INTERNATIONAL JOURNAL OF MEDICAL AND APPLIED SCIENCES
Earthjournals Publisher
E-ISSN:2320-3137
www.earthjournals.org

CASE REPORT

PERIPARTUM CARDIOMYOPATHY: REPORT OF A RARE CASE

K J Jeevitha[1] , D Nisha[2], Devaki [3], Kavitha Gandhi[3], Rathna Ramamurthy[4]

1. **Senior resident, Department of Obstetrics & Gyneacology**
2. **Assistant Professor, Department of Anesthesiology**
3. **Assistant Professor, Department of Obstetrics & Gyneacology,**
4. **Associate Professor, Department of Obstetrics & Gyneacology,**

Corresponding Author: Dr. Jeevitha K J MBBS DNB (O & G), Senior Resident, Department of Obstetrics & Gynecology,Velammal Medical College Hospital & Research Institute, Ph: 0452 – 2510000 Extension: 126, Mobile: +91 99402 92762

Abstract

Peripartum cardiomyopathy is a rare but a life threatening disorder of myocardium with the onset of cardiac failure occurring during late last trimester of pregnancy or in the first 6 months of post- partum period. Diagnosis of Peripartum cardiomyopathy is often missed, as it is a diagnosis of exclusion and the symptoms mimic physiological conditions associated with normal pregnancy. It has a high mortality rate, some patients may improve but most of them progress to heart failure and death. Thus an early diagnosis and effective management increases the long term prognosis of the patient. We report an interesting case of peripartum cardiomyopathy diagnosed in the immediate post- operative period and was effectively managed with medical therapy and obtained a favorable outcome.

Keywords: Echocardiogram,heart failure, myocardium,Peripartum cardiomyopathy.

INTRODUCTION

Peripartum cardiomyopathy (PPCM) is a dilated cardiomyopathy of unknown etiology that occurs in last trimester of Pregnancy and in first 6 months of post- partum period. The incidence of PPCM is 1 in 1374 live birth in Indian studies[1] and 1 in 3000 to 4000 pregnancies in United States[2].

The definition of PPCM was modified which includes following 4 criteria [3]

1. Development of heart failure during last trimester of pregnancy or first 6 months post- partum.
2. Absence of any identifiable cause for heart failure.
3. Absence of any recognizable heart disease prior to last trimester of pregnancy.
4. ECHO demonstrating proof for Left ventricular dysfunction with ejection fraction < 45% left ventricular fractional shortening less than 30% or left ventricular end diastolic dimension > 2.7 cm/m2.

The risk factors for PPCM are found to be greater in multiparous women, advanced age, multi-fetal gestation, preeclampsia and gestational hypertension. Others include obesity, maternal alcohol abuse, smoking and long term use of tocolytics. Symptoms of PPCM are very vague like fatigue, dyspnea, pedal edema and they overlap with symptoms of normal peripartum

period to other complications like pulmonary embolism, eclampsia. Thus diagnosis is often delayed and goes unrecognized leading to mortality. Mortality rate is as high as 20-50 %.[4]

This case report is presented for its rarity and to emphasis that a high index of suspicion is required for diagnosis and an early diagnosis with effective treatment started at the right time can give a remarkable outcome.

CASE REPORT

A 23 year old G_2A_1patient was admitted to our institute with labor pains. She had an uneventful antenatal period with no history of any co-morbidity. Her pulse rate was normal at the time of admission. Slowly her labor progressed and at 4cm of cervical dilatation, artificial rupture of membrane was done and the presence of thick meconium stained liquor with fetal heart rate (FHR) dropping to 100bpm, emergency LSCS was decided.

Patient was asymptomatic and her intraoperative pulse rate was 120/min. As anemia and dehydration are the most common causes of tachycardia,she was administered with 2 units of IV fluid and arranged for blood transfusion. Mild atonic post-partum hemorrhage was managed with medical therapy and the procedure was uneventful. Her pulse rate was 118-120bpm and ECG showed sinus tachycardia throughout the procedure.

