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Case Report

A DIAGNOSTIC CHALLENGE IN THE DIFFERENTIAL DIAGNOSIS OF RECURRENT SEIZURES DURING PREGNANCY: EPILEPSY VERSUS ECLAMPSIA

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ABSTRACT

Introduction: Seizures during pregnancy are associated with adverse outcomes for mothers and infants. Seizures during pregnancy can be associated with multiple factors. To establish effective treatment and management of seizures, it is important to identify all of the factors that may contribute to seizures during pregnancy. **Objective:** This study aimed to evaluate and identify the cause of seizures in pregnancy to facilitate appropriate treatment. **Case Report:** We present a case of a 32-week pregnant woman who experienced eclampsia and recurrent seizures during the peripartum period. The patient had a history of inadequately managed epilepsy. Seizure management required multiple medications, including magnesium sulfate, benzodiazepine, and phenytoin. The patient underwent an emergency caesarean utilizing the Rapid Sequence Intubation (RSI) procedure and general anesthesia to rescue the baby. Nicardipine, furosemide, isosorbide dinitrate, captopril, spironolactone, and hydrochlorothiazide were used to manage blood pressure. The patient needs to be continuously observed, and the therapy should be adjusted according to the patient's condition. **Discussion:** The patient had a history of epilepsy and had experienced two bouts of generalized seizures with characteristics of eclampsia before being arrived at the emergency room. Determining how to control the seizures in this spesific individual was a challenge. The primary therapy of patients with active seizures should include maintaining the airway, respiration, and circulation. The therapeutic objectives are immediate delivery of a viable fetus and maintenance of maternal health. Perioperative management aims to control blood pressure and seizures, maintain hemodynamics, manage anesthesia for terminating a pregnancy, and support critical care management for any potentially fatal complications from this condition. **Conclusion:** Seizures in pregnancy are attributable not just to eclampsia but can also cause by another or concurrently together with other causes. Early diagnosis and appropriate treatment are required to achieve the best outcome for this patient.

Keywords: Eclampsia, Epilepsy, Pregnancy, Seizure

ABSTRAK

Pendahuluan: Kejang selama kehamilan berkontribusi terhadap luaran ibu dan perinatal yang buruk. Kejang selama kehamilan dapat disebabkan oleh banyak faktor. Untuk menentukan pengobatan dan pengendalian kejang yang tepat, penting untuk mengidentifikasi semua faktor yang mungkin berkontribusi terhadap kejang selama kehamilan. **Tujuan**: Laporan kasus ini bertujuan untuk mengevaluasi dan mengidentifikasi penyebab kejang pada kehamilan untuk mendapatkan tatalaksana yang tepat. **Laporan Kasus**: Seorang wanita hamil 32 minggu mengalami eklamsia dan kejang berulang selama masa peripartum. Pasien mempunyai riwayat epilepsi yang tidak terkontrol sejak sebelum hamil. Pengendalian kejang pada pasien ini memerlukan beberapa obat termasuk magnesium sulfat, benzodiazepin, dan fenitoin. Pada pasien segara dilakukan operasi caesar darurat dengan anestesi umum. Induksi dilakukan dengan Teknik *Rapid Sequence Intubation* (RSI). Beberapa obat yang digunakan untuk mengendalikan tekanan darah diantaranya nicardipine, furosemide, isosorbide dinitrate, captopril, spironolactone, dan hydrochlorothiazide. Pasien memerlukan observasi lanjutan di ruang perawatan intensif (ICU) dan terapi disesuaikan dengan kondisi pasien. **Diskusi**: Pasien mengalami dua kali serangan kejang umum dengan karakteristik eklampsia sebelum tiba di Instalasi Gawat Darurat (IGD). Pasien memiliki riwayat epilepsi sebelumnya sehingga penentuan diagnosis dan tatalaksana pengendalian kejang pada pasien ini merupakan sebuah tantangan. Penatalaksanaan awal pasien dengan kejang aktif harus mencakup pemeliharaan jalan napas, pernapasan, dan sirkulasi. Terminasi kehamilan diperlukan untuk menyelamatkan ibu dan bayinya. Penatalaksanaan perioperatif pasien bertujuan untuk mengontrol tekanan darah dan kejang, menjaga status hemodinamik, tatalaksana anestesi untuk terminasi

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kehamilan, dan manajemen perawatan kritis untuk setiap komplikasi yang berpotensi fatal pada kondisi ini. **Kesimpulan**: Kejang pada kehamilan tidak hanya disebabkan oleh eklamsia saja tetapi dapat juga karena sebab lain atau bersamaan dengan sebab lainnya. Diagnosis dini dan pengobatan yang tepat diperlukan untuk mencapai hasil terbaik bagi pasien ini.

