

PSYCHOGENIC NON-EPILEPTIC SEIZURES FOLLOWING EPIDURAL ADMINISTRATION

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Objectives

- Discuss the differential diagnosis for a patient presenting with new-onset seizures in pregnancy.
- Define and contrast psychogenic non-epileptic seizures (PNES) versus epileptic seizures.
- Define eclampsia and discuss how PNES can mimic it.
- Discuss the diagnostic challenges associated with a patient presenting with a seizure-like episode and the current approach to treatment.

Introduction

- The differential diagnosis for new-onset seizures in the third trimester includes but is not limited to the following:
 - Eclampsia
 - hypoglycemia,
 - Stroke
 - intracranial hemorrhage
 - PNES
 - cerebral venous sinus thrombosis (CVST)
 - hypertensive encephalopathy
 - posterior reversible encephalopathy syndrome (PRES)
 - meningitis or encephalitis
 - Sepsis
 - new-onset epilepsy
 - intracranial tumor.
- Psychogenic non-epileptic seizures (PNES) mimic epileptic seizures but show normal electroencephalogram (EEG) activity. They are often triggered by emotional or physical distress and are a type of conversion disorder.
- PNES is more common in females between 20-40 years of age.
- Eclampsia is a medical emergency, characterized by hypertension, proteinuria, seizures, and/or coma. It is a severe complication with significant risk of maternal and fetal morbidity and mortality, and the only definitive treatment is immediate delivery.

