

Original Article



Eclamptic Seizure in a Woman with Severe Preeclampsia: A Case Report

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Abstract:

Introduction: Eclampsia is a life-threatening complication of severe preeclampsia. This report describes a case of intrapartum eclampsia in a patient with severe preeclampsia, detailing the critical clinical course and multidisciplinary management.

Patient concerns: A 43-year-old woman at 38 weeks of gestation was admitted with severe preeclampsia, presenting with severe hypertension (208/120 mmHg), proteinuria (+++), headache, and blurred vision. Shortly after admission, she developed a generalized tonic-clonic seizure.

Diagnosis: Eclampsia complicating severe preeclampsia.

Interventions: Immediate management included securing the airway, administering magnesium sulfate, labetalol, and nicardipine. An emergency cesarean section was performed under general anesthesia utilizing rapid sequence induction. Postoperative care in the ICU involved continued magnesium sulfate infusion, blood pressure control, and close monitoring.

Outcomes: A male infant was delivered with Apgar scores of 7-8. The maternal condition stabilized, and she was successfully discharged. Head CT suggested posterior reversible encephalopathy syndrome (PRES).

Clinical significance: Ensuring maternal and neonatal safety in eclampsia necessitates rapid recognition, immediate intervention, and optimized anesthetic management, with an emphasis on considering point-of-care gastric ultrasound in emergencies. It underscores the indispensable role of multidisciplinary team collaboration.

Keywords: Eclampsia; Severe preeclampsia; Case report; Anesthesia management; Multidisciplinary team; PRES; Cesarean section

1. Introduction

Eclampsia is a critical complication of severe preeclampsia that can lead to convulsions, coma, and even death in pregnant women, posing a serious threat to the lives of both mother and infant. It is one of the major global causes of maternal and perinatal morbidity and mortality, with significantly higher fatality rates in resource-limited regions. Eclamptic seizures may trigger severe complications such as placental abruption, cerebral hemorrhage, and multiple organ failure, necessitating immediate intervention and termination of pregnancy. Even with prompt treatment, eclampsia can lead to long-term

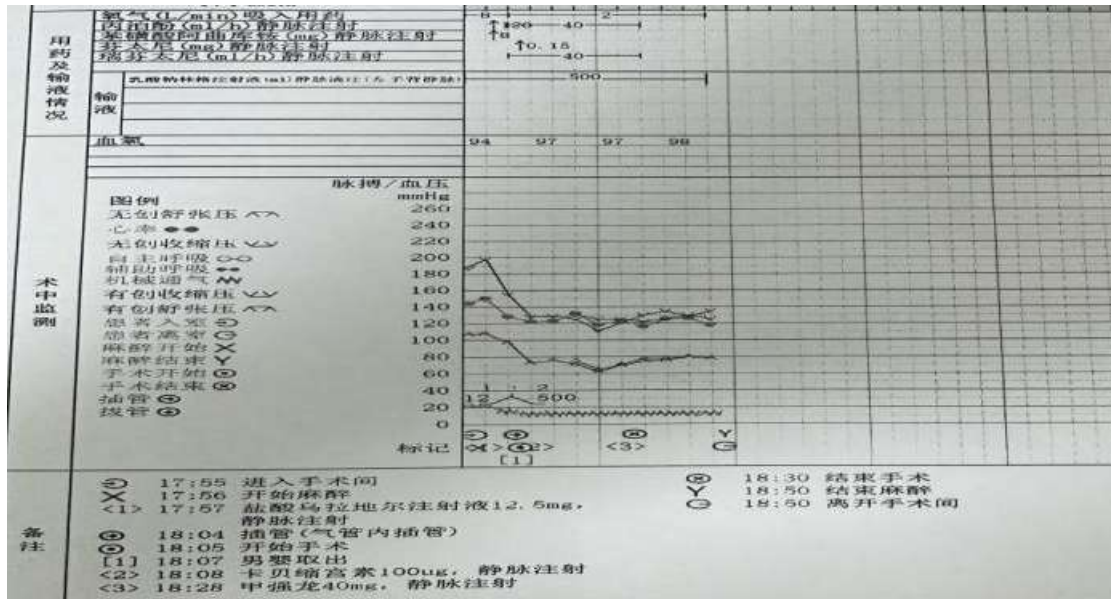
maternal cardiovascular diseases and neurological sequelae. The anesthesia and postoperative management of these patients also present significant challenges. This article presents a case of a parturient with eclampsia, illustrating a complex and critical condition where timely medical intervention ultimately resulted in the patient's successful discharge.

2. Case Report

The patient, a 43-year-old female at 38 weeks of gestation, was admitted with a diagnosis of "hypertensive disorders of pregnancy, severe

preeclampsia." She had no prior history of hypertension or diabetes. On admission, her blood pressure was 208/120 mmHg with urine protein (+++), accompanied by subjective symptoms such as headache and blurred vision. The obstetric team promptly completed necessary examinations and arranged for a cesarean section to terminate the pregnancy as soon as possible. The patient was admitted as an emergency at 16:00 on June 7, 2025, reporting elevated blood pressure for two days and worsening blurred vision and dizziness for one day. Vital signs were: BP 208/120 mmHg, HR 120 bpm, RR 20 bpm. Immediately after admission, she was administered labetalol combined with nicardipine for blood pressure control and magnesium sulfate for seizure prophylaxis. The family was informed of the unstable and deteriorating condition, and immediate termination of pregnancy was recommended. At 16:14, 14 minutes after admission, the patient suddenly developed convulsions in all four limbs, trismus, rigid and clenched hands, flexion of the lower limbs, loss of consciousness, and was unresponsive to verbal stimuli. Her blood pressure was 202/104 mmHg, SpO₂ 90%, and heart rate 150 bpm. An oropharyngeal airway was immediately inserted, oxygen administered, and she was placed in the lateral decubitus position with her head turned to the right. Suction was performed to clear the airway. The convulsions stopped after about 2 minutes, and spontaneous breathing resumed, but she remained with an altered level of consciousness and agitation in her limbs. Both pupils were equal, round, and reactive to light. Cardiopulmonary auscultation revealed no significant abnormalities, and no pathological reflexes were elicited. Nicardipine, magnesium sulfate, and a lytic cocktail were used to control