Kata Kunci: Eklampsia, Epilepsi, Kehamilan, Kejang

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INTRODUCTION

Neurological diseases might be directly associated with pre-eclampsia, and eclampsia or may be related to pre-existing conditions such as epilepsy, multiple sclerosis, myasthenia gravis, brain tumors, cardiac, metabolic, and neuropsychiatric conditions. These conditions may cause neurological disorders during pregnancy and the puerperium, exacerbated by the physiological changes occuring during this period (1,2). Identifying the causative factors is important for obtaining appropriate treatment and managing seizures. The most frequent cause of seizures in pregnant women during the pregnancy-puerperal cycle is eclampsia. Eclampsia is commonly defined as the new onset of generalized tonic-clonic seizures or coma in pregnancy or postpartum accompanied by signs or symptoms of preeclampsia (3). The incidence of preeclampsia varies from 0.51 - 38.4%, with prevalence rates in developing countries ranging from 1.8 – 18%, while the incidence rate in Indonesia estimated at approximately 3.8-8.5%. In Indonesia, the Maternal Mortality Rate (MMR) in 2019 reached 305 per 100,000 live births, with severe preeclampsia accounting for 26.47% (76.97 per 100,000 live births) (4). Regardless, in situations that are resistant and have no improvement with conventional treatment, other possible causes of convulsive crises must be investigated or excluded. Epilepsy is one of the most common causes of seizures during pregnancy. Seizure in pregnancy can cause by various factors other than epilepsy or eclampsia, such as cerebral hemorrage, cerebral infarction, drug and/or alcoholic withdrawal, hypoglycemia, hypertensive encephalopathy, intracranial neoplasm, infections, and electrolyte imbalance (5,6). This neurological condition has a lifetime incidence of 1.5% in developing countries and 0.6% in industrialized nations (7). It is estimated that 0.3–0.7% of pregnant women have epilepsy. Women who had seizures in the year before becoming pregnant need to have their epilepsy closely monitored (1). This case report aims to evaluate and identify the cause of seizure in pregnancy to facilitate appropriate treatment.

CASE REPORT

A 28-year-old multigravida was referred to our secondary care facility from a peripheral primary care clinic due to frequent seizures and hypertension. Her medical history indicates that she had suffered inadequately managed epilepsy for 14 years. She was diagnosed with a singleton pregnancy at 32 weeks of gestation, with a history of inadequate antenatal care. The patient's family reported that the patient experienced tonic-clonic movements lasting two to three minutes. She had no previous history of hypertension, nevertheless, she had a history of generalized seizures since 14-years-old and was not on medication. Upon the patient's convulsion at home, the midwife from the public health care facility administered an initial treatment of 4 grams of magnesium sulfate for 20 minutes, followed by a maintenance dose of 6 grams, and referred to the hospital. The glasgow coma

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scale (GCS) at admission was 8 (E2M3V3), blood pressure (BP) measured 176/125 mmHg, heart rate (HR) was 150 bpm, respiratory rate (RR) was 20 times/minute, and temperature was 36.6°C. Laboratory tests at admission showed proteinuria (urine protein 3+) as detailed in table 1 and urine analysis in table 2. In the ER, the patient received magnesium sulfate 1 gram per hour, oxygenated with a non-rebreathing mask of 10 liters per minute, and underwent emergency cesarean section.

