

Working together to work wonders.

Conclusion

Until proven otherwise, the occurrence of seizures during pregnancy should be considered eclampsia⁹. However, given the difficulty in treating the seizures, compounded by HELLP syndrome, further investigation into an underlying etiology was warranted. Perhaps if cerebral imaging had occurred earlier in our patient's presentation, the ICH would have been detected and acted upon prior to devastating neurologic injury. Ultimately, ineffective communication lead to a possibly avoidable devastating consequence.

References

1. Ananth CV, Keyes KM, Wapner RJ. Pre-eclampsia rates in the United States, 1980-2010: age-period-cohort analysis. *BMJ*. 2013;347:f6564. doi:10.1136/bmj.f6564
2. Liu S, Joseph KS, Liston RM, et. al.: Incidence, risk factors, and associated complications of eclampsia. *Obstet Gynecol* 2011; 118: pp. 987-994.
3. Cooray SD, Edmonds SM, Tong S, et. al.: Characterization of symptoms immediately preceding eclampsia. *Obstet Gynecol* 2011; 118: pp. 995-999.
4. Sadasivan B, Malik GM, Lee C, Ausman JI. Vascular malformations and pregnancy. *Surg Neurol* 1990;33:305–313
5. Robinson JL, Hall CJ, Sedzimir CB. Subarachnoid hemorrhage in pregnancy. *J Neurosurg* 1972;36:2
6. Aagaard-Tillery KM, Belfort MA: Eclampsia: morbidity, mortality, and management. *Clin Obstet Gynecol* 2005; 48: pp. 12-23.
7. Duley L, Henderson-Smart DJ, Chou D: Magnesium sulphate versus phenytoin for eclampsia. *Cochrane Database Syst Rev* 2010; CD000128
8. Duley L, Henderson-Smart DJ, Walker GJ, Chou D: Magnesium sulphate versus diazepam for eclampsia. *Cochrane Database Syst Rev* 2010; CD000127
9. Chapter 35. Chestnut, David H.. *Chestnut's Obstetric Anesthesia: Principles and Practice*. Sixth edition. Philadelphia, PA: Elsevier, 2020.

```
graph LR; GH[Gestational Hypertension] --> P[Preeclampsia]; P --> E[Eclampsia]; E --> H[HELLP Syndrome]
```

GESTATIONAL HYPERTENSION

- Presents as elevated blood pressure after 20 weeks' gestation without proteinuria (in the absence of chronic hypertension or systemic manifestations of preeclampsia) that resolves by 12 weeks postpartum

PREECLAMPSIA

- Is defined as the new onset of hypertension and proteinuria after 20 weeks' gestation

ECLAMPSIA

- When central nervous system (CNS) involvement results in the new onset of seizures in a woman with preeclampsia

HELLP SYNDROME

- Refers to the development of hemolysis, elevated liver enzymes, and low platelet count in a woman with preeclampsia

Figure 1. Pregnancy-Induced Hypertension Spectrum

Start with an intravenous bolus of 4 to 6 g magnesium sulfate, followed by an infusion at 1 to 2 g/h.
In case of persistent or recurrent seizures, give an additional bolus of 2 to 4 g, infused over 5 to 10 minutes.
For recurrent or uncontrolled seizures, consider small doses of midazolam or diazepam to raise the seizure threshold. ⁶
Magnesium sulfate is preferred to diazepam for the prevention of further seizures in eclampsia. ^{7,8}

Table 1. Seizure Management in Eclampsia

Post-operative Course:
Transferred to SICU intubated but without sedation. VSS on arrival and GCS 1-1t-1. Prolonged “sedation” and seizure-like activity on POD 0 prompts spot EEG which shows intermittent focal slowing in right hemisphere, Neurology consult who recommend Keppra loading dose, and CTH which shows large left frontal acute parenchymal hemorrhage with midline shift. NSGY is consulted who recommend serial CTH. Their reasoning:

“with all the confusing data, close watching of the left frontal brain hemorrhage was reasonable as frontal hematomas above the temporal fossa are generally well tolerated.”

Overnight worsening neuro exam and progression of bleed seen on CTH. NSGY discusses ICP monitoring bolt placement with family. Patient acutely decompensates, herniation is suspected. Femoral CVC placed, started mannitol and 3% NS. CTH confirms herniation. Neuro exam shows fixed and dilated pupils, no reflexes. NSGY has GOC discussion with family. Treatment stopped per family request. Patient dies shortly after palliative extubation.

“with all the confusing data, close watching of the left frontal brain hemorrhage was reasonable as frontal hematomas above the temporal fossa are generally well tolerated.”

Overnight worsening neuro exam and progression of bleed seen on CTH. NSGY discusses ICP monitoring bolt placement with family. Patient acutely decompensates, herniation is suspected. Femoral CVC placed, started mannitol and 3% NS. CTH confirms herniation. Neuro exam shows fixed and dilated pupils, no reflexes. NSGY has GOC discussion with family. Treatment stopped per family request. Patient dies shortly after palliative extubation.