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Case report

Arythmogenic cardiomyopathy of the right ventricle that affects left ventricle in maternity with malignant heart rhythm disorders

Sanja Stojkovic[1], Jelena Djokovic[1], Nikola Šobot[1], Tamara Kovačević-Preradović[1]

Clinic for Cardiology, University Clinical Center, Banja Luka, Republika Srpska, BiH

Abstract **Introduction**: The most common cause of acute cardiac insufficiency in maternity is peripartal cardiomyopathy. It should not be forgotten that other cardiomyopathies may also occur after delivery in the form of acute cardiac failure. Our patient has an arythmogenic cardiomyopathy of the right ventricle (ARVC) with affected left ventricle with the first manifestation in the form of rapid ventricular tachycardia.[1,2,3] In the therapy, the same principles of modern treatment are applied as in other patients as according to valid recommendations. If the symptoms occur before birth, no medication is given for the treatment of acute cardiac insufficiency, which are contraindicated in pregnancy. Due to the high metabolic demands of the mother, it is insisting on interrupt breastfeeding.

Conclusion: In pregnant women and women with acute cardiac failure, other possible cardiomyopathies should be considered, apart from peripartal cardiomyopathy. It is necessary to respond quickly and treat the patient therapeutically according to the current recommendations for the treatment of acute cardiac insufficiency.

Key words ARVC, acute heart failure, maternity, modern treatment

Introduction

In developed countries, cardiovascular diseases have become almost unusual in women who are in the best reproductive years. The reason for this is a decrease in the number of cases of rheumatic fever, damaged heart that occurs in childhood. Only about one percent of women with heart disease die at birth or after it. The reason is heart failure and malignant heart rhythm disorders. However, due to improved diagnostic methods and treatment options, most women with heart disease can have healthy baby's birth without risks. In pregnant women there is a change in the bloodstream during pregnancy that burdens the heart, and after delivery, there are problems with acute heart failure, often complicated with heart rhythm disorders.

Case report

Female patient, age 33, who gave birth by caesarean section after a neatly controlled pregnancy. Three months after delivery, she was hospitalized in the intensive care unit due to haemodynamic unstable VT, with signs of heart failure, bilateral pleural effusions and ascites. (Figure 1). She was on the inotropic support of Dobutamine and Noradrenaline with antiarrhythmics and other supportive therapy. On the transthoracic echocardiography (TTE), the left ventricle was normal size (50/33 mm). The ejection fraction is estimated to be around 30%. The right ventricle was expanded (up to 31 mm) with indicated trabeculization. Since then, she has been treated under the diagnosis of peripartal cardiomyopathy with Bromocriptine therapy. In the same year, coronarography was done and was normal on coronary blood vessels.

The ICD apparatus-secondary prevention is implanted. On the next electronic control of the device, activation of the ICD apparatus was recorded, due to the fast VT episode with the delivered two DC shock. Telmisartan, Carvedilol, Ivabradine, Torasemide, Spironolactone and Amiodaron were introduced in the therapy. After six years of outpatient monitoring, the patient was again hospitalized due fatigue with minimal effort. The radiography of the lungs had a pleural effusion on the left, and on the ultrasound of the abdomen ascites. CT was made and it was not a sign of pulmonary embolism. TTE was made: left atrium of normal size (30 mm), MR 1-2 +. The left ventricle in normal size in the diastole (43/33 mm), EF estimated at 25% (Simpson 24%). The right atrium is dilated (area 32 cm2), the right ventricle is dilated (plax 43 mm, A4C 47 mm) (Figure 2). The top and free wall of the right ventricle is a trabecular structure and the free wall of the right ventricle is a weakened systolic function (TAPSE 15mm). At the top of the right ventricle, small extensions that impose themselves are visible as microaneurysms. Doppler registers tricuspid regurgitation 3+ with systolic pressure of the right ventricle 30 mmHg, visible ICD electrode.