The patient was subsequently moved to the surgery room. Before surgery, the patient's condition was unstable. Basic monitoring was performed, which included pulse oximetry, heart rate, electrocardiography, and blood pressure assessment. The initial vital signs were: blood pressure of 171/101 mmHg, heart rate of 113 beats/min, respiratory rate of 29 times/minute in a semi-fowler position, and SpO2 of 98-99% with 10 liters/minute non-rebreathing mask oxygenation. Following preoxygenation, anesthesia was induced with Rapid Sequence Intubation (RSI), comprising midazolam 2 mg, fentanyl 50 mcg, propofol 100 mg, and rocuronium 40 mg, accompanied with cricoid pressure. The trachea was intubated using a cuffed orotracheal tube (7-mm internal diameter). Anaesthesia was maintained with 0.5-1% isoflurane in oxygen at a flow rate of 3 liters/minute. Hydration was maintained with a peripheral intravenous line (Ringer's lactate). The neonate had an Apgar score of 3 at birth. The Apgar score increased to 4 at 3 minutes and 5 at 5 minutes. The neonate was transferred to the neonatal intensive care unit (NICU) for further management under the pediatric supervision. The remaining intraoperative procedures were successfully performed. After completion of the surgery, she was transferred to the intensive care unit (ICU) for observation.

Table 1. Laboratory examination

Examination	Result
Haemoglobin	13.8 gr/dl
Leucocyte	15,200
Hematocrit	40.3%
Platelet	407,000
ALT	31.07 U/L
AST	11.22 U/L
Sodium	134.14 mmol/L
Potassium	4.02 mmol/L
Chloride	95.53 mmol/L
Calcium	0.92 mmol/L
Creatinine	1.27 mg/dl
Ureum	23.97 mg/dl
Bleeding time	2 minutes
Clothing time	9 minutes

Table 2. Urine analysis

Examination	Result
Spesific gravity	1.020
pH	6.0
Urine color	Cloudy yellow
Urine bilirubin	Negative
Urine protein	+++ (3+)
Urine glucose	Negative
Urine ketone	Negative
Blood	+++ (3+)

Following an emergency caesarean section, the patient was moved to the ICU for close monitoring. The patient was treated with continuous magnesium sulfate infusion, analgesia, and a furosemide pump to manage her blood pressure according to the hospital procedure. She was provided with a mechanical ventilator for her respiratory support. Within the next 30 minutes, her blood pressure suddenly increased to 239/136 mmHg. She received a continuous infusion of furosemide and isosorbide dinitrate (ISDN), an additional 25 mg of captopril, hydrochlorothiazide, and spironolactone to manage her blood pressure with an initial target to reduce her systolic blood pressure (SBP) to 160 mmHg and diastolic blood pressure (DBP) to 105 mmHg

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immediately. Nevertheless, it was challenging to regulate her blood pressure. Thus, treatment with titrated nicardipine infusion was administered. During her blood pressure spike, the patient experienced 3 episodes of seizures. She received 2 grams of intravenous magnesium sulfate, followed by continuous infusion of 1 gram per hour and 5 milligrams midazolam intravenously for every seizure episode. However, the seizure continues to persist despite having her blood pressure decreased to 140/83 mmHg (Figure 1).

