ISSN: 2755-1067

Journal of Diseases Disorders & Treatments

SCIENTIFIC Research and Community

Case Report

Open Access

Conservative Management of a Case of Peripartum Cardiomyopathy in a Young Woman: Case Report

Priya Pratapan Nair[1]* and Snehal Deshmukh[2]

[1]Assistant Professor, Department of Obstetrics and Gynaecology, Datta Meghe Medical College and Shalinitai Meghe Hospital and Research Centre, Wanadongri, Hingna, Nagpur, Maharashtra, India-441110.

[2]Assistant Professor, Department of Obstetrics and Gynaecology, Datta Meghe Medical College and Shalinitai Meghe Hospital and Research Centre, Wanadongri, Hingna, Nagpur, Maharashtra, India-441110.

ABSTRACT

Aim of the case report is to enlighten the case of a multigravida with corrected anaemia with immediate postpartum cardiomyopathy. Peripartum Cardiomyopathy (PPCM) is an uncommon entity which generally affects the elderly gravid females who are mostly multiparous. It is a type of dilated cardiomyopathy which occurs during the last trimester of pregnancy or early post partum period. Several other risk factors are associated with the development of PPCM. Even though it is associated with greater morbidity but if managed promptly, can be reverted back with minimal mortality or morbidity. We present a case of a young woman, multigravida, G3P1L1A1 with moderate anaemia corrected, who landed up in pulmonary edema intraoperatively and was managed conservatively thereafter with no significant morbidity and good maternal outcome. We should be alert and vigilant while managing high risk patients and correctly diagnosing the condition and prompt treatment to reduce mortality. Clinical Significance is that Heart disease is a very common entity nowadays and can land up in an unprecedented event at any time during pregnancy, labour or postpartum. Appropriate diagnosis and management are necessary for preventing mishap.

***Corresponding author**

Priya Pratapan Nair, Assistant Professor, Department of Obstetrics and Gynaecology, Datta Meghe Medical College and Shalinitai Meghe Hospital and Research Centre, Wanadongri, Hingna, Nagpur, Maharashtra, India-441110. Tel: 9975768977.

Received: December 14, 2023; **Accepted:** December 26, 2023; **Published:** December 29, 2023

Keywords: Maternal Mortality, Maternal Morbidity, Dilated Cardiomyopathy, Immediate Postpartum period, Peripartum cardiomyopathy, Pulmonary edema

Introduction

Peripartum Cardiomyopathy (PPCM) is a new systolic dysfunction developed during the period around parturition associated with one in every 3000 to 4000 live births, affecting thousands of women in developing countries each year [1].

The definition of PPCM includes four criteria:

1. Development of cardiac failure in the last month of pregnancy or within five months of delivery.
2. Absence of an identifiable cause for the Cardiac Failure
3. Absence of recognizable heart disease before the last month of pregnancy.
4. Echocardiographic findings:

A. Left ventricular end-diastolic dimension ≥2.7 cm/m2
B. M-mode fractional shortening ≤30%
C. Left ventricular ejection fraction ≤0.45 [2,3].

Features of PPCM often mimicks other peripartum conditions like pulmonary embolism or eclampsia which can lead to delay in diagnosis and management. One should be vigilant enough to correctly diagnose a case of cardiomyopathy. Team effort of anaesthetist, obstetrician, intensivist, physiotherapist are required for saving the life of a patient who lands in acute crisis. Here, we present a unique case of a young multigravida who was asymptomatic throughout her pregnancy with anaemia which got corrected by blood transfusion which was a triger for her weak heart following which she developed labour pains and landed up in emergency cesarrean section, later with pulmonary edema.

Patient and observation

Patient Information

A 26 years old Gravida 3, Para 2 Live 1 Died 1, first full term normal vaginal delivery and second lower segment cesarean section, previous both deliveries uneventful, unbooked patient, came for the first time in Out Patient Department of Shalinitai Meghe Hospital and Research Centre, Hingna, at 37 weeks with referral from a peripheral referral centre as a case of moderate anaemia of Hb 7 gm% for correction and further evaluation. Patient did not have any major symptoms. Patient had no significant medical, surgical or family history.

