

# Presentation of Posterior Reversible Encephalopathy Syndrome in a Pregnant Patient with Preeclampsia with Severe Features

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## Preeclampsia

- Affects up to 5% of pregnancies in North America
- Pathophysiology involves widespread endothelium dysfunction, impacting multiple organ systems

## Posterior Reversible Encephalopathy Syndrome (PRES)

- Radiologic findings – edema involving white matter in posterior portions of cerebral hemispheres (can occur throughout brain)
- Clinical Symptoms – seizures, headache, vision changes, altered consciousness
- Pathophysiology – endothelial dysfunction in combination with elevated blood pressure
  - Disruption in cerebral blood flow autoregulation -> reduced cerebral vascular resistance -> hyperperfusion and blood brain barrier disruption with vasogenic edema
- Serious complication of preeclampsia and eclampsia, warranting delivery

## Case Presentation

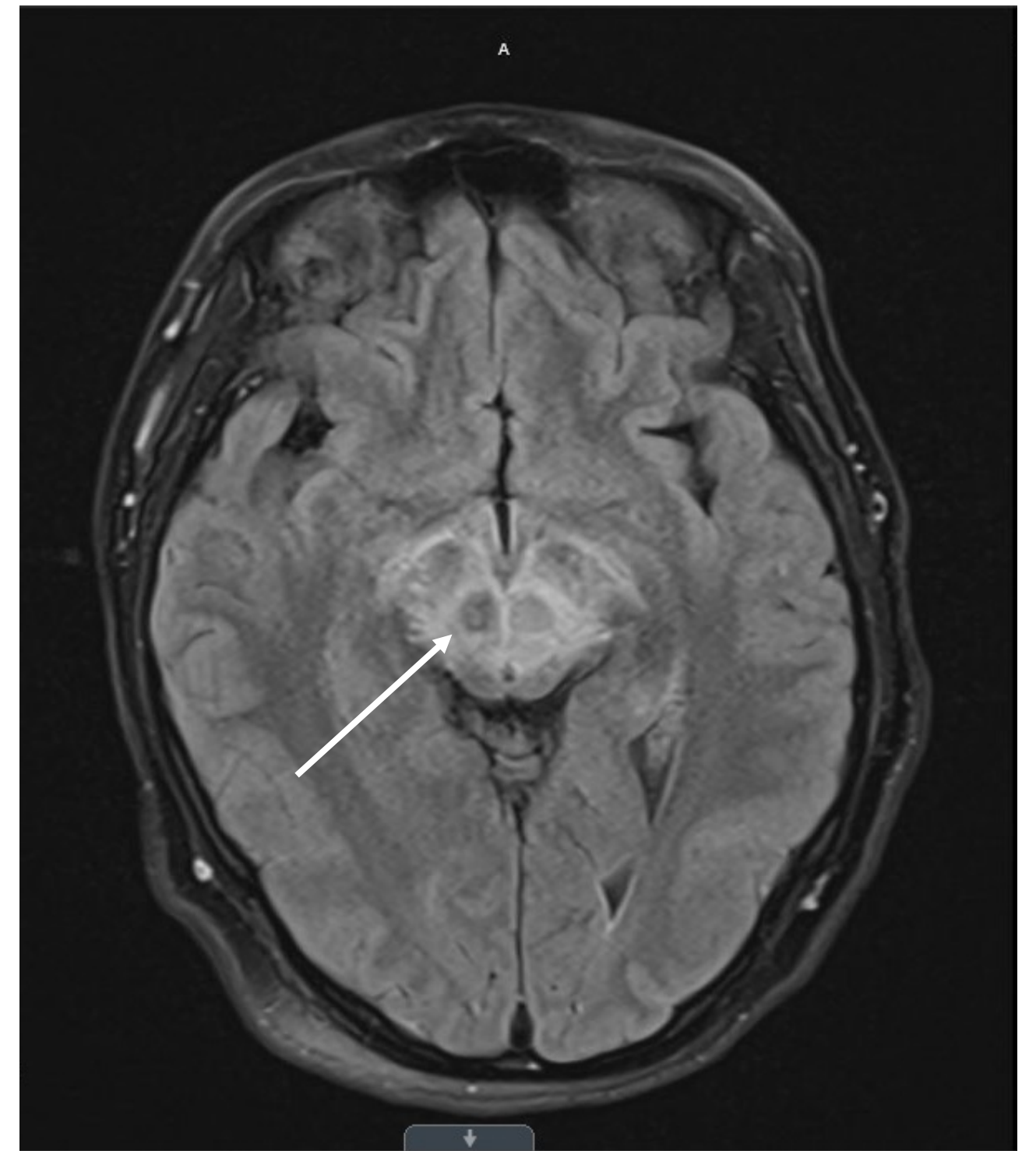
- 21-year-old G2P1001 at 35 weeks and 4 days who was transferred to a tertiary care facility given newly diagnosed preeclampsia with severe features and non-reassuring fetal monitoring
- Endorsed headache over the prior 2 days; new onset double vision on arrival

## Intrapartum Development of PRES

- Worsening dizziness and double vision; new nystagmus on exam
- CTA: subtle hypoattenuation in left internal capsule and possibly bilateral occipital lobes, suggesting PRES vs small infarcts
- Course complicated by developing HELLP, language barrier and patient's strong desire to avoid cesarean delivery
- Decision that risks of epidural in setting of worsening mental status and evolving neurologic disorder outweighed benefits

## Post-partum events

- Vaginal delivery followed by further decline in neurologic status requiring ICU admission
- MRI: Marked signal abnormality in bilateral basal ganglia, thalami and brainstem; patchy abnormalities in temporal, frontal and occipital lobes
- Improvement in symptoms with discharge on post-partum day 5



# Learning Points

- Maintain a broad differential
  - PRES presents with non-specific symptoms
  - Recognition is important to prevent morbidity and mortality
- Early tertiary care utilization
  - Availability of rapid and various imaging modalities
  - Adult and neonatal ICUs
- Multidisciplinary planning and discussions
  - Maternal-fetal medicine, Anesthesia, Neurology

## References

- Gewirtz AN, Gao V, Parauda SC, Robbins MS. Posterior Reversible Encephalopathy Syndrome. Curr Pain Headache Rep. 2021 Feb 25;25(3):19. doi: 10.1007/s11916-020-00932-1. PMID: 33630183; PMCID: PMC7905767.
- Tawati DA, Chan W-S. A systematic review of posterior reversible encephalopathy syndrome in pregnant women with severe preeclampsia and eclampsia. Obstetric Medicine. 2023;16(4):236-241. doi:10.1177/1753495X221150302