Corresponding author: Sanja Stojkovic, Clinic for Cardiology, University Clinical Center, Banja Luka, Republika Srpska, BiH, E mail:drsanjastojkovic@gmail.co, Tel:+38765607836

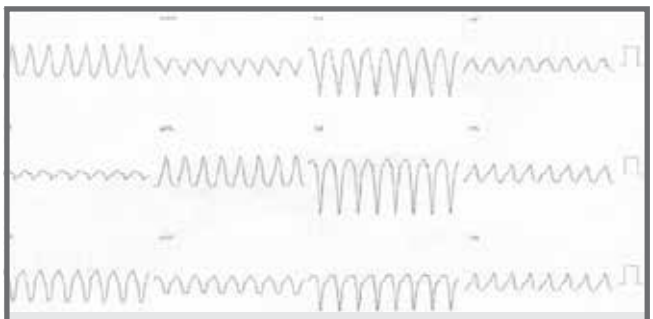

Figure 1. Tachycardia ventricularis

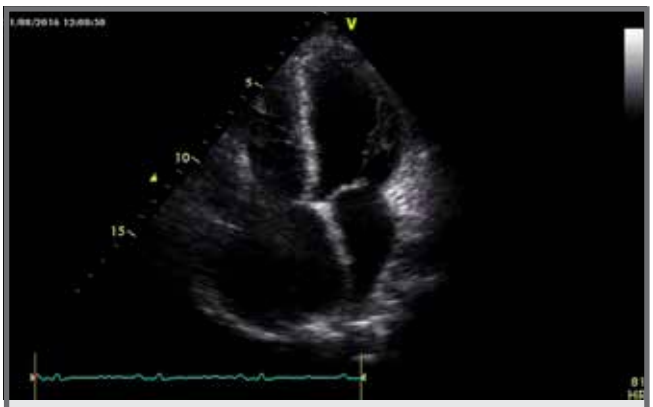

Figure 2. ARVC

Discussion

At the beginning, we thought that the patient was about peripartal cardiomyopathy, with left ventricular failure and at the late stage of the disease failure in the right ventricle, with a dilated, stretched right ventricle and pronounced trabecularization. However, considering the right ventricle description, we finally diagnosed ARVC (there are 1 major and 1 minor criterion), with the explanation that the diagnosis can not be verified with certainty due to limited diagnostics.[4,5,6] ECG due to low voltage is not adequate for analysis. Myocardial biopsy is high-risk in this stage of the disease. NMR heart is contraindicated due to the presence of ICD.

Conclusion

Evidently failure of the left ventricle in this case would be interpreted as an ARVC with the predominantly affected left ventricle (described in the literature)[7,8,9]. The patient was discharged from the hospital with diagnosis of ARVC with the treatment Ivabradin (2x5 mg), Carvedilol (2x12.5 mg), Zofenopril (2x7.5 mg), Trimetazidine (2x35 mg), Edemid F (1x125 mg), Torasemide (1x10 mg) , Spironolactone (1x25 mg). Cardiac transplantation is indicated to the patient.

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Sažetak

Aritmogena kardiomiopatija desne komore sa zahvatanjem i leve komore kod porodilje sa malignim poremećajima srčanog ritma

Sanja Stojković[1], Jelena Đoković[1], Nikola Šobot[1], Tamara Kovačević-Preradović[1]

[1]Klinika za kardiologiju, Univerzitetski klinički centar, Banja Luka, Republika Srpska, BiH

Uvod: *Najčešći uzrok akutne srčane insuficijencije kod porodilje je peripartalna kardiomiopatija. Ne treba zaboraviti da se i druge kardiomiopatije mogu ispoljiti nakon porođaja u vidu akutnog srčanog popuštanja. Kod naše pacijentice se radilo o aritmogenoj kardiomiopatiji desne komore (ARVC) sa zahvatanjem i leve komore sa prvom manifestacijom u vidu brze ventrikularne tahikardije. U terapiji se primjenjuju isti principi savremenog lečenja kao i kod drugih pacijenata, prema važećim preporukama. Ukoliko su tegobe nastupile pre porođaja, ne daju se lekovi za terapiju akutne srčane insuficijencije, oni su kontraindikovani u trudnoći. Zbog visokih metaboličkih zahteva porodilje, insistira se na prekidu dojenja.*

Zaključak: *Kod trudnica i porodilja sa manifestacijom akutnog srčanog popuštanja treba razmišljati i o drugim kardiomiopatijama osim peripartane kardiomiopatije. Potrebno je brzo reagovati i pacijentkinju zbrinuti terapijski, prema važećim preporukama za tretman akutne srčane insuficijencije.*

Ključne riječi: *ARVC, akutno srčano popuštanje, porodilja, savremeno lečenje.*