

Mild neurological symptoms in preeclampsia before cesarean delivery: A warning for intracranial hemorrhage

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To the Editor,

Approximately half of acute headaches occurring during pregnancy are associated with hypertension, with preeclampsia being the most common cause^{1,2}. Peripartum intracranial hemorrhages (ICH) are sometimes attributed to complications related to neuraxial anesthesia, but evidence highlights pregnancy-related hypertensive disorders as a risk factor. A review on spontaneous ICH during pregnancy reported that pregnancy-related hypertension (including preeclampsia, eclampsia, and HELLP syndrome) was present in 37% of cases. Spontaneous ICH carries a high maternal mortality rate, with intraparenchymal hematomas in the third trimester being the most common type³. It is important to note the boundaries of this association. The same study found that the majority of spontaneous hemorrhage cases (>60%) occur in patients without pregnancy-related hypertension, emphasizing the complex multifactorial etiology of this devastating peripartum complication^{1,3,4}.

In this letter, I aim to share an important clinical message through a case of preeclampsia in which mild neurological findings were detected immediately before emergency cesarean delivery but could not be further evaluated because of the obstetric emergency. A 28-year-old woman, at 35 weeks of gestation, was transferred to the operating room with hypertension and fetal distress. During preanesthetic evaluation, dysphasic speech and mild confusion were observed. Due to fetal bradycardia and the need for urgent delivery, advanced neurological evaluation and neuroimaging could not be performed before anesthesia induction. Therefore, an emergency cesarean delivery was performed under general anesthesia. Preinduction blood pressure was 150/110 mmHg. Rapid sequence induction was performed with propofol 200 mg, lidocaine 50 mg, fentanyl 100 µg, and rocuronium 50 mg, followed by endotracheal intubation with cricoid pressure. The intraoperative course was hemodynamically stable. 8 h after surgery, during close ward follow-up, the patient's neurological status deteriorated, with worsening confusion and neurological deficits. Subsequent neuroimaging and consultations revealed an intraparenchymal intracranial hemorrhage (Figure 1). The patient was managed conservatively in the intensive care unit, did not require surgical intervention, and was discharged with permanent sequelae of Wernicke's aphasia and hemiplegia.

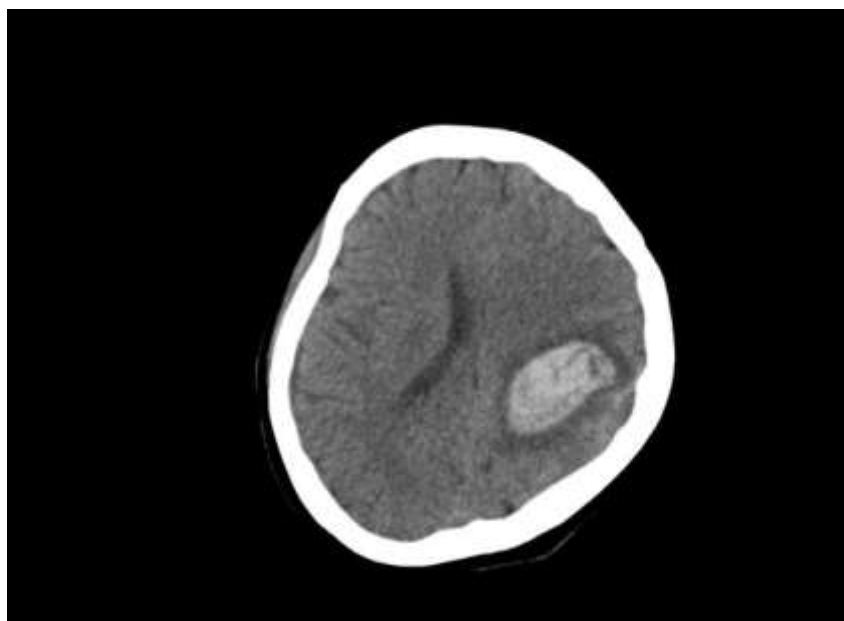


Figure 1. Initial non-contrast cranial computed tomography performed after postoperative neurological deterioration, demonstrating an acute left temporoparietal intraparenchymal hemorrhage.

Pregnancy and postpartum period carry an increased risk for hemorrhagic strokes. Although severe headache, seizures, or prominent focal deficits are predominant in most cases in the literature, the initial symptoms may be subtle^{1, 2}. Preeclampsia predisposes patients to cerebrovascular complications through endothelial dysfunction, impaired cerebral autoregulation, and vasogenic edema. Therefore, even mild disorientation, speech disturbance, or behavioral changes should be considered clinically significant^{5, 6}.

This case demonstrates the difficulty in decision-making when obstetric urgency and the need for neurological evaluation arise simultaneously. In this setting, the inability to obtain preoperative neuroimaging was primarily related to fetal bradycardia and the need to avoid delaying delivery. However, this should be distinguished from the potentially modifiable delays in the neurological evaluation. When time permits, persistent focal neurological deficits, progressive mental status changes, atypical neurological symptoms, or neurological findings disproportionate to the obstetric condition should prompt urgent neurological consultation and consideration of neuroimaging^{1, 7}.

In such clinical scenarios, mild neurological findings should be evaluated within the context of careful clinical assessment including fetal well-being. Clinical management should prioritize aggressive treatment of blood pressure, maintenance of a stable coagulation profile, avoidance of marked hypertensive responses during induction and emergence, and close postoperative neurological monitoring^{1, 5}. The management of spontaneous ICH during pregnancy needs to be individualized based on the maternal status and gestational age. Considering delivery prior to neurosurgical management is reasonable and may often be preferable, particularly in the late third trimester. After 34 weeks, management should address the needs of both the mother and fetus by performing a cesarean section³.

Current evidence suggests that neuroimaging during pregnancy should not be delayed if it is expected to provide clinically relevant information. Both magnetic resonance imaging and computed tomography can be safely used when indicated. In emergency situations, decision-making should be individualized, considering clinical context, hemodynamic stability, and accompanying neurological findings^{1, 5, 7}.

Consent: Written informed consent was obtained from the patient's next of kin (husband).

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