In the immediate post op period, 1 unit blood transfusion was started, following which patient developed sudden tachypnea and tachycardia of 170-180/min, spO_2- 86% at only 50 ml of blood transfusion and hence blood was discontinued and patient was shifted to high dependency unit. Her Blood pressure was normal and ECG showed sinus tachycardia. Physician opinion was sought and differential diagnoses of transfusion related lung injury, pulmonary embolism, prostaglandin induced hypoxia and PPCM were pondered upon. An ultrasound abdomen, pelvis and chest x-ray presented normal findings.

A cardiologists' expert opinion was sought and ECHO was done.ECHO findings presented a dilated left ventricle; with ejection fraction<32% and absence of any thrombus (Figure 1).The above findings were consistent with a diagnosis of peripartum cardiomyopathy (PPCM). Patient was immediately started with anti- failure measures(Injection nitroglycerine 2.5mcg, Injection Torsemide, T. Enalapril 2.5mg, T. Digoxin 0.25mg, T. Spironolactone 12.5mg) along with salt, fluid, and activity restriction. She was symptomatically better within 4 hours and pulse rate stabilized at 130-140bpm. All medications were continued and on post-op day 5, her pulse rate was 100-110bpm.Following meticulous post-operative care and supervision, she was discharged on day 12thpost-operative day. During follow up there was a marginal improvement of her left ventricular function.

DISCUSSION

Cardiomyopathy associated with pregnancy was first described in 1937[5]. The natural history of PPCM is variable and its clinical presentation is quite heterogeneous and overlapping with other conditions of heart failure. The etiology is unknown but many hypotheses have been formulated including viral myocarditis, immune mediated injury, selenium deficiency and hemodynamic stress of pregnancy[6, 7]. Clinical features of PPCM include symptoms of congestive cardiac failure and chest pain. Signs include tachycardia, tachypnea, pulmonary rales and enlarged heart and S3 heart sound[8]. Because dyspnea is a common finding in normal pregnancy and even in initial post- partum period diagnosis of PPCM is often missed[8].

INTERNATIONAL JOURNAL OF MEDICAL AND APPLIED SCIENCES
Earthjournals Publisher
E-ISSN:2320-3137
www.earthjournals.org

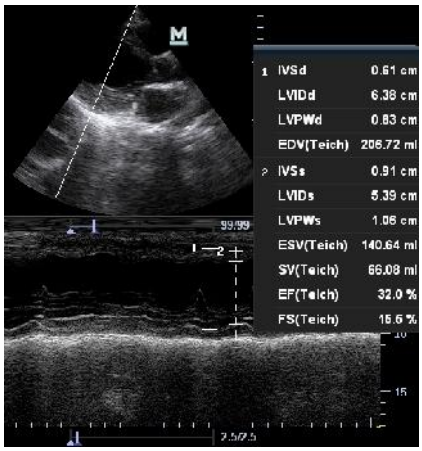

Figure 1: Presence of a dilated left ventricle; with ejection fraction <32% and absence of any thrombus

The most common and confusing differential diagnosis is Idiopathic dilated cardiomyopathy (IDCM). The differences between PPCM and IDCM are as follows: (Table 1)[10, 11]

Table 1: Differences between PPCM and IDCM

S. No	Peripartum Cardiomyopathy	Idiopathic Dilated Cardiomyopathy
1.	Occurs in younger age group	Any age
2.	Prognosis is better	Prognosis is less
3.	Mostly occurs in postpartum period	Usually in second trimester
4.	Occurs in pregnant woman	Any one
5.	Varying types of hemodynamic changes	Little less
6.	Incidence of myocarditis is higher	Little less
7.	Heart size returns to normal after delivery	Little less
8.	Rapid worsening of condition can occur	Usually less
9.	Antigen and antibodies against myocardium occurs	Usually less

Early diagnosis and initiation of treatment are essential to optimize pregnancy outcome. Treatment is same as in for other cardiac failure with fluid and salt restriction, beta blockers, diuretics and digoxin. ACE inhibitors and angiotensin receptor blocker are contraindicated in pregnancy but can be started in post-partum period. Diuretics cause dehydration and placental injury thus used with caution in pregnancy. Anticoagulants are added as they are high risk for thrombus formation. Physical activity is advised as per patient's tolerance.

