

# Pseudoeclampsia: Convulsion Diagnosed for the First Time During Pregnancy; Eclampsia Versus Epileptic or Psychogenic Seizures

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## Abstract

Herein one case of epileptic and one case of psychogenic seizure occurring for the first time during pregnancy were reported and differential diagnosis and management of convulsion during pregnancy were discussed. Convulsion diagnosed for the first time during pregnancy may present a diagnostic dilemma for the physician. Differential diagnosis for convulsion in pregnancy should include eclampsia, recurrent exacerbation of a preexisting epilepsy, and psychogenic seizure. Eclampsia is a hypertensive disorder of pregnancy associated with edema, proteinuria and convulsion. Since eclampsia carries significant maternal and fetal mortality; the seizures occur in pregnancy, particularly in the third trimester, should be evaluated as an eclampsia until proven otherwise and should be treated as such until the attending physician can perform a proper evaluation.

**Keywords:** pseudoeclampsia, psychogenic seizure, eclampsia

## Yalancı Eklampsi: İlk Kez Gebelik Sırasında Tanı Konulan Konvülsiyon: Eklampsi mi yoksa Epilepsi ya da Psikojenik Konvülsiyon mu?

### Özet

Bu makalede, ilk kez gebelik sırasında ortaya çıkan bir epilepsi ve bir psikojenik konvülsiyon olguları bildirilirken gebelik sırasında ortaya çıkan konvülsiyonların ayırıcı tanısı ve tedavisi tartışıldı. İlk kez gebelik sırasında karşılaşılan konvülsiyonlar tanınan açıdan hekimler için sıkıntıya neden olabilir. Ayırıcı tanıda eklampsi, daha önceden mevcut olan epilepsinin alevlenmesi ve psikojenik sebepler düşünülmelidir. Eklampsi ödem, proteinüri ve konvülsiyonun eşlik ettiği hipertansif bir gebelik hastalığıdır. Eklampsi ciddi bir maternal ve fetal mortalite sebebi olduğu için ilk kez gebelik sırasında tanı konulan konvülsiyonlar aksi kanıtlarıncaya kadar eklampsi gibi düşünülüp o şekilde tedavi edilmelidir.

**Anahtar sözcükler:** eklampsi, psikojenik konvülsiyon

## Introduction

Differential diagnosis for seizure in pregnancy includes a number of syndromes, ranging from a recurrent exacerbation of a preexisting convulsive disorder to toxemia of pregnancy. Therefore, patients with seizure diagnosed for the first time during pregnancy may present a diagnostic dilemma for the physician. Eclampsia is a hypertensive disorder of pregnancy associated with edema, proteinuria and convulsion. Hypertensive disorders complicating pregnancy are common and form one of the deadly triad, along with hemorrhage and infection, that result in much of the maternal morbidity and mortality related pregnancy (1,2). So if the seizures occur in pregnancy, particularly in the third trimester, they should be evaluated as an eclampsia until proven otherwise and should be treated as such until the attending physician can perform

a proper evaluation. It should however be kept in mind that is difficult to distinguish eclampsia from an epileptic seizure. The patient may be hypertensive initially after an epileptic seizure and may exhibit some myoglobinuria secondary to muscle breakdown. Psychogenic seizures are also encountered in the Emergency Department; such apparent convulsive activity is yet another subset of seizure patients who challenge the clinical abilities of physician. Such a working diagnosis demands a rapid evaluation coupled with simultaneous management to reduce the potential morbidity and mortality associated with eclampsia.

We herein report a case of epileptic seizure occurring during antepartum and intrapartum periods, and a case of psychogenic seizure occurring many times in second and third trimesters of pregnancy.

