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Research Article

A CASE PRESENTATION ON POSTERIOR REVERSIBLE ENCEPHALOPATHY SYNDROME

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ABSTRACT

Posterior Reversible Encephalopathy Syndrome (PRES) is a clinicopathological syndrome associated with various clinical conditions presenting with headache, encephalopathy, seizure and cortical visual disturbances. Radiological findings in PRES are thought to be due to vasogenic edema predominantly in posterior cerebral hemispheres and are reversible with appropriate management.

A case of postpartum PRES, 23year old primigravida of 38 weeks period of gestation was admitted to labor room with bleeding per vagina. She was admitted for safe confinement. Caesarean section was performed for fetal distress. On 5th post operative day the mother developed headache, blurred vision and generalized tonic clonic seizures. The provisional diagnosis of postpartum PRES was made and confirmed with MRI. All other causes of postpartum seizures were ruled out. Mother was successfully treated with anticonvulsants, antihypertensive and other supportive treatment. Postpartum PRES is a rare clinical condition mostly associated with hypertension, preeclampsia and vasculitis. Early recognition and treatment can lead to complete recovery of the condition.

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INTRODUCTION

Posterior Reversible Encephalopathy Syndrome (PRES) also known as Reversible Posterior Leukoencephalopathy Syndrome (RPLS) is a rare clinical neuro radiological entity introduced as late as 1996 by Hinchey.

It is a clinical neuro radiological syndrome associated with various clinical conditions presenting with headache, encephalopathy, seizures, cortical visual disturbances or blindness and parieto- occipital white matter changes or neuro imaging. PRES is strongly associated with conditions that co-exist in mothers with renal disease, hypertension, vascular and autoimmune diseases, exposure to immunosuppressive drugs and organ transplantation. Chronic kidney disease and acute kidney injury are both commonly present in patients with PRES. 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.

Diagnosis

CT scan may also demonstrate venous sinus thrombosis or arterial ischemia or thrombosis.

Typical MRI scan findings in PRES are of bilateral white matter abnormalities in vascular watershed areas in the

posterior regions of both cerebral hemispheres, affecting mostly the occipital and parietal lobes.

Electroencephalography can identify the subclinical seizures and can point to other causes of encephalopathy.

Lumbar puncture can diagnose infection or subarachnoid haemorrhage.

Management

No clinical trials have evaluated the management of PRES, but rapid withdrawal of the trigger appears to hasten recovery and to avoid complications. For example, aggressive blood pressure management, withdrawal of the offending drug or delivery in eclampsia.

1. Antiepileptic drugs should be used to treat seizures.
2. Antispasmodic drug of choice is Magnesium sulphate. For the treatment of epileptic seizures, an intravenous loading dose is administered initially, followed by a continuous maintenance dose infusion.
3. Other treatments include diuretic agents and corticosteroids such as dexamethasone or betamethasone.
4. Corticosteroids should theoretically improve vasogenic edema, but there is no evidence for their use in PRES.

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Effect of Pres Syndrome

Maternal

- Placental abruption
- Postpartum cerebral intraparenchymal haemorrhage
- Maternal death
- Breast feeding is not contraindicated
- Blindness
- Permanent neurological impairment
- Cerebral infarction/ haemorrhage
- Pulmonary oedema
- Hepatic rupture

Fetal

- Fetal growth retardation
- Fetal death
- Asphyxia
- Respiratory distress syndrome

Case Description

23 years old primigravida woman with 38 weeks gestation was admitted to the labor room with a history of vaginal bleed of 1 day duration. On assessment her BP was 130/80 mmHg and she was conscious and oriented. Then she underwent the emergency LSCS for fetal distress. She delivered a live male baby with the birth weight of 2.56kg. APGAR score is 8/10 at 1 min, 9/10 at 5 min. Mother & baby were healthy and discharged from the hospital on the 4th post-operative day.

On 5th post-operative day the mother developed headache, followed by 4-5 episodes of vomiting, fits, blurred vision, became unconscious and was brought to hospital. All routine investigations were done and MRI was taken. MRI findings showed that cortical & subcortical T2/ FLAIR hyperintensity without diffusion restriction in B/L sup- frontal & parasagittal high parietal lobes. B/L parieto occipital & posterior temporal lobes likely to represent Posterior Reversible Encephalopathy Syndrome. Laboratory findings indicate Urea level 90mg/dl and creatinine level 3.75mg/l. Drug management included Inj. Levipill 1gm stat followed by Inj. Levipill 500gm- IV -Bd, Tab Labetolol 50mg -oral -Bd, Inj. MgSO₄- 1gm/hr x 24hrs and Inj. NaHCO₃ 50meq- 50ml/hr.

On 7th post-operative day she had good improvement in vision. Uterus was well contracted and bleeding was within normal limits. On 8th post-operative day her BP was 130/80mmHg and she was discharged healthily on 9th post-operative day. By then the mother was recommended to continue antihypertensive drugs (Tab. Amlong 5mg- od) and follow up after 2 weeks and also recommended to get her blood pressure checked by her own general practitioner.

Nursing Care

- PRES Syndrome can be very unpredictable and manifests in many atypical ways.
- Attention should be drawn to the blood pressure during birth. Blood sample and repeated Blood pressure measurements to be taken if the Blood pressure is elevated.
- Fast initiation of proper treatment may be crucial for the outcome.

- The increase/change in Blood pressure and not so much the absolute blood pressure is the peculiarity in PRES. Awareness should be drawn to blood pressure changes.

Nursing Diagnosis

Ineffective tissue perfusion (cerebral) related to seizure activity.

Goal: Maintaining cerebral tissue perfusion.

Interventions

- Maintain a patent airway until mother is fully awake after seizure.
- Provide oxygen during the seizure if cyanotic changes occur.
- Stress the importance of taking medications regularly.
- Monitor serum levels for therapeutic range of medications.
- Monitor for toxic adverse effects of medications.
- Monitor platelet and liver functions for toxicity due to medications.

Ineffective breathing pattern related to neuromuscular impairment secondary to prolonged tonic phase of seizure or during postictal period.

Goal: Maintain normal breathing pattern and to meet adequate oxygen needs.

Interventions

- Monitor respiratory and oxygenation status to determine presence and extent of problem to initiate appropriate interventions.
- Position the patient (side lying) to maximize ventilation potential.
- Identify patient requiring actual/potential airway insertion to facilitate intubation as necessary.
- Perform endotracheal or nasotracheal suctioning to maintain airway as needed.

Fear and anxiety related to the disease condition and outcome of postpartum

Goal: Mother will be free of fear and anxiety.

Interventions

Maintain good rapport with mother

- Encourage mother to verbalize her fear
- Listen to the mother carefully and with patience
- Encourage mother to ask doubts
- Clarify the doubts of mother
- Provide psychological support to the mother.

Risk for deficient fluid volume related to vomiting

Goal: Maintain normal fluid and electrolyte levels.

Interventions

- Assess the energy level of mother every shift.
- Monitor the mother mental status every 2nd hourly.
- Monitor the intake output chart every 12 hours.
- Check for electrolytes level.

- Provide clear liquids or administer IV fluids to improve / maintain hydration.

Prognosis

Many cases resolve within 2 weeks of controlling the blood pressure and eliminating the inciting factor. PRES may recur in about 5-10% of cases.

CONCLUSION

Early diagnosis and management of PRES is critical to avoid irreversible ischemic damage or death. Recognition at the earliest and prompt initiation of the supportive measures can prevent permanent neurologic damage and thereby associated morbidity. The key to safe motherhood in such women is multi disciplinary care in the peri and post partum period.

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