment. She was drowsy but with a normal neurological examination. Capillary blood glucose was 1,2 g/l. Soon after her arrival, she presented six serial seizures. A blood chemistry panel showed a creatinine level of 111,9 mg/l and urea of 1,2 g/l. Liver function tests came out normal. A brain computed tomography scan and a cerebrospinal fluid analysis were reported normal. Blood pressure was controlled by intravenous nicardipine targeting a systolic blood pressure of 120 mmHg. A brain MRI scan showed multifocal, T2-hyperintense lesions symmetrically surrounding the white matter of the temporo-parietal and occipital regions and the left frontal lobe, suggesting PRES. (Figures 1 (A-B)). She was kept under general anesthesia. Four days after her admission, she presented severe hyperkalemia resistant to medical treatment as well as dialysis, with a fatal outcome.

DISCUSSION

Our patient presented a typical case of PRES syndrome. She had a history of chronic kidney disease, complained of acute blindness and presented status epilepticus. The brain MRI findings showed typical lesions of the posterior brain. PRES syndrome is a clinical radiographic syndrome mostly described in female patients (3), and it seems that the neurological manifestations of the syndrome are more

severe in young girls (4). This syndrome is characterized by variable clinical presentations, including headaches, vomiting, seizures, blindness, and coma. Fugate and al. analyzed the clinical feature of patients having PRES (3). In their study, they concluded that there was a female predominance. They reported hypertension in 86% of the cases, and renal failure was noted in 57% of patients. Seizures were the most common clinical manifestation in 74% of the subjects, with status epilepticus occurring in 18%. Other clinical presentations were noted, such as headaches in 26% of the cases and visual disturbances in 20% of the patients. Chronic kidney disease patients are mostly exposed to this entity because of their clinical status, which is associated with hypertension and elevated urea levels (5). The pathophysiology of this syndrome remains unclear. First, it has been suggested that the brain injury results from a sudden increase in systemic blood pressure, which results in a vasospasm and leads to brain ischemia. However, the reversibility of this PRES argues against this hypothesis. The other pathophysiological mechanism is reported as an acute elevation of the blood pressure beyond the cerebral autoregulatory capacity, leading to an important increase in the intracranial pressure. Those two hypotheses appear to be insufficient to fully explain this syndrome because in some cases, patients develop PRES without experiencing an acute rise in blood pressure (6). Hinchey and al.(2) also reported a PRES in three patients having normal blood pressure. These patients underwent immunosuppressive therapy with Cyclosporine and Taclorimus after kidney or liver transplantation. The involvement of immunosuppressive treatments in PRES was supported by many other studies (7,8). The radiological findings are typical and easily identified in the MRI brain scan. It is commonly described as a hyper-intense signal on T2 and FLAIR sequences. It is typically symmetrically located in the occipital area. Raman and al. conducted a retrospective study about the radiographic feature of PRES, they found that the most frequent location is the occipital region in 100% of the cases. Frontal and temporal lobes were also incriminated in respectively 30.4% and 8.69% of the patients (9). PRES is characterized by its reversibility, which depends widely on prompt antihypertensive treatment and dialysis assuring a good outcome.

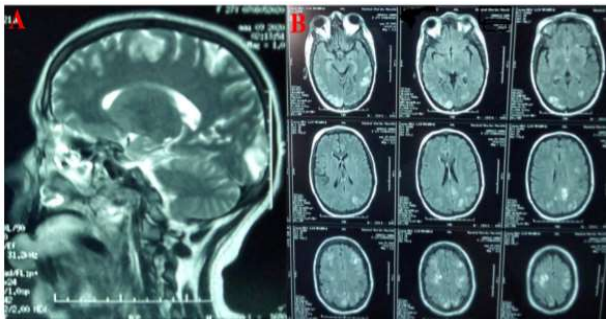

Figure 1 (A-B): A brain MRI scan showed multifocal, T2-hyperintense lesions symmetrically surrounding the white matter of the temporo-parietal and occipital regions and the left frontal lobe.

CONCLUSION

Emergency physicians must be alert to the clinical manifestations suggestive of PRES in order to initiate adequate treatment immediately to ensure a better outcome for the patients.

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