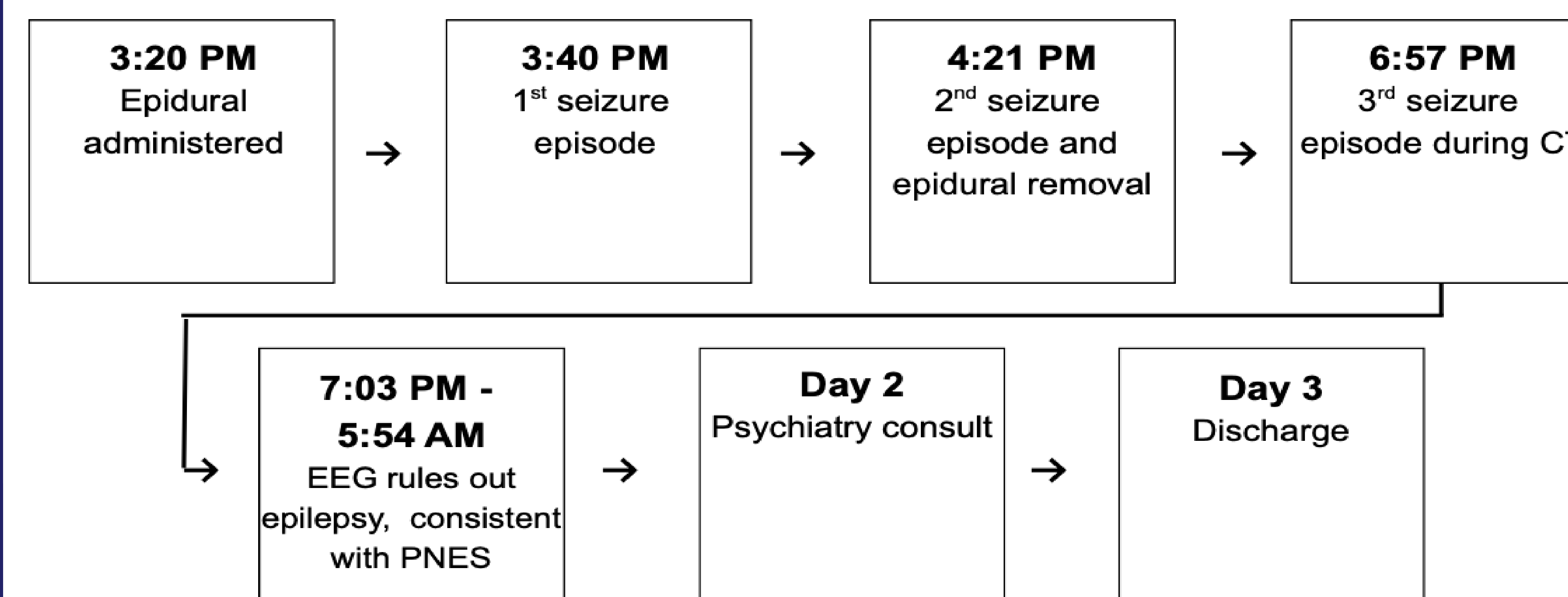
Case Description

A 34-year-old G4P1203 at 30 weeks of gestation presented with contractions, severe abdominal pain, and nausea/vomiting. Sterile vaginal exam (SVE) revealed a closed cervix. The patient was given 1 mg IV hydromorphone followed by 4 mg IV morphine 2 hours later with no pain relief. Magnesium, penicillin, and steroids were administered following a SVE revealing cervical progression to 1 cm in the setting of frequent painful contractions. Patient requested an epidural that was administered at 3:20 pm. The patient then became hypotensive to 76/25 mmHg. She received 15 mg of IV ephedrine and an IV fluid bolus, with improvement in blood pressure.

She then expressed difficulty breathing and appeared to have altered consciousness. At 3:40 pm, she began having a seizure-like episode. The seizures ceased with 10 mg IV diazepam, followed by an apparent post-ictal state. Approximately 30 minutes later, the patient was responding to commands. She had a one-time blood pressure of 150/111 mmHg during one of her seizure-like episodes. However, no additional signs or symptoms of pre-eclampsia with severe features were noted. Her lactate was normal. At 4:21 pm, a second cluster of seizure-like activity occurred. She was administered 10 mg IV diazepam, along with 5 mg IV midazolam and the seizure-like activity terminated at 4:22 pm.

The epidural was removed following this second episode. Neurology was at bedside at 4:53 pm and recommended 4500 mg levetiracetam loading dose, 5 mg IV midazolam for seizures > 2 min in duration or a cluster of seizures. Computed tomography (CT) scan of the head was negative. CT spine was unremarkable but for a small amount of air near L1 and L2 secondary to recent instrumentation.

The patient had two additional seizures in the CT scanner, one of which was treated with 5 mg IV midazolam. She met criteria for status epilepticus. The episodes continued throughout the night, though less frequently. A continuous video electroencephalogram (EEG) revealed no correlating epileptiform activity, consistent with a diagnosis of PNES. MRI was obtained and ruled out PRES. Psychiatry was consulted. She described the episodes as panic attacks. Coping mechanisms for anxiety management were discussed. There were no further signs of PNES. The patient was discharged on the third day of admission, with resolution of symptoms.



Conclusions

- The management of a pregnant patient presenting with new-onset seizure includes immediate stabilization of the airway, IV access, pharmacologic treatment for seizure control, lab work, imaging to rule out head trauma, and EEG.
- **Features of PNES:** prolonged duration (often >2 mins), eyes closed is highly specific, gradual onset with preceding fear/panic/alterd mental status, asynchronous movements (side to side head shaking, pelvic thrusting, back arching), and rapid postictal recovery with absence of confusion
- **Features of epileptic seizures:** sudden onset, 1-3 min of generalized tonic-clonic seizures, eyes open, apnea, cyanosis during episodes, slow postictal recovery, tongue biting
- **Features of eclamptic seizures:** tonic-clonic lasting approximately 1 min
- PNES is a diagnosis of exclusion; the gold standard for diagnosis is via normal video-EEG monitoring.
- PNES is commonly comorbid with psychiatric disorders and stress, highlighting the importance of evaluating and addressing needs, fears, anxieties, barriers to care.
- Eclampsia can present suddenly, making correct diagnosis imperative to prevent iatrogenic preterm delivery in the setting of PNES.
- There is limited data on PNES in the setting of pregnancy. More research is needed to bring further awareness and improve maternal outcomes.

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