The best time to discontinue treatment is unknown but given at least for 1 month. Heart transplantation is a last resort in case of failure of medical therapy[12]. With effective medical management the rate of heart transplantation is reduced to 4% from 7%[13].

The prognosis is poor in patients with persistent cardiomyopathy in subsequent pregnancies and often associated with recurrence of left ventricular systolic dysfunction. Women who develop PPCM are at high risk of developing the same problem in future pregnancy and should discuss about contraception to the patient.

CONCLUSION

PPCM is a life threatening rare entity with unknown etiology taking place in last trimester of pregnancy or in first 6 months post- partum. Early diagnosis and effective treatment reduces mortality rates and increases chance of complete recovery of ventricular function. Future pregnancy is better avoided. In unavoidable situations in subsequent pregnancy patient should be managed with a multidisciplinary unit.

REFERENCES

1. Pandit V, Shetty S, Kumar A, Sagir A. Incidence and outcome of peripartum cardiomyopathy from a tertiary hospital in south india. Trop Doct 2009;39:168-9.
2. Ventura HO. Peripartum cardiomyopathy: clinical and therapeutic characteristics.J La State Med Soc.1991;143:45-8.
3. Selle T, Renger I, Labidi S, Bultmann I, Hilfiker-Kleiner D. Reviewing peripartum cardiomyopathy: current state of knowledge. Future Cardiol. 2009;5:175-89.
4. Abboud J, Murad Y, Chen-Scarabelli C, Saravolatz L, Scarabelli TM. Peripartum cardiomyopathy: a comphrehensive review. Int J Cardiol. 2007;118:295-303.
5. Srinivas M, Marie R, Baldisseri. Peripartum cardiomyopathy. Crit Care Med 2005;33:341-5.
6. Ansari AA, Fett JD, Carraway RE, Mayne AE, Onlamoon N, Sundstrom JB. Autoimmune mechanism as the basis for human peripartum cardiomyopathy. Clin Rev Allergy Immunol. 2002;23:301-24.
7. Fett JD, Ansari AA, Sundstorm JB. Peripartum cardiomyopathy: a selenium disconnection and an autoimmune connection.Int J Cardiol. 2002;86:311-6.
8. Marx JA, Hockberger RS, Walls RM. Rosen's emergency medicine:concepts and clinical practice. 6th ed. Philadelphia, PA: Elsevier Health Sciences:2006.
9. Mary Wang MD. Peripartum cardiomyopathy:case report. Perm J. 2009;13:42-45.
10. Pearson GD, Veille JC, Rahimtoola S, Hsia J, Oakley CM, Hosenpud JD et al. Peripartum cardiomyopathy: National heart, lung and blood institute and office of rare disease (National Institute of Health) workshop recommendation and review. JAMA. 2000;283(9):1183-8.
11. Avila WS, de Carvalho ME, Tschaen CK, Rossi EG, Grinberg M, Mady C, Ramires JA. Pregnancy and peripartum cardiomyopathy. Acomprehensive and prospective study. Arq Bras Cardiol. 2002;79(5):484-93.
12. Sliwa K, Fett J, Elkayam U. Peripartum cardiomyopathy. Lancet. 2006;368:687-93.
13. Roberto C, Rajesh J, Massimo D. Peripartum cardiomyopathy: An intriguing challenge. Case report with Literature review. Curr Cardiol Rev. 2009;5:268-72.