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A RARE CAUSE OF MATERNAL CARDIAC ARREST: IDIOPATHIC VENTRICULAR FIBRILLATION

NADİR BİR MATERNAL KARDİYAK ARREST NEDENİ: İDİYOPATİK VENTRİKÜLER FİBRİLASYON

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Letter to editor

Dear editor;

Severe preeclampsia is one of the serious hypertensive disorders of pregnancy and is significantly associated with cardiovascular morbidity during delivery. Also, the risk of cardiac arrest is higher in this patients[1]. Sudden cardiac arrest (SCA) usually develops due to ventricular fibrillation (VF) or rapid ventricular tachycardia (VT) in the presence of cardiac pathologies[2]. Idiopathic VF (IVF) is a resuscitated cardiac arrest with documented VF without known cardiac, respiratory, metabolic, toxicological etiology[3]. Maternal cardiac arrest (MCA) is a rare condition but may occur even in the best medical health care systems; fast and specified intervention is required[4].

In this case report, we aimed to present our postpartum patient who developed cardiac arrest due to IVF, which is rare in maternal cardiac arrest, and underwent successful cardiopulmonary resuscitation.

A 29-year-old, 25-week-old preeclamptic, twin pregnancy female patient was admitted to the intensive care unit after a cesarean section. It was learned that the patient was pregnant with in vitro fertilization and did not have any systemic disease. The patient, hospitalized in the obstetrics clinic due to severe preeclampsia and

albuminuria at the 24th week of pregnancy, was discharged with alpha-methyldopa after blood pressure regulation. She was readmitted to the hospital with hypertensive crisis and acute renal failure one week later. One of the fetuses was intrauterine exitus; the patient underwent cesarean section (C/S) with spinal anesthesia. The operation was completed with no complications. The patient was accepted to the intensive care unit (ICU) with hypertensive crisis, acute renal failure, oliguria, hyperkalemia (Serum potassium level: 6.6 mmol/ L), and diplopia in the early postoperative period. In the ICU, blood pressure was regulated with glyceryl trinitrate infusion, hyperpotassemia treated with glucose-insulin infusion, and during the follow-up, renal failure regressed without dialysis. The patient was examined with cerebral magnetic resonance imaging because of diplopia to exclude neurological disorders, and no pathology was detected. At the 6th hour of ICU follow-up, the patient developed witnessed VF. A successful cardiopulmonary resuscitation (CPR) was applied. Two milligrams of adrenalin were applied during CPR, and after the second defibrillation return of spontaneous circulation was observed. The patient was extubated with complete neurological recovery at the 8th hour of successful CPR. In electrocardiographic evaluation, the QT interval was found to be normal (corrected QT: 367 ms-Figure 1). The patient was diagnosed with IVF due to the absence of an electrolyte abnormality or structural cardiac abnormality in echocardiography. On the further cardiologic evaluation, an indication for ICD implantation was made. Nevertheless, the patient did not accept ICD insertion. After six days in ICU, the patient was transferred to the obstetric ward.

Severe preeclampsia is one of the serious hypertensive disorders of pregnancy and is significantly associated with cardiovascular morbidity during delivery. It is reported that preeclampsia develops 2-3 times more in twin pregnancies compared to singleton pregnancies, progresses more severely. Also, the risk of cardiac arrest is higher in this patients[1].

SCA usually develops due to VF or rapid VT in the presence of cardiac pathologies such as cardiomyopathy, long QT syndrome, valvular or congenital heart diseases[2].

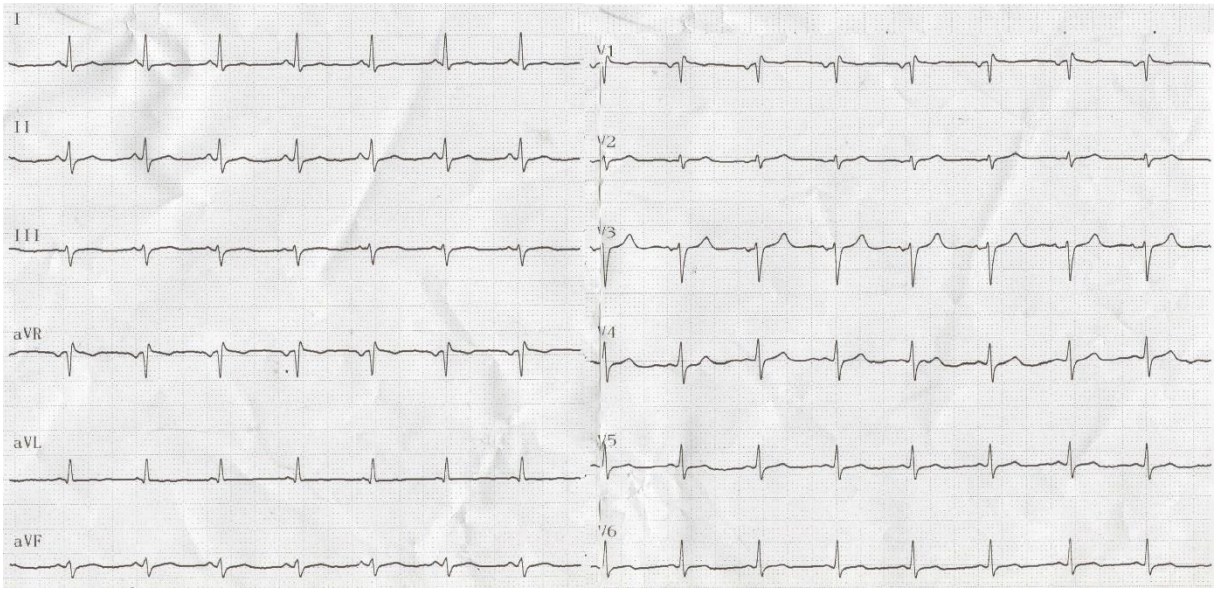

Figure 1. Example of a full 12-lead electrocardiogram (ECG)

IVF is a resuscitated cardiac arrest with documented VF without known cardiac, respiratory, metabolic, toxicological etiology[3]. During the last three decades, distinct clinical entities have been recognized, and the spectrum of IVF has been narrowed. Diagnostic assessment of SCA survivors and genetic analysis contributed to this development.

Diagnoses such as Brugada syndrome, catecholaminergic polymorphic ventricular tachycardia, and long QT syndrome are not interpreted as 'idiopathic' anymore[5]. Extensive diagnostic assessment is essential in unexplained SCA survivors. There was no structural cardiac pathology defined in our patient, and she was diagnosed with IVF.

Maternal cardiac arrest (MCA) is a rare condition but may occur even in the best medical health care systems; fast and specified intervention is required[4]. MCA is reported in approximately 1 in 12000 deliveries in the USA, mostly due to hemorrhage, heart failure, amniotic fluid embolism, sepsis, and anesthesia complications. Although survival depends on the underlying etiology of arrest, outcomes are defined better than the other causes of cardiac arrest[6,7].

In our patient, the development of witnessed cardiac arrest in the intensive care unit and rapid intervention resulted in successful CPR.

We present our postpartum patient who developed idiopathic ventricular fibrillation, one of the rare causes of MCA. Rapid and successful intervention in cardiac arrest in the intensive care unit has determined the maternal prognosis. We think that this case will contribute to raising awareness about the causes of MCA.

Ethical Approval:
For this study, it is a letter to the editor and does not need the approval of the ethics committee. Approval was obtained from the patient for this letter.

Conflict of Interest:
Authors declared no conflict of interest.

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