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Case Report

Atypical Location of Posterior Reversible Encephalopathy Syndrome (RPES): A Case Report

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Abstract

Posterior reversible encephalopathy (RPE) is a radioclinical entity associating reversible damage to the central nervous system with typical brain imaging. There is great variability in the clinical presentation of this syndrome and sometimes atypical imaging aspects. RPE is an unusual neurological complication occurring during pregnancy or postpartum, apart from any pre-existing pathology of pregnancy, in which vasogenic edema by rupture of the blood-brain barrier appears to be the main actor. We bring back the observation of a primiparous patient presenting generalized tonic-clonic convulsive seizures associated with a hypertensive peak, occurring during the third trimester of pregnancy. Brain CT (CT) was in favor of reversible posterior encephalopathy. The RPE must be evoked before any sign of neurological call, given the favorable evolution without sequelae under early and rapid treatment. We report the case of a patient admitted to intensive care for PRES syndrome diagnosed on CT with good clinical outcome.

Keywords: *Posterior Reversible Encephalopathy (RPE); Pre-Eclampsia; Eclampsia; Hypertension; Blood Transfusion*

Abbreviations

RPES: Posterior Reversible Encephalopathy Syndrome; CT: Computed Tomography; MRI: Magnetic Resonance Imaging

Introduction

Posterior reversible encephalopathy (RPE) is a radioclinical entity associating reversible damage to the central nervous system with typical encephalic imaging (MRI or CT) [1]. There is great variability in the clinical presentation of this syndrome and sometimes atypical imaging aspects. It associates several neurological signs such as headaches, visual disturbances, disturbances of consciousness, convulsive seizures and bilateral cerebral radiological abnormalities predominant in the posterior regions which are classically reversible [2]. Several etiologies can be at the origin of this syndrome, they are dominated by hypertensive encephalopathy, pre-eclampsia, eclampsia [3]; immunosuppressive therapy, system diseases and kidney damage. The search for an underlying general pathology should be systematic, as well as the search for a drug triggering factor in the event of the occurrence of posterior reversible encephalopathy This entity is well described in the literature, but still little known by the majority clinicians. RPE occurs mainly in cases of severe arterial hypertension Although rare, this condition should be considered in the event of any sign of encephalopathy occurring in a context of acute arterial hypertension [4]. We report the observation of a primary patient having presented seizures generalized tonic-clonic convulsions associated with a hypertensive peak, with on MRI, lesions in favor of PRES syndrome.

Materials and Methods

It is a study carried out in the obstetric intensive care unit about a case of a patient having presented seizures generalized tonic-clonic convulsion associated with a hypertensive peak, with on MRI, lesions in favor of PRES syndrome.

Case Report and Discussion

This is a 19-year-old woman, primigravida, primipara, with no notable pathological history hospitalized in the obstetric intensive care unit of the Abderrahmane Harrouchi hospital, for treatment of severe eclampsia at 34 weeks of amenorrhea (AS) in front of high blood pressure figures, positive proteinuria and neuro-sensory signs. type of headache in helmet. The patient was placed on a self-pulsing magnesium sulfate syringe and loading dose and maintenance dose with monitoring of blood pressure and level of consciousness. The evolution was marked by the occurrence of 2 generalized tonic-clonic convulsive seizures with return to the state of consciousness in the interictal period. The patient presented during the crisis a hypertensive peak at 180/110 mmHg. The examination after resolution of the attacks found an arterial pressure at 160/100 mmHg with return to the initial state of consciousness. The patient was admitted to the intensive care unit and was placed on magnesium sulphate, nicardipine and alpha-methyl-dopa with good progress. Corticosteroid therapy was given for fetal lung maturation. In addition, the patient underwent a lifesaving cesarean section allowing the extraction of a newborn male with Apgar 10/10. During her hospitalization, the patient underwent a cerebral CT showing the presence of multiple areas in hypodenses supra tentorial, poorly systematized, cortico-subcortical, parieto-occipital bilateral. Either an aspect compatible with a PRES syndrome in its atypical form. The biological assessment comprising a blood count, an ionogram and a crase assessment was unremarkable. the postpartum development was unremarkable. The patient was discharged from the hospital and no recurrence was observed. A follow-up MRI is scheduled after 3 months.

The term PRES was used on the basis of the similarity in appearance on imaging, the common localization of the parietal-occipital lobe, or the "posterior" localization of the lesions. The exact pathophysiological mechanism of PRES is not yet clear [5]. Three hypotheses have been proposed so far, which include cerebral vasoconstriction causing subsequent infarctions in the brain, failure of cerebral autoregulation with vasogenic edema, and endothelial damage with disruption of the blood-brain barrier resulting in transudation. proteins in the brain [6]. The reversible nature of PRES has been disputed recently based on new reports of permanent neurological damage and mortality up to 15%.

No clinical studies are available so far in patients with PRES requiring life-sustaining treatments. Improved knowledge and research on the factors influencing the outcome of PRES will result in better early management, less morbidity and mortality [7]. Studies show that delayed diagnosis and treatment can lead to death or irreversible neurological impairment. In case of hypertension-related or drug-induced PRES, effective treatment includes discontinuation of the offending agent, immediate control of blood pressure, anticonvulsant therapy, and treatment temporary renal replacement (hemodialysis/peritoneal dialysis) if necessary [8]. In PRES associated with systemic lupus erythematosus, aggressive treatment with corticosteroids and cyclophosphamide is effective [9]. Corticosteroids may improve vasogenic edema, but there is no strong evidence for their use in PRES Blood transfusion can cause a rapid increase in total blood volume, which further leads to overloading of cerebral blood flow [10]. Abrupt or acute cerebral hyperperfusion exceeding the capacity for self-regulation of cerebral capillary perfusion pressure could result in vasogenic edema found in PRES [11]. The possibility of severe anemia as a predisposing factor, due to insufficient oxygen supply to the brain, can lead to endothelial cell dysfunction, further resulting in loss of function or damage to the integrity of the barrier hematoencephalic in the capillary circulation cannot be excluded. Our patient did not have hypertension even transiently throughout the episode. In conclusion, PRES can be a major problem in rapid and massive blood transfusion. A high index of suspicion and prompt treatment can reduce morbidity, mortality and pave the way for rapid recovery.

Conclusion

RPE is an unusual neurological complication, apart from any pre-existing pathology of pregnancy. It is a syndrome that is still little understood, although it is relatively common. Its prognosis can be appalling when it is not recognized and taken care of in time. It is there-

fore fundamental to be made aware of it and to be vigilant in order to make the diagnosis early, and to institute effective management in an obstetric emergency. The search for an underlying general pathology should be systematic, as well as the search for a drug triggering factor. The correct and rapid diagnosis and treatment of RPE helps prevent the onset of irreversible neurological damage.

Conflict of Interest

I declare the absence of any financial interest or conflict of interest.

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