Posterior Reversible Encephalopathy Syndrome (PRES) After Vaginal Delivery: A Case Report

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Background: Posterior reversible encephalopathy syndrome (PRES) is an usually reversible neuro-radiological clinical syndrome characterized by headache, confusion, visual disturbances or blindness and seizures. Preeclampsia and eclampsia may be the most common causes of PRES. Vasculopathy and reduced brain perfusion are main pathophysiological mechanisms and commonly identified by CT or MR.[1]

Case Report:

- a 34 year old primipara, was presented in the labour ward at 38 weeks of gestation after a healthy pregnancy
- there was no evidence of hypertension, cardiac diseases or neurological manifestations
- the delivery was without complications, lasted approximately 3.5 h with pharmacological stimulation (oxytocin)
- three hours postpartum she was complaining of headache and nausea, after she developed an episode of generalised tonic-clonic seizure
- she was admitted to the ICU
- on admission she was confused, with mild type of amnesia, pupils were reactive slower to light stimulation, she was hypertensive (the highest blood pressure measured was 150/100 mmHg) with mild tachycardia (HR 100/min) and normal SpO2 (98%)
- in the ICU she had two more epileptic seizures witch stoped with injection of diazepam 10 mg

Management and Outcome:

- Computed tomography (CT) brain revealed parieto-occipital white matter changes, with vasogenic edema, suggestive of PRES.
- Blood tests provided only spars possibility eclampsia with slightly elevated liver enzymes.
- Urine analysis revealed proteinuria 2+; 24h urine proteins was elevated 1,957 g/24h (norm. 0-0,15).
- EEG pattern showed encephalopathy.
- Fundoscopy findings showed clear borders on the right and unclear on the left eye.
- Other system examinations were normal.
- Initial diagnosis of eclampsia was made and managed accordingly.
- Treatment: magnesium sulfate, manitol and antihypertensive therapy. Levetriacetam initiated from neurologysts as the drug of choice.
- After two days the patient completely recovered.
- Magnetic resonance (MR) of the brain showed PRES lesions in regression.
- On the third day postpartum she was transferred to the obstetrical department.

Discussion:

It is uncertain whether a cause and effect relationship exists between eclampsia and PRES or if these represent independent processes with some element of clinical overlap. [2] More than 70% of patients with PRES are hypertensive, though a significant proportion have normal or only mildly raised blood pressure. So attention should be drawn to blood pressure changes before, during and after delivery even if it is slightly elevated. Blood samples and repeated blood pressure measurements should be undertaken if the blood pressure is elevated.

Fig.1. Brain CT: discrete bilateral occipital white matter hypodensity

Fig.2. Brain CT: discrete white matter hypodensity in right parietal lobe

Fig.3. Brain MRI: 3D CUBE image show high signal in right occipital lobe

Fig.4. Brain MRI: 3D CUBE image show hyperintensity in right parietal lobe

Learning points: PRES develops in patients with complex systemic conditions such as eclampsia. PRES mostly resolves spontaneously and patients show both clinical and radiological improvements after proper diagnostic and treatment.

References:

1. Posterior reversible encephalopathy syndrome. Lamy C1, Oppenheim C2, Mas JL2. Handb Clin Neurol. 2014;121:1687-701.
2. Posterior reversible encephalopathy syndrome. Staykov D1, Schwab S. J Intensive Care Med. 2012 Feb;27(1):11-24.