convulsions and hypertension, with high-flow oxygen via face mask. Considering the patient's postictal altered consciousness, normal coagulation function, but potential for a difficult airway, a rapid sequence induction (RSI) general anesthesia protocol was chosen: intravenous injection of propofol (2 mg/kg), remifentanyl (1 µg/kg), and cisatracurium (1.5 mg/kg). A 7.0# endotracheal tube was successfully placed using a video laryngoscope. Two minutes after surgery began, a male infant was successfully delivered (Apgar scores 7-8). The patient's arterial blood pressure was continuously monitored with controlled hypotension. Intraoperative circulation remained stable, and the surgery proceeded smoothly, lasting less than 1 hour, with an estimated blood loss of less than 300 ml and an intraoperative urine output of 50 ml. Postoperatively, the patient was transferred to the ICU. Vital signs, urine output, electrolytes, liver and kidney function, and coagulation parameters were continuously monitored. Treatment included seizure prophylaxis, blood pressure control, sedation, uterotonics, fluid intake restriction, and intravenous ceftazidime for infection prophylaxis. Magnesium sulfate infusion was continued for seizure prophylaxis to prevent recurrent eclampsia. Uterine contraction and vaginal bleeding were closely monitored to prevent postpartum hemorrhage. Peripartum internal environmental changes most commonly included hypoalbuminemia, and pleural effusion was considered to be caused by low albumin levels. Postoperative treatment included intravenous albumin supplementation. Relevant examinations were completed. A head CT scan after the onset suggested posterior reversible encephalopathy syndrome (Figure 2).



Picture 1 Anesthesia note



Picture 2 Cranial Computed Tomography

3. Discussion

The primary cause of eclampsia in patients with preeclampsia is systemic arteriolar spasm. This leads to elevated blood pressure, endothelial cell injury, and increased vascular permeability, subsequently triggering a series of pathophysiological changes such as cerebral edema and increased intracranial pressure^[1]. For patients with preeclampsia, close monitoring for disease progression is essential to promptly identify premonitory symptoms of eclamptic seizure, such as worsening headache, blurred vision, nausea, and vomiting. Proactive administration of medications like magnesium sulfate to prevent eclamptic seizures is crucial^[2].

For parturients experiencing an eclamptic seizure, general anesthesia can rapidly secure the airway,

ensure oxygenation and ventilation, and create favorable conditions for surgery, making it a relatively safe and reliable anesthetic approach. However, general anesthesia also carries risks such as aspiration and hemodynamic fluctuations. Therefore, a series of preventive measures are necessary during anesthesia, including rapid sequence induction and tracheal intubation, and the rational use of anesthetic agents to control blood pressure. Systemic arteriolar spasm reduces gastrointestinal motility, and the sudden increase in intragastric pressure during convulsions can lead to an aspiration incidence as high as 22%^[3]. Traditional fasting guidelines are often inapplicable to emergency eclamptic patients, with empirical assessment error rates reaching up to 40%. The use of preoperative bedside ultrasound can accurately assess gastric emptying

status, optimizing decision-making for general anesthesia. Maintaining hemodynamic stability is a key aspect of anesthetic management for parturients with preeclampsia. Excessively high blood pressure increases the risk of cerebrovascular accidents, while excessively low blood pressure compromises placental perfusion and fetal oxygen supply. During anesthesia, appropriate antihypertensive or vasopressor agents should be selected based on the patient's specific condition, with precise dosage titration.

The management of this patient highlights the importance of multidisciplinary team (MDT) collaboration. The close cooperation among departments, including obstetrics, anesthesiology, ICU, and neonatology provided comprehensive care for the patient. Every step was critical and indispensable, from the emergency management upon admission to anesthetic management during surgery to postoperative intensive care.

Furthermore, the management of this case reminds us that for parturients with high-risk factors such as advanced maternal age and hypertension, prenatal care should be strengthened to promptly identify and manage potential complications. Simultaneously, enhancing healthcare professionals' recognition and vigilance regarding preeclampsia and eclampsia is also key to reducing maternal and perinatal mortality.

Finally, the successful management of this case also relied on the support of advanced medical equipment and technology. For instance, the application of bedside ultrasound in assessing gastric emptying provided a solid basis for optimizing general anesthesia decisions. Concurrently, the continuous intraoperative monitoring of the patient's vital signs and various parameters provided reliable evidence for timely adjustment of the treatment plan.

4. Conclusion

An eclamptic seizure in a parturient with severe preeclampsia is a serious obstetric complication that poses a severe threat to the lives of both mother and infant. Through multidisciplinary team collaboration, strengthened prenatal care, improved awareness and vigilance among healthcare professionals, and the application of advanced medical equipment and technology, we can effectively reduce its incidence and mortality, ensuring the safety of mothers and infants.

Author Contributions

Analysis and interpretation of data, drafting the article for important intellectual content, and final approval: Dan Han.

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Methodology: Dan Han.

Writing - original draft: Dan Han.

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