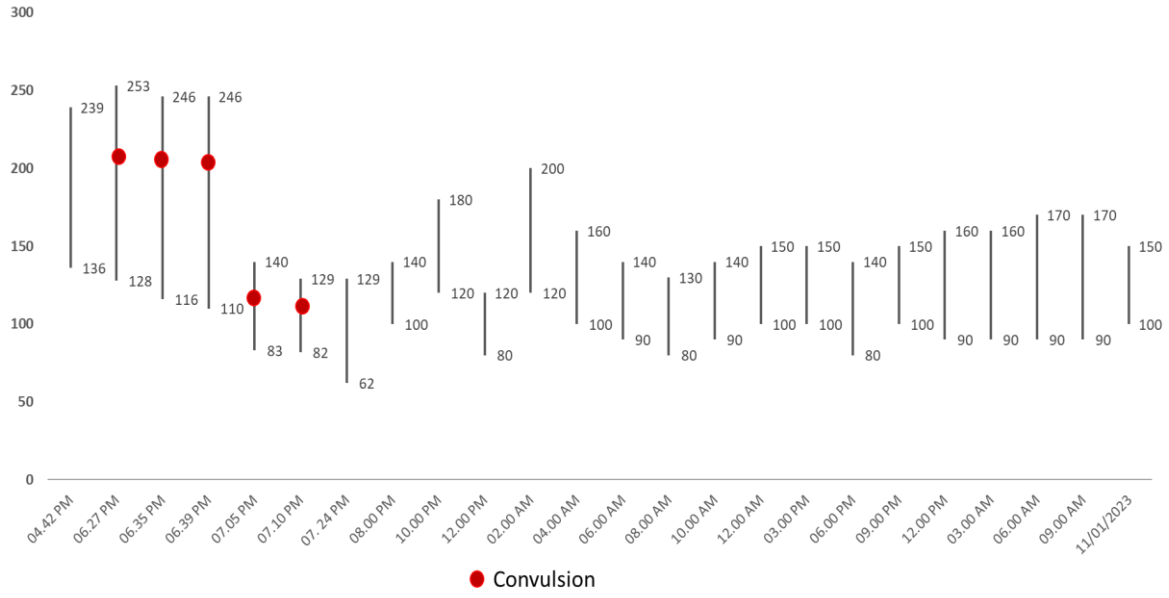

Figure 1. Blood Pressure and Seizure Monitoring

After achieving her blood pressure target, the patient experienced two more episodes of seizure, therefore we presume that the seizure was not purely caused by eclampsia. A loading dosage of phenytoin was administered to manage her seizures. Fortunately, following the injection of phenytoin, her seizures stopped and did not reoccur (Table 3).

The following day, the patient's vital signs were stable, as follows: blood pressure of 156/104 mmHg, heart rate of 103 beats/minutes, respiratory rate of 20 times/minutes, SpO2 of 98%, and a GCS ofE4VxM6, thus she was weaned off the ventilator and extubated. Blood pressure management was tapered off as shown in figure 1. The patient was moved to the regular ward on the same day. Upon follow-up the next day, the seizure did not reoccur and the vital signs were stable, then she was scheduled to have an electroencephalogram (EEG) test. The EEG test indicated that no epileptogenic wave was detected (Figure 1). We evaluated the patient's hemodynamic and clinical condition daily until stability was achieved with oral medication. The patient was hemodynamically and clinically stable, then she was discharged home. Her last medications included amlodipine, spironolactone, hydrochlorothiazide, cefadroxil, mefenamic acid, phenytoin, iron tablet, pyridoxine, and folic acid. The patient was advised to regularly consult with an obstetrician, cardiologist, and neurologist.

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Table 3. Blood Pressure and Seizure Management

Date	Time	Systolic	Diastolic	Note
1 August 2023	04.42 pm	239	136	Furosemide pump 10mg/h, ISDN pump 0.5 mg/h, captopril 25 mg, lisinopril 10 mg, amlodipine 10 mg, HCT 25 mg, spironolactone 25 mg.
	6.27 pm	253	128	MgSO4 2 gr bolus, MgSO4 drip 1 gr/h, midazolam 5 mg
	6.35 pm	246	116	MgSO4 2 gr bolus, MgSO4 drip 1 gr/h, midazolam 5 mg
	6.39 pm	246	110	MgSO4 2 gr bolus, MgSO4 drip 1 gr/h, midazolam 5 mg, nicardipin 1mcg/kg/min
	7.05	140	83	MgSO4 2 gr bolus, MgSO4 drip 1 gr/h, midazolam 5 mg, nicardipin drip stop
	7.10	129	82	MgSO4 2 gr bolus, MgSO4 drip 1 gr/h, midazolam 5 mg, phenytoin 15 mg/kg, phenytoin 3x1 amp
	7.24	129	62	MgSO4 1gr/hr, ISDN drip stop

