Cardiogenic shock and lower limb Necrosis after delivery: Peripartum cardiomyopathy was incriminated

Anass Hbali, Ikbal Alla, Mostafa Aziouaz, Noha El Ouafi, Nabila Ismaili
Mohammed IV teaching hospital, Department of cardiology, Oujda, Morocco.

ABSTRACT
Peripartum cardiomyopathy is a rare disease accountable for giving a heart failure, which affects women in the last month of pregnancy or within the first 5 postpartum months. Early signs and symptoms of heart failure may not be seen, they are often considered as a normal part of pregnancy. When such symptoms and signs are not diagnosed or managed accurately, the consequences can be deleterious for the patient. We are going to briefly report a case of a 28-years-old woman, without any preexisting structural heart disease. The woman, after 3 months of vaginal delivery following normal pregnancy, was admitted for cardiogenic shock and distal lower Limb Necrosis secondary to peripartum cardiomyopathy. Such complications are uncommon, and the management was not easily accepted by the patient.

Chest X-ray at admission had features of cardiomegaly and pulmonaryedema. Laboratory analysis revealed an inflammatory anemia at 9 g/dl, alteration of liver function tests and a functional renal insufficiency.

Echocardiography findings were consistent with biventricular dilated cardiomyopathy with left ventricular end diastolic dimension(LVEDD) of 61mm, global hypokinesia with severely depressed pump function (left ventricular rejection fraction(LVEF) of 17%), increased left ventricular filling pressure, the cardiac index was 1.5 L/min/m² “Fig. 1, Fig. 2”.

Figure 1. M-mode transthoracic echocardiography on long-axis view showing dilated LF with LVEDD of 61 mm and severe systolic dysfunction.
Distal pulses were weak but present. The radiological examinations did not show an arterial disease (Arterial embolism or atherosclerosis) upstream of the necrosis, it was secondary to low cardiac output.

In the absence of viability, the amputation of the toes was indicated with debridement of necrotic wounds.

At the first follow-up, the young woman was clinically stable without significant LVEF improvement. The wound healing is in progress, but she reported symptoms of clinical depression because of the acute onset, severity, and prognostic uncertainty associated with her disease.

**Discussion**

Peripartum cardiomyopathy was first defined and described in year 1971 [4] by the following criteria: (1) development of heart failure (HF) in the last month of pregnancy or within the first 5 postpartum months, (2) absence of a determined etiology, and (3) absence of a demonstrable heart disease before the last month of pregnancy.

The incidence has been reported to vary by geographical location with rates ranging from 1:15,000 pregnancies in the United States, to as frequent as 1:299 in a well-studied population in Haiti and 1:100 in a small region in Sub-Saharan Africa [5].

Risk factors include older age, parity, African origin, toxemia or hypertension of pregnancy, use of tocolytics, twin pregnancy, obesity and low socioeconomic status. However, 24–37% of cases may occur in young primigravidas.

Although the etiology and pathogenesis of PPCM are still unknown, several hypotheses have been proposed, comprising viral myocarditis, apoptosis and prolactin toxicity, autoimmune mechanisms, malnutrition, hormonal changes, a result of complex interactions of pregnancy-associated factors against a susceptible genetic background [6].

Many of the signs and symptoms of PPCM are similar to those of HF caused by other factors. Because normal pregnancy is often associated with signs and symptoms that can resemble those of HF, the diagnosis of PPCM is often missed or delayed [3].

An electrocardiogram usually shows sinus tachycardia and nonspecific ST-segment and T wave changes. LV hypertrophy and conduction abnormalities can also be seen. A chest radiograph commonly demonstrates cardiomegaly, pulmonary venous congestion, and occasionally pulmonary edema and pleural effusion [7].

The gold standard for the diagnosis of PPCM is the echocardiography. Echocardiographic criteria include an ejection fraction less than 45%, LVEDD greater than 2.7 cm/m², and fractional shortening of less than 30% [8].

Cardiac MRI has been used in a limited number of PPCM patients for the assessment of cardiac function and the detection of mural thrombi or myocardial fibrosis [9].

PPCM can be associated with severe complications, including pulmonary edema, cardiogenic shock, arrhythmias, thromboembolic events, and mortality [3]. Presentation with cardiogenic shock as our case is uncommon, but may require mechanical circulatory support as bridge to recovery or transplantation [10]. Distal necrosis of the lower limbs was secondary to low cardiac output.

PPCM is known to have high mortality, ranging from 15 to 50% [11]. Overall, cardiac function tends to return to normal in about 23–41% of cases [12].

There is still much to learn, but among the greatest advances have been an increased awareness of PPCM; and the application of the combination treatment of b-blockers
The efficacy and safety of bromocriptine in PPCM patients have been evaluated in only one controlled randomized clinical trial [4]. More information is needed to clearly establish the safety and efficacy of this therapy for the treatment of PPCM [18].

Up to date, research on PPCM has largely focused on survival and little is known about long-term behavioral or psychosocial outcomes. Given the acute onset, severity, and prognostic uncertainty associated with PPCM, women appear to have an inherently higher risk for poor psychological outcomes, depression in particular [19].

Conclusion

As previously demonstrated with the patient in the case report. It is crystal clear that towards the end of pregnancy or after delivery, the possibility of developing cardiomyopathy with high mortality and severe complications does exist despite entering pregnancy without preexisting heart disease. Therefore, making an earlier diagnosis and Aggressive medical is crucial for a good outcome.

Conflict Of Interest

The authors report no relationships that could be construed as a conflict of interest.

Reference