## Case 1

A 21-year-old primigravida had presented to state hospital with convulsive attack. She had had an uncomplicated preg-

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**Table 1.** Differential diagnosis of convulsion diagnosed for the first time during pregnancy

	BP	Proteinuria	Timing	CSF RBC, 0-1000	Other Features
Eclampsia	+++	+++	Third trimester	Protein 50-150 mg/dl	Platelets normal or ↓, RBC normal Low anticonvulsant levels
Epilepsy	N to +	N to +	Any trimester	N	Headach, occasional pelvic phlebitis
CVT	+	-	Postpartum	N	Platelets↓ RBC fragmented
TTP	N to +++	++	Third trimester	RBC, 0-100	Neurofibromatosis
Pheochromocytoma	+++ (labile)	+	Any trimester	N	Oxctocin infusion rate >45 mU/min
Water intoxication	N	-	Intrapartum	N	
SAH	+ to +++	N to +	Any trimester	Gross bloody	

BP: blood pressure; CSF: cerebrospinal fluid; CVT: cerebral vein thrombosis; TTP: thrombotic thrombocytopenic purpura; SAH: subarchnoid hemorrhage; RBC: red blood cell; N: normal.

nancy and had no past medical history of note. Unfortunately she suffered from generalized convulsion both prior 6 hour onsets of labour and during the second phase of labour. She was normotensive at the moment. A putative diagnosis of eclampsia was made and the immediate management of this patient included the administration of diazepam and magnesium sulfate. A single, live healthy female fetus was delivered by using vacuum extraction. Then she was transferred to our obstetrics and gynecology clinic however there remained little evidence to support the diagnosis of eclampsia, other than initial convulsion. On admission, she was alert, conscious, cooperative, and responsive to any questions. The blood pressure was 110/70 mmHg, pulse rate 86/min and respiratory rate 16/min. Laboratory examination including electrolyte series, BUN, Cr, glucose, hematocrit, platelet count, and transaminases were normal. In particularly hypertension, proteinuria, and peripheral edema were absent. During examination of differential diagnosis of convulsion; CT scan of head was requested which revealed occipital infarct (Figure 1). The patient was transferred our neurology unit where she was administered diphenylhydantoin and followed up monthly.

## Case 2

A 21-year-old female was admitted to our hospital for management of presumed eclampsia. The patient, at the 38<sup>th</sup> gestational week of her first pregnancy had presented to the state hospital after experiencing a generalized seizure. Upon arrival at state hospital, the patient was lethargic but arousable. Blood pressure was 120/80 together with trace pitting edema of ankle, and a normal neurologic examination. Laboratory examination including electrolyte series, BUN, Cr, glucose, hematocrit, platelet count, transaminases were normal and the urine demonstrated trace protein. Impression of

physician of state hospital was probable psychogenic seizures, however, eclampsia had not yet been ruled out. At this point the patient was transferred to our clinic. The patient's examination showed no change; electrolytes and glucose were rechecked and remained normal. Blood pressure was ranging 110/70 to 120/90. The neurological examination showed normal motor and sensory finding; reflexes were symmetrically normal. In fact when a profound history was taken from his relatives, it become clearer over a time that she had experienced such a convulsive episode for many time during and before this pregnancy. EEG revealed normal finding and opinion of the consultants was psychogenic seizure. The patient was seen by psychiatrists and then discharged from hospital the next day. She was delivered a healthy child by cesarean section indicated due to protracted labour.

## Discussion

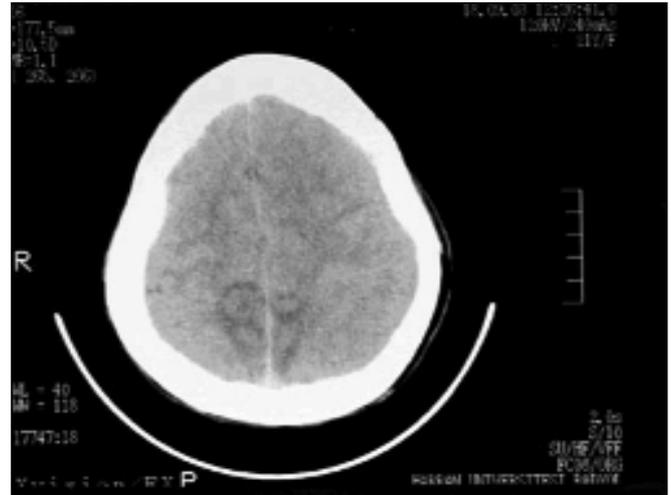
The initial management of patients presenting with active seizure in their pregnancy should include attention to the general emergency precaution: maintenance of airway, observation of satisfactory ventilation and oxygenation and support of adequate perfusion, immediate attention must also be applied to the fetus, particularly if it has reached a viable gestational age. Such a patient should be placed supine on the treatment cot in a partial left lateral decubitus position with a spinal immobilization in place to protect the spine and to insure adequate perfusion to fetus. While an ongoing evaluation is in progress to investigate the organic causes such as central nervous system hemorrhage, central venous thrombosis, thrombotic thrombocytopenic purpura hypoglycemia, pheochromocytoma hypocalcaemia, water intoxication, administration of a parenteral benzodiazepine such as lorazepam or diazepam followed by intravenous diphenylhydantoin