DISCUSSION

Seizure disorder during pregnancy impact both maternal and perinatal complications. Apart from the idiopathic cause, other factors can induce seizures in pregnancy, such as eclampsia, antiphospholipid syndrome, cerebral infarction, drug and alcohol withdrawal, and hypoglycemia (5). Seizures during pregnancy frequently indicate symptoms of epilepsy or eclampsia. Seizure disorders associated with pregnancy are estimated to affect 0.3% to 0.5% of all pregnancies. Seizures occur during pregnancy are typically diagnosed as eclampsia. Eclampsia is defined by the occurrence of tonic-clonic, focal, or multifocal seizures that occur suddenly and are not attributeable from any underlying medical disorders. Eclampsia typically presents 48 hours after birth and after 20 weeks of gestation (6,8). The prevalence of eclampsia in the Western countries is estimated to be between 1 in 2000 and 1 in 3000 births; however, in developing nations with inadequate prenatal care, the incidence is 10 times greater (9). Eclamptic seizures generally subside within three to four minutes. The majority of patients exhibit a response in 10 to 20 minutes on average (10). Another frequent neurological condition that can arise during pregnancy is epilepsy. In India, over 2.5 million women are diagnosed with epilepsy, with up to 25% of them are within the reproductive age range. In Indonesia, regarding the prevalence of epilepsy during pregnancy, precise statistics are unavailable (6). Although most cases are uncomplicated, there are elevated obstetric risks and more deprived newborn outcomes compared to the general population. The frequency of seizures is increased during pregnancy in one-third of women with epilepsy (6,11). Our patient received inadequate antenatal care, and did not monitor her pregnancy, resulting in an unrecorded medical history during pregnancy, including hypertension. The patient came to the emergency room (ER) with two episodes of generalized seizure with characteristics of eclampsia accompanied by a history of epilepsy. Establishing effective seizures management for this spesific individual was a challenge.

Eclampsia is considered as one of the most severe acute pregnancy illnessesdue to its significant maternal and neonatal morbidity. The pathogenesis of eclamptic seizures remains uncertain. The theory for eclampsia involves alterations to autoregulation in the cerebral circulation, similar to hypertensive encephalopathy, as the blood-brain barrier

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(BBB) is disrupted and fluid, ions, and plasma proteins are able through the brain parenchyma (12). Epileptic seizures may manifest during the prepartum, intrapartum, or postpartum phases. Preeclampsia and eclampsia were presumed to manifest within 48 hours postpartum. Recent studies indicate that late or delayed postpartum eclampsia may occur more than 48 hours but less than 6 weeks after birth.

Pregnancy may cause the worsening of epilepsy. Deterioration during pregnancy may result a variety of factors, including poor compliance, nausea and vomiting, increased volume of distribution, changes in protein binding, increased drug clearance, lack of sleep, decreased absorption of antiepileptic medications from the gastrointestinal tract, hyperventilation during labor, and hormonal fluctuations. Pregnancy is associated with changes in metabolic hormones. Hormones such as progesterone and estrogen might affect the likelihood of seizures during pregnancy. The decrease of blood estrogen levels during pregnancy enhance the activity of the glutamate decarboxylase enzyme, hence diminishing the brain's production of gamma aminobutyric acid (GABA). A reduction in GABA levels in the brain will trigger an epileptic seizure. The physiologic alteration during pregnancy will cause hemodilution. Hormones such as progesterone and estrogen may influence the occurrence of seizures during pregnancy. The lowering of blood estrogen levels during pregnancy enhances the activity of the glutamate decarboxylase enzyme to become more active, which in turn reduces the brain's production of gamma amino butyric acid (GABA). The decrease in GABA levels in the brain will induce an epileptic seizure. Edema and fluid retention may result from diminished glomerular filtration. The hyponatremia develops from the fluid retention. This condition may cause seizures, increade neuronal excitability, and a partial disruption of the sodium pump (4,11,13).

