Case Report

Post eclampsia Sudden Cardiac Arrest (SCA): A Rare Etiology

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1. Introduction

Eclampsia is the occurrence of seizures after 20 weeks of pregnancy up to the 10th postpartum day commonly associated with preeclampsia, although 40% of eclampsia patients will not show any premonitory symptoms and signs [1, 2]. The overall incidence of eclampsia is showing increasing trends with incidence from the world and Middle East region reported to be 3.2/10000 deliveries [2]. Eclampsia had remained a significant cause for maternal and fetal mortality over decades [1, 2].

Eclampsia mortality and cardiac arrest are reported to be secondary to cerebrovascular accidents, posterior reversible encephalopathy syndrome, and neurogenic pulmonary edema [1–3]. Sudden cardiac arrest (SCA) in eclampsia is rarely reported [4]. We report a case of SCA in a morbidly obese eclampsia patient due to respiratory apnea.

2. Case

A 35-year-old morbidly obese (BMI 61) patient (there was no history of apnea attack in her usual days), gravida 6 para 4 with 4 previous lower section caesarean sections (LSCS), in 38 weeks of gestation, presented to the women’s hospital emergency with hypertension (blood pressure (BP) 160/96 mmHg) and proteinuria (2+). Labetalol infusion was started to control the hypertension. Enoxaparin was started for DVT (deep venous thrombosis) prophylaxis. She had LSCS and tubal ligation under epidural anesthesia. The perioperative period was uneventful, and she was continued on labetalol infusion and epidural analgesia in the HDU (high-dependency unit). Her complete blood count, haematocrit, and serum electrolytes were within normal range. On postoperative day 1, the patient was fully awake and stable. Labetalol infusion was stopped and shifted to oral labetalol, and...
epidural catheter was removed. Suddenly, she had tonic-clonic seizures lasting for 1 minute with hypertension (BP = 200/110). She was diagnosed to have postpartum eclampsia and was given a loading dose of magnesium sulphate (2 g) (MgSO₄), and infusion of MgSO₄ and labetalol started. The patient was arousable, and BP decreased to around 140/80 mmHg. After 30 minutes, she had a 2nd episode of seizures, she was already on oxygen supplementation, and oral airway was inserted and tilted to one side. The seizure activity subsided in one minute. We noticed that she was apnoeic, cyanosed, and went into cardiac asystole. Immediate CPR (cardiopulmonary resuscitation) started with bag-mask ventilation. Code blue team was activated. ROSC (return of spontaneous circulation) was achieved in 3 minutes of CPR, but the patient was not awake; it was decided to intubate her; the laryngeal mask was initially inserted, and under the effect of propofol, fentanyl, and rocuronium, intubation with video laryngoscopy was tried but failed. Subsequently, in the 2nd attempt with direct laryngoscopy, we were able to intubate her trachea successfully. There was no edema of the vocal cords or surrounding structures. On chest auscultation, there were no added (rhonchi or crept) sounds and equal air entry. The patient was shifted to an intensive care unit (ICU) bed and connected to a ventilator with sedation and analgesia. The patient remained stable and was restarted on labetalol infusion and continued on MgSO₄ infusion. The patient remained stable and awake. On day 3, invasive lines were removed, labetalol and MgSO₄ infusions were stopped, and oral labetalol 200 mg three times per day was started. The patient was transferred to the ward on day 4; from there she was discharged home to be followed in an outpatient clinic. She was comfortable during the follow-up after 4 weeks, she remained on oral labetalol, and her repeat echocardiogram was normal.

3. Discussion

Sudden cardiac arrest (SCA) after seizure activity is defined as the absence of pulse or cardiac arrest within one hour of the event [5]. SCA following seizures is not reported in the literature. The frequent morbidities in eclampsia patients are abruptio placenta, pneumonia, HELLP syndrome, acute kidney injury, pulmonary edema, cerebrovascular accidents, or PRES (posterior reversible encephalopathy syndrome), and most of the mortality and secondary cardiac arrest are reported secondary to PRES, cerebrovascular accidents, pulmonary edema, or acute kidney injury [1–3, 6]. We can find an older case report of SCA in an eclampsia patient due to magnesium sulphate (MgSO₄) overdose; this report was from the initial days of using MgSO₄ in eclampsia patients. Presently, MgSO₄ is commonly used as an anticonvulsant in eclampsia patients due to efficacy, safety, and cost-effectiveness [2]. In our patient, serum MgSO₄ levels were not high and they were slightly lower than the protocol range (2-3 mmol/L).

The epilepsy literature describes well the occurrence of SCA after tonic-clonic convulsions, commonly due to the various cardiac arrhythmias ranging from bradycardia, asystole, and atrial fibrillation to ventricular fibrillations in the postictal period [7]. Our patient was on continuous
ECG monitoring, and there were no cardiac arrhythmias prior to asystole.

Central apnea syndrome is characterised by cessation of spontaneous breathing drive in the postictal states [7, 8]. Seizure activity is known to cause central apnea by direct flow of electric discharge to the respiratory centres [7, 8]. van der Lende et al. found only 8 cases of central apnea syndrome following the seizure activity before proceeding into asystole and SCA [7]. Recently, Seo and Sung reported a case of near-miss unexpected death in an epileptic patient due to postconvulsion central apnea [8]. We witnessed in our patient apnea and cyanosis prior to the cardiac arrest; hence, it was postseizure cessation of breathing leading to SCA. Our patient was obese with high body mass index, prone to have obstructive sleep apnea, which may be an added risk along with the central cause for cessation of spontaneous breathing activity.

The concluding lines from our case report are that eclampsia patients can have apnea after tonic-clonic convulsions, which can complicate into SCA, and the airway can be difficult to secure. A multidisciplinary team approach is essential for the better outcome in these situations.

Data Availability

The data used to support the findings of this study are available upon request.

Conflicts of Interest

The authors declare that there is no conflict of interest.

Authors’ Contributions

Dr. Nissar Shaikh (NS) wrote the manuscript. Dr. Shoaib Nawaz (SN) and Dr. Muhammad Zubair (MZ) collected the case details. Dr. Arshad Chanda (AC) and Dr. Seema Nahid (SN) reviewed the manuscript. Dr. Firdous Ummunnisa (FU) wrote and reviewed the manuscript.

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