Clinical Findings

Patient was thin Built, afebrile, no signs of malnutrition, Pallor ++, No edema, no lymphadenopathy, No icterus, no cyanosis, no clubbing, no signs of failure, Tachycardia- +, Pulse- 110/min, Blood Pressure- 110/74 mm hg in right arm supine position, chest clear, heart sounds: soft systolic murmur present in mitral and

tricuspid area. Per abdomen examination, uterus corresponded to 34 weeks of gestation with mild Intra Uterine Growth Restriction (IUGR), fetal heart sounds were normal, previous scar was normal.

Timeline
Patient was asymptomatic and was not having any specific complaints or restriction in day to day activity. She gave history of non-compliance to iron and calcium tablets during antenatal period.

Diagnostic Assessment
Patient was admitted and her complete blood count, peripheral smear (PS) and iron studies were sent. Hb- 6.9 gm%, PS- showed microcytic hypochromic red cells, platelets were adequate, no abnormal cells found. She was transfused one unit packed red blood cells and her 2 D Echo, ultrasonography with doppler was planned the next day. She underwent Discharge Against Medical Advice (DAMA) the next day due to monetory issues and was unevaluated.

Diagnosis
A provisional diagnosis of case of G3P2L1D1 with 37 weeks gestation with moderate anaemia with IUGR with ? Heart Diesase was made.

Intervention
Later, after one week she came to emergency department in labour with complains of swelling all over body after blood transfusion and breathlessness on exertion. On Examination: Blood Pressure was 140/86 mm hg, spo2: 95 % on air, heart sound: murmur present, chest was clear, edema feet were present, RR- 18/min, no signs of failure, fetal heart sounds were on higher side and she was in labour with per vaginal examination: 3 cm dilated with 60 % effacement, thick meconium.

A decision for emergency Lower Segment Cesarrean Section (LSCS) was taken. It was done by a senior consultant during routine hours with the help of senior anaesthetist and team. She was given spinal anaesthesia, but it failed twice, so General Anaesthesia was given. After delivery of baby, her saturation felt suddenly upto 70 % and there was development of pulmonary edema. She was given Inj. Furosemide 40 mg intraop and was shifted to Intensive Care Unit post operative on bipap 12/6 on day 1. Her ECG was suggestive of First Degree Atrio Ventricular Block and immediate 2 D Echo was done which was suggestive of dilated left ventricle with left ventricular hypokinesia, jerky septal motion, ejection fraction 30 %, Inferior vena cava congested. Diagnosis of Peripartum Cardiomyopathy was concluded and she was managed conservatively on Tab Lasix and Tab. Amlodipine for raised blood pressure. She was uneventfully discharged on day 10 of LSCS with healthy baby.

Follow up and outcome
Further follow up was done at 4 weeks with the Cardiologist, where her repeat 2 D Echo suggested improvement in the ejection fraction to 45%. She was advised for haemoglobin build up and to continue medications.

Patient's perspectiveThe patient was an unbooked candidate and she was guilty of the fact that she was non compliant to antenatal check ups and medications. She was also guilty of not listening to the advise of doctors for not staying in the hospital till delivery. She thanked the entire team for the effort put to save her life.

Informed consent
Patient was explained regarding rarity of her condition and to give her consent for publication. Informed verbal and written consent was taken from her and was assured about non disclosure of her name and other details.

Discussion
PPCM is a type of delayed myopathy with unknown origin. It is non familial, non-genetic form of dilated cardiomyopathy. Several risk factors involved: multiparity, black race, advanced maternal age, smoking, alcohol, malnutrition and pre-eclampsia [1,4]. The symptoms of PPCM like dyspnea, fatigue and edema are similar to those of normal pregnancy and peripartum states and pregnancy co-morbidities like pulmonary emboli, upper respiratory tract infection or severe pre-eclampsia and are therefore responsible for delay in diagnosis and are often under recognized [5]. The limitation of our case was the patient's 2 D Echo was not possible and she was undertaken for emergency LSCS without cardiac evaluation.

Several etiologies of PPCM has been postulated like the cardiovascular stress of pregnancy due to fluid overload or even due to myocarditis [6]. Some researchers have even found out correlation of PPCM with inflammatory response in pregnancy, due to elevated levels of tumour necrosis factor-alpha and interleukin-6 levels [7,8]. Correlation of an autoimmune response of the foetal cells in the maternal circulation and cardiac tissue is also postulated as a cause of PPCM [3]. Selenium deficiency has also been linked as a cause for PPCM [9,10].