Prolonged seizures exceeding five minutes, or multiple seizures within a five-minute interval without regaining consciousness, are deemed abnormal and carry a considerable risk of developing convulsive status epilepticus, a potentially life-threatening medical emergency that affects approximately 1% of pregnancies in women with epilepsy. Multiple assessments are available diagnosing epilepsy, including the history and neurological examination, neuroimaging with CT-scan and MRI, metabolic and genetic evaluation through the laboratory assay, and EEG, the most common prevalent test that is completely safe and relatively cost-effective (14). An EEG was conducted on our patient and the result indicates the absence of any epileptogenic. This condition can occur because the EEG captures brain activity solely during the testing period. Over 40% of individuals with epileptic conditions may exhibit a normal EEG. While identifying the cause of a brief loss of consciousness or other paroxysmal events clinically suggestive of epilepsy, epileptiform activity exhibits specificity but lacks sensitivity, as EEG sensitivity in epilepsy is relatively low, ranging from 25–56%, with better specificity, but again varying between 78–98%. Imaging is essential for obtaining a better understanding of the pathophysiology of eclampsia. In clinical practice, there should be additional restrictions on the decision to do CT or MR imaging as the first option to exclude hemorrhagic lesions or other serious consequences. Patients who have spesific neurological deficit, evidence of a mass effect, or a reduction in awareness should have CT or MR imaging. Up to 80–90% of women with eclampsia show abnormal neuroimaging results. Most common lesions are located in parieto-occipital lobes in the distribution of posterior

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cerebral arteries. This lesion results from endothelial damage-induced vasogenic oedema, along with other damages that contribute to the pathophysiology of eclampsia. A complex picture of cerebral pathology accompanied by pericapillary hemorrhages, cortical petechiae, cerebral oedema, and microinfarcts, can cause headaches, disorientation, seizures, and visual abnormalities (15). As illustrated by our patient's diminished level of consciousness, CT or MR imaging could be conducted to exclude other reasons or problems; however, due to facility limitations, CT imaging is not a feasible option.

The initial management of a pregnant patient experiencing an active seizure must prioritize the patient's airway, adequate respiration, and appropriate perfusion support. The goals of therapy include maintaining the mother's health, ensuring the immediate delivery of a viable fetus, and providing close attention to the fetus. The anesthetic approach utilized for patients with pre-eclampsia and eclampsia depends on various factors, including the method of delivery (vaginal or cesarean surgery), the patient's medical condition (coagulopathy, respiratory problems), and the patient's level of consciousness. In mild or moderate pre-eclampsia cases, the patient may be allowed to undergo with normal vaginal delivery. In severe pre-eclampsia or eclampsia cases, the patient must deliver the baby immediately.

Regional and general anesthesia may be considered as the anesthesia management for caesarean section. Regional anesthesia may be administered if the patient is conscious, seizure free, has stable vital signs, and has no symptoms of elevated intracranial pressure (ICP). In cases when a patient is unconscious due to factors such as eclampsia or post-ictal state, or when there are other complications including impending eclampsia, significant coagulation abnormalities, anatomical issues with regional block insertion, or infection at regional block site, general anaesthesia (GA) is preferred (16,17). Given that the patient in this case was unconscious and in required an emergency caesarean section, we chose to perform GA utilizing the RSI (Rapid Sequence Induction) approach. RSI is a technique that is used when rapid airway control is required as a precaution for patients who may be at risk of reflux and aspiration of gastric contents. RSI is almost often used in critical situations including unfasted patients or uncertain fasting status, as well as in cases involving trauma, emergency surgeries, resuscitation situations, and patients with diminished consciousness levels (18,19).

Women with eclampsia should be closely monitored for at least 72 hours (12). Magnesium sulfate is used to prevent recurrent convulsions in women with eclampsia. Maintenance infusion of 1–2 g/hour is advised after administering a loading dose either 4 or 6 grams over a duration of 20–30 minutes. Magnesium sulphate infusion should begin before surgery, and continue during the procedure as well as for 24 hours postoperatively (8). However, despite the administration of a maintenance infusion of magnesium sulfate, the patient experienced a recurrence 2 hours after birth. To manage repeated seizures, the patient received a 2 g intravenous (IV) magnesium sulfate bolus, which may be administered throughout 3 to 5 minutes. The patient's creatinine level is higher than 1.2 mg/dL, a maintenance dosage of 1 g/h should be administered after the loading dose of magnesium sulfate (20). However, the necessity of mechanical ventilation for the patient may induce anxiety, agitation, and restlessness might compromise hemodynamic stability. Consequently, the use of midazolam is reasonable in our patients. Midazolam is a

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fast-acting benzodiazepine utilized for sedation and as an anticonvulsant, including eclampsia (21). Midazolam is a benzodiazepine that is currently the recommended first-line drug for treating seizure and status epilepticus. If a patient does not respond to magnesium sulfate (20 minutes after the bolus or more than two recurrences), a health care professional may administer phenytoin (1,250 mg IV at a rate of 50 mg/minute), thiopental, or sodium amobarbital (250 mg IV in 3 minutes) (8).

