

A rare case of Posterior Reversible Encephalopathy Syndrome- a case report

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Abstract: Posterior reversible encephalopathy syndrome (PRES) is also known as Reversible posterior leukoencephalopathy syndrome. It presents with rapid onset of symptoms, including headache, seizures, altered consciousness, and visual disturbance. A 23 years old female with Preeclampsia presented with the complaints of sudden onset of bilateral vision loss. On examination both anterior and posterior segments were normal with normal direct and consensual pupillary reactions. MRI was done which showed bilateral, symmetrical, hyper dense lesions in both Occipital lobes. The case was kept under observation and managed with antihypertensives. PRES is often unsuspected by clinicians. Recognition of the characteristic imaging findings by radiologists is key to diagnosis and should prevent deleterious work-ups or therapies.

Keywords: Posterior reversible encephalopathy syndrome, vasogenic oedema.

INTRODUCTION

Posterior reversible encephalopathy syndrome (PRES) also known as reversible posterior leukoencephalopathy syndrome presents with rapid onset of symptoms including headache, seizures, altered consciousness, and visual disturbance [1, 2]. It is a neurotoxic state that occurs secondary to the inability of posterior circulation to auto regulate in response to acute changes in blood pressure. Hyper perfusion with resultant disruption of the blood brain barrier, results in vasogenic oedema, but not infarction, most commonly in the parieto-occipital regions.

It is often but by no means always associated with acute hypertension [1, 2]. If promptly recognized and treated, the clinical syndrome usually resolves within a week [2, 3], and the changes seen in magnetic resonance imaging (MRI) resolve over days to weeks [2-4]. Posterior reversible encephalopathy syndrome is an increasingly recognized disorder, with a wide clinical spectrum of both symptoms and triggers, and yet it remains poorly understood. It is a rare clinical entity with an increasing incidence in modern world which has to be kept in mind while dealing with cases with such symptoms and can be diagnosed with a simple and only investigation MRI.

CASE DESCRIPTION

A 23 years old full term, Preeclampsia patient, was referred for fundus examination. She was diagnosed to have Preeclampsia and was undergoing treatment for the same. On examination vision was 20/20 in both eyes, anterior segment examination was within normal limits, and posterior segment examination with pupillary dilatation was within normal

limits. Blood pressure at the time of examination while on Nifedipine was 140/90mm of Hg.

Two days later this full term patient underwent an elective caesarian section to prevent eclampsia and its complications. Intra operative course was uneventful. Post operatively blood pressure was recorded as 160/100 mm of Hg and 170/110 mm of Hg on two different occasions. Physician advice was sought in view of high blood pressure and was advised to stop Tab. Nifedipine which she was taking regularly from 7th month of gestation and was started on Tab. Prazocin (Tab. Minipress XL), Tab. Amlodipine (Tab. Stamlo 5mg) and Inj. Lasix. After treatment the blood pressure was recorded as 140/100 mg.

Next day patient started complained of blurring of vision in both eyes which progressed to complete loss of vision in few hours. She was referred to department of ophthalmology for the same. On examination visual acuity now was noted as counting fingers close to face in both eyes. Anterior segment and posterior segment of both eyes was within normal limits.

Immediately Neuro Physician opinion was sought and M.R.I was done, which revealed bilateral, symmetrical, hyper dense lesions in both Occipital lobes otherwise known as Posterior Reversible Encephalopathy Syndrome (PRES). She was continued on same treatment and was reassured regarding her alignment.

Vision started recovering by the 3rd day which she initially perceived as distorted and then regained complete vision of 20/20 in both eyes within 24hrs.

DISCUSSION

Posterior reversible encephalopathy syndrome most commonly evolves over a matter of hours, the common presenting symptoms being seizures, disturbed vision, headache, and altered mental state [4]. More than 70% of patients with PRES are hypertensives, though significant proportions have normal or only mildly raised blood pressure [3-7]. Cause remains controversial, but the most popular theory is that severe hypertension cause's interruption to brain auto regulation [2, 8]. Cerebral blood flow is usually regulated by dilatation and constriction of vessels to maintain adequate tissue perfusion [8] and simultaneously to avoid excessive intracerebral hypertension. An alternative theory is that PRES is a result of a systemic inflammatory state causing endothelial dysfunction [8]. This postulate is supported by the observation that PRES is commonly associated with a systemic inflammatory process such as sepsis, eclampsia, transplantation, and autoimmune disease [8].

With regards to ophthalmology PRES may be associated with hypertensive retinopathy and Pregnancy induced hypertensive retinopathy, which may include arteriolar changes, flame shaped hemorrhages or optic disc edema.

MRI finding most commonly seen is vasogenic oedema within the occipital and parietal regions (~95% of cases), relating to the posterior cerebral artery supply. The oedema is usually symmetrical. Despite being termed posterior, PRES can be found in a non-posterior distribution, mainly in watershed areas, including frontal, inferior temporal, cerebellar and brainstem regions [9]. Both cortical and subcortical locations are affected. The three main patterns seen in MRI are holohemispheric at watershed zones, superior frontal sulcus and parieto-occipital dominance.

PRES is a clinico neuroradiologic entity associated with hypertension, immunosuppression, or many diverse clinical entities. Since it is often unsuspected by clinicians, recognition of the characteristic imaging findings by radiologists is key to diagnosis and should prevent deleterious work-ups or therapies.

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