in at conventional doses is a reasonable approach. Parenteral barbiturate such as phenobarbital may be used in cases refractory to these initial pharmacologic agents. If the diagnosis of eclampsia is suspected treatment with intravenous magnesium sulfate is suggested though not universally accepted among the neurologic communities (3).

Patients with seizure diagnosed for the first time during pregnancy may present a diagnostic dilemma because a number of syndromes, ranging from a recurrent exacerbation of a preexisting convulsive disorder to toxemia of pregnancy must be considered in differential diagnosis of seizure. Eclampsia occurs in 0.05 to 0.2% of deliveries representing a significant life threat to the mother and fetus with a maternal mortality of 13% and a perinatal mortality of 10-28% (4). In general, 80% of eclamptic patient experiences the first seizure in the ante- or intrapartum periods. The remainder has the first seizure in the immediate postpartum stage.

The clinical presentation of eclampsia is characterized by the following complaints suggestive of impending convulsion: headache, visual changes and abdominal pain. Physical examination and laboratory finding such as edema, hyper-reflexia, hypertension, proteinuria, and in recent convulsion a metabolic acidosis and elevation of creatine phosphokinase are encountered. All convulsions in pregnancy should not be attributable to preeclampsia. An organic causes and psychogenic etiology of the convulsion must be considered while additional management and evaluation is undertaken. However, the distinction between eclamptic and psychogenic seizures or epilepsy at the bedside may not be so easy. The patient may be hypertensive initially after an epileptic seizure and may exhibit some myoglobinuria secondary to muscle breakdown. On the other hand eclamptic convulsion can occur before the development of preeclampsia, and do so in 30-60% of cases, signs, hypertension, proteinuria, and peripheral edema would be expected to develop over the next 24 hours (5,6). In case 1; when she was transferred to our obstetrics and gynecology clinic, there remained little evidence to support the diagnosis of eclampsia, other than initial convulsion. In particularly hypertension, proteinuria, and peripheral edema were absent. Any patient experiencing seizures for the first time during pregnancy without known cause should undergo some type of intracranial imaging. In our case 1, during examination of differential diagnosis of convulsion, occipital infarct was diagnosed by CT scan of head.

Psychogenic seizures which can be classified in two categories in the psychiatric terminology are yet another subset of seizure patients who challenge the clinical abilities of the physician: a) Conversion disorders and nonepileptic seizures; and b) patients with nonconversion-nonepileptic seizures (7, 8). Conversion disorders, the most common psychiatric disorder found in this group, results from a dynamic conflict causing the abnormal behavior that may not be consciously recognized by the patient; the patient is not consciously feigning the event. A history of childhood sexual abuse is frequently encountered in these patients (7, 8). Although no cha-



**Figure 1.** Cranial CT scan of case 1 is showing cerebral infarct.

racteristic infallibly differentiates an epileptic seizures from a psychogenic convulsion, following findings may suggest the diagnosis of psychogenic seizure: 1- forward pelvic thrusting, particularly in female patients (9); 2- fluctuating, non-rhythmic, out-of-phase clonic activity; 3- wild and variable posturing 4- absence of incontinence and tongue biting 5- gradual onset without an orderly sequence or march (10); 6- a normal Babinski response (11) 7- tearfulness (12).

Seizure diagnosed for the first time during pregnancy, especially in the third trimester of pregnancy must be evaluated and treated as an eclampsia until proven otherwise. However, all convulsions in pregnancy should not be attributed to preeclampsia and organic and psychogenic causes of the convulsion should be carefully evaluated after emergency precautions are undertaken.

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