"PRES" SING PROBLEM OF HYPERTENSION IN EARLY PREGNANCY: A CASE SERIES

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ABSTRACT Introduction: Posterior Reversible Encephalopathy Syndrome (PRES) is a clinico-neuro-radiological adversity associated with headache, vomiting, altered mentation, and seizures, with acute to sub-acute presentations. Diagnosis is by MRI. The condition is often reversible but increases morbidity. Case series: We report three cases of unusual presentation of Posterior Reversible Encephalopathy Syndrome that followed hypertension in early pregnancy without seizures. Conclusion: Posterior Reversible Encephalopathy Syndrome may present in women with early-onset or pre-existing hypertension. It must be included as one of the differential diagnoses in pregnant women having hypertension early in pregnancy and early fetal loss even in the absence of seizures.

KEYWORDS Hypertensive encephalopathy, PRES, Early onset hypertension

Case series

Case 1

A 24-year gravida 2 paras 1 living 1 presented at 12 weeks of gestation with spotting per vaginum for 6 hours. She gave the history of lifting a full bucket of water prior to the incident. She had no other significant history. Her previous pregnancy was three years ago, and she had run an uneventful course. Her previous menstrual cycles were regular. She had no health check-ups in the interpregnancy interval.

On examination, she was conscious, oriented, and responded well. She was lean built with a BMI of 17.86Kg/m2. She had pallor. Her pulse was 110 beats/min, blood pressure was 166/98mmHg, respiratory rate was 16 cycles/min, and saturation was 98% on room air. Thyroid and breast examinations were normal. Respiratory system and Cardiovascular system examination were normal except for tachycardia. Obstetric examination showed the uterine size of about 16-18 weeks, not corresponding to gestational age. On perineal examination, no active bleeding was present. Per vaginal examination was not done.

An urgent ultrasound for fetal viability showed a snowstorm appearance suggestive of molar pregnancy. There were two large anechoic cysts, 5x4cm in the right ovary and 6x5cm in the left ovary. No fetal parts could be made out. Uterine arteries showed diastolic notching bilaterally. She was admitted with
the plan of suction and evacuation. Her investigations were as follows: Haemoglobin- 8.2g%, WBC- 7.7x10^3 /μL, platelets-166 x10^3/mL. Liver and renal function tests were within normal limits. S TSH was 0.001 IU/mL, free T3 was at the normal upper limit, and free T4 was raised. S. beta hCG was 46,000U/mL. Urine albumin was 1+. ECG showed sinus tachycardia. Renal artery Doppler was normal.

She underwent suction and evacuation, and about 500mL of vesicular tissue was retrieved. There was about 500mL of post-procedure bleeding. She was transfused with one unit of packed RBCs. She has discharged on day 7 on tablet amlodipine 5mg twice a day as her blood pressure was persistently in the range of 140-150/90-100mmHg. She was advised to follow up as per the protocol of molar pregnancy and follow up with a physician for evaluation of hypertension.

She was on regular follow-up, and S beta hCG was in the falling trend. At week five, she complained that she had been having headaches ever since discharge, for which she had been taking paracetamol by herself. She also had been feeling drowsy and inactive since one day. She had stopped finding relief with paracetamol for the last one week. Physician consultation was sought, and MRI brain Axial FLAIR showed posterior cortical hyperintensity. (figure 1A) Her ophthalmological examination was normal. She has advised dose adjustment of antihypertensives and review. In the next weekly visit, her headache had resolved.

1. Case 2
A 41-year gravida 2, abortion 1 presented at 12 weeks of gestation for an antenatal check-up. She had conceived by In-Vitro Fertilization – Embryo Transfer. She had been a known hypertensive since the age of 35 years, on tablet losartan 40mg once daily. It had been changed to tablet labetalol 300mg twice a day. She was also on tablet ecosiprin 150mg daily and tablet dydrogesterone 10mg daily. She had a history of spotting per vaginum at 7 weeks and then at 9 weeks. She gave a history of spontaneous abortion at 6 weeks of gestation 9 months ago.

Her blood pressure was well controlled before this pregnancy. She tested negative for Anti Phospholipid Antibody Syndrome. Her haemoglobin was 8.9g%, platelets were 154x10^3/mL, S. LDH was 860U/L, S uric acid was 9.2mg%. Her thyroid function tests were normal. Urine albumin was 1+. ECG was normal.

She was administered Magnesium sulfate by Pritchard regimen, injectable and oral labetalol, paracetamol, and mannitol infusion. The risk was explained, and the patient and guardians requested for termination of pregnancy for the benefit of maternal health. Over the next 14 hours, she expelled the products of conception by medical termination of pregnancy. However, her blood pressure was unrelenting in the range of 170/110mmHg. She was on tablets amlodipine 10mg twice a day, atenolol 25mg twice a day, and furosemide 20mg once a day. Her papilloedema had marginally improved, and she had no complaints of blurring vision or headache.

On day 6, she complained of vomiting and resurgence of headache while her blood pressure was normalizing towards 130/80-90mmHg. A medicine consult was obtained. MRI brain Axial FLAIR showing hyperintensity in the posterior cortical and subcortical region. (figure 1C) She was given an injection of dexamethasone. She improved in four days. In her follow-up visit 2 weeks later, she had no fresh complaints.

Discussion
PRES was first presented as a single-name syndrome in a case series in 1996 which described the clinic-radiological amalgamation of headache, altered mentation, visual changes and seizures...
with oedema of the posterior cerebral white matter. While the commonest association of PRES has been described with eclampsia, hypertensive encephalopathy, immunosuppressive drug intake (cisplatin, tacrolimus, cyclosporin A, steroids, HIV infection), various conditions such as acute glomerulonephritis, hemolytic uremic syndrome, intravenous globulin or erythropoietin, blood transfusion, and acute intermittent porphyrias are known etiologies.

The hypothesized mechanisms are autoregulatory dysfunction, cerebral ischemia, and endothelial dysfunction, leading to oedema. (UTD)[4]. The characteristic involvement is of the subcortical white matter of the posterior aspect of the cerebrum. Clinical presentations are most commonly a combination of headaches, visual disturbances, altered mentation and seizures. All our patients had hypertension, and one had altered mentation, one had visual disturbance. None had seizures.

The development of PRES is acute, but with treatment, reversibility is prompt. However, PRES is a heterogeneous condition. It is not always reversible, can involve grey matter too and can affect beyond posterior regions of the cerebral hemispheres. However, it does occur even without seizures, as described in our patients.

Diagnosis is by CT or MRI, which show white matter oedema. MRI also shows focal or confluent areas of increased signal on T2-weighted images [5].

Treatment is conservative with the removal of precipitating factors whenever possible. Prompt recovery is the rule. Control of hypertension, discontinuation of the inciting agent, antiepileptic drugs are a mainstay. Other drugs used are dexamethasone [6] and mannitol [7]. In rare instances of delayed diagnosis or treatment, irreversible brain damage is known to occur [8].

Conclusion
PRES is clinico-neuro-radiological acute adversity that adds to morbidity in obstetric hypertensive conditions. Non-classic presentations are not uncommon and must be promptly recognized. Early diagnosis and initiation of treatment can shorten suffering and improve outcomes.

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Conflict of interest
There are no conflicts of interest to declare by any of the authors of this study.

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