The global prevalence of hypertension during pregnancy is 5%–10%. A hypertensive emergency is characterized between acute hypertension-mediated organ damage (HMOD) and significantly increased blood pressure. Labetalol or nicardipine, along with magnesium sulfate, is the first-line therapy for hypertensive crises in eclampsia. The initial target in the management of hypertensive emergencies in eclampsia is to decrease the blood pressure to a systolic blood pressure less than 160 mmHg and a disatolic blood pressure less than 105 mmHg. During the blood pressure spike following delivery, the patient received furosemide and isosorbide dinitrate (ISDN) continuous infusion, captopril, hydrochlorothiazide, spironolactone, and nicardipine continuous infusion to reach her blood pressure target immediately. However, despite achieving her blood pressure target, the patient had two more episodes of seizure, therefore we presume that the seizure was not solely attributeable to eclampsia. Epilepsy may contribute to the occurrence of seizures in our patients (22).

Most pregnant woman with epilepsy has a greater risk of complications due to seizures. Complications of pregnancy and labor for mothers with epilepsy significantly increase. Pregnant women with epilepsy had a higher incidence of hemorrhage during pregnancy, pre-eclampsia, labor induction, low birth weight (under 2,500 grams), low Apgar scores (less than 5 after one minute and less than 7 after five minutes), and neonatal mortality (7). Additionally, infant asphyxia happened to mothers who had epilepsy. Sixty percent of infants with low 1-minute Apgar scores developed asphyxia as did 40% of infants with low 5-min Apgar scores. Asphyxia of the infants indicates their potential vulnerability to the adverse effects of anticonvulsant medication. Pediatricians should notify physicians about this risk and provide their assistance. As illustrated by our patient, who had a low Apgar score after birth and an Apgar score of 3, the infant had severe hypoxia and recovered with appropriate resuscitation; nonetheless, the Apgar score remained low and showed severe asphyxia even after resuscitation. Following resuscitation, the infant was transferred to the neonatal intensive care unit (NICU) for continued treatment under medical supervision.

Perinatal asphyxia refers to the inadequate blood flow or gas exchange to or from the fetus during the antepartum, intrapartum, or postpartum periods, potentially resulting in increasing hypoxemia and hypercapnia. Generalized tonic-clonic seizures are detrimental to the developing fetus because of the elevated blood pressure, altered electrolyte levels, and oxygenation during a seizure. During a seizure, an increase in intrauterine pressure also lowers the flow of blood to the uterus. This leads to changes in the blood gas composition within the umbilical artery. Metabolic changes associated with prolonged generalized tonic-clonic seizures may result in fetal harm. Prolonge generalized tonic-clonic seizures can induce fetal bradycardia and could result in fetal demise, even without maternal hypoxia. Furthermore, the American College of Obstetricians and Gynaecologists states that it includes clinical

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conditions such as severe hypoxia and metabolic acidosis.

Acute asphyxia is also possible without leading to any pathological complications. However, a fetus that suffers from acute hypoxia may have metabolic acidosis, characterized by an increase in acid accumulation, and a decrease in tissue oxygenation. Asphyxia may also occur temporarily without resulting any pathological complications. Severe hypoxia in fetus may result in metabolic acidosis, acid accumulation, and a decrease in tissue oxygenation (23).

The limitation of this study since this is a single case report study, making our findings difficult to generalize to the broader population. The recommendation for further studies to arrange case series or cohort retrospective design with larger samples is still needed to confirm these findings.

CONCLUSION

Seizure disorders during pregnancy are associated to an increased risk of negative outcomes for mothers and newborns. A recent study indicates that pregnant seizures are not usually caused by eclampsia. It is important to distinguish atypical symptoms from other reasons, such as epilepsy, when the clinical condition worsens. A better outcome is mainly based on a multidisciplinary approach that includes early diagnosis along with an appropriate therapeutic strategy.

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Conflict of Interest

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Authors' Contributions

All authors contributed significantly in writing this case report.

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