No specific laboratory abnormalities for PPCM are available but BNP is often elevated. Other tests like cardiac enzymes assessment, Imaging studies include electrocardiography, chest X ray and echocardiography are also indicated. ECG can show sinus tachycardia, nonspecific ST- and T-wave abnormalities, and voltage abnormalities. Chest X ray may show signs of pulmonary congestion, prominent broncho vascular markings, pleural effusion, cardiac enlargement and even obliteration of costophrenic angles. Echo usually shows decreased left ventricular contractility and left ventricular hypokinesia and enlargement without hypertrophy.

The treatment for PPCM includes fluid and salt restriction, β-blockers, diuretics, and digoxin. Hydralazine can be used during pregnancy to reduce afterload. Diuretics should be used during pregnancy so as to avoid dehydration and placental insufficiency. ACE inhibitors and angiotensin receptor blockers are contraindicated in pregnancy. Exercise should be encouraged in women depending upon the heart condition and early use of anticoagulants should be considered so as to avoid coagulation problems. A second pregnancy is generally not recommended for these patients as PPCM chances are 30% more in subsequent pregnancies putting patient and child at more risk. Heart transplant is an option for those who do not respond to medical management but the rate of heart transplant nowadays varies only between 4 to 7 % due to better medical management.

Conclusion
Peripartum Cardiomyopathy is a rare but serious condition affecting women of child bearing age group. Correct diagnosis and prompt treatment with multidisciplinary approach can help save the life of mother. Despite of such high morbidity and greater chances of recurrence in subsequent pregnancy, it recovers within three to six months of onset.

Competing Interest
The authors declare no competing interest.

Authors' contributions
Dr. Priya Pratapan (Nair) was the operating surgeon during the case and she has written the primary manuscript, Dr. Snehal Deshmukh helped in collecting final data and revision of manuscript.

Acknowledgements
We thank the entire staff of hospital for their help and to the patient and relatives for their co operation.

References

1. Libby P, Bonow RO, Mann DL, Zipes DP (2007) Braunwald's heart disease: a textbook of cardiovascular medicine. 8th ed. Philadelphia, PA: Saunders.
2. Demakis JG, Rahimtoola SH, Sutton GC (1971) Natural course of peripartum cardiomyopathy. Circulation 44:1053-1061.
3. Pearson GO, Veille JC, Rahimtoola S (2000) Peripartum cardiomyopathy: National Heart, Lung, and Blood Institute and Office of Rare Diseases (National Institutes of Health) workshop recommendations and review. JAMA 283:1183-1188.
4. Marx JA, Hockberger RS, Walls RM (2006) Rosen's emergency medicine: concepts and clinical practice. 6th ed. Philadelphia, PA: Elsevier Health Sciences.
5. Abboud J, Murad Y, Chen-Scarabelli C, Saravolatz L, Scarabelli TM, et al. (2007) Peripartum cardiomyopathy: a comprehensive review. Int J Cardiol 118: 295-303.
6. Felker G, Thompson R, Hare J (2000) Underlying causes and long-term survival in patients with initially unexplained cardiomyopathy. N Engl J Med 342: 1077-1084.
7. Sliwa K, Skudicky D, Bergemann A, Candy G, Puren A, et al. (2000) Peripartum cardiomyopathy: analysis of clinical outcome, left ventricular function, plasma levels of cytokines and Fas/APO-1. J Am Coll Cardiol 35: 701-705.
8. Sliwa K, Förster O, Libhaber E (2006) Peripartum cardiomyopathy: inflammatory markers as predictors of outcome in 100 prospectively studied patients. Eur Heart J 27: 411-416.
9. Cénac A, Simonoff M, Moretto P, Djibo A (1992) A low plasma selenium is a risk factor for peripartum cardiomyopathy. A comparative study in Sahelian Africa. Int J Cardiol 36: 57-59.
10. Fett JD, Ansari AA, Sundstrom JB, Combs GF (2002) Peripartum cardiomyopathy: a selenium disconnection and an autoimmune connection. Int J Cardiol 86: 311-316.