



## Case Report

# Peripartum cardiomyopathy: A case report

Samar Rudra<sup>1,\*</sup>, Neha Vashishat<sup>1</sup>, Priya Jindal<sup>1</sup>, Monika Kataria<sup>1</sup>, Mehak Manocha<sup>1</sup>

<sup>1</sup>Dept. of Obstetrics and Gynaecology, Maharishi Markandeshwar Institute of Medical Sciences and Research, Ambala, Haryana, India

### ARTICLE INFO

#### Article history:

Received 20-4-2019

Accepted 20-7-2019

Available online 12-09-2019

#### Keywords:

Cardiomyopathy

Peripartum

Heart failure

Bromocriptine

Pregnancy

### ABSTRACT

Peripartum cardiomyopathy (PPCM) is a form of heart failure which occurs due to secondary left ventricular systolic dysfunction during last month of pregnancy or within 5 months after delivery. Incidence of PPCM is 1:3000 to 1:15000 pregnancies. Etiology and pathophysiology is still unclear. Clinically it presents with signs and symptoms of heart failure. PPCM remains one of the major cause for maternal mortality and morbidity if diagnosis is delayed. Therefore, early diagnosis and effective treatment affects patient's long term prognosis. Aim of this case report is to make awareness in health professionals about the possibilities of PPCM and the presenting symptoms as in our case.

© 2019 Published by Innovative Publication.

## 1. Introduction

Peripartum cardiomyopathy (PPCM) is a disease of primary heart muscle.<sup>1</sup>

In 1990 National Heart, Lung, and Blood Institute (NHLBI) define PPCM as :

1. Development of heart failure during last month of pregnancy or in 5 months of delivery.
2. No other identifiable cause for heart failure.
3. No other recognizable heart disease before the last month of pregnancy.
4. Ejection fraction of less than 45%.<sup>2-4</sup>

European Society of Cardiology (ESC) in 2010 defines PPCM as heart failure that occurs "during the end of pregnancy or within the months following delivery, where no other apparent cause of heart failure is found."<sup>5</sup>

Symptoms of PPCM are dyspnea, fatigue, edema which are commonly seen in peripartum period and comorbidities associated in pregnancy like eclampsia and pulmonary

emboli.<sup>6</sup> Due to this the diagnosis is often delayed which leads to high mortality rate ranging between 20%-50%.<sup>6</sup>

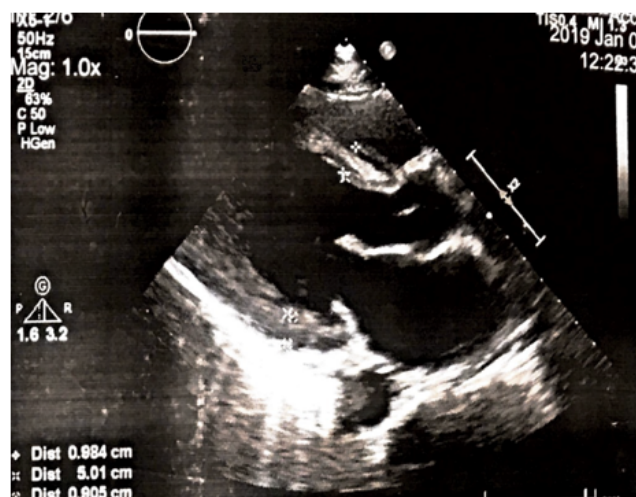
## 2. Case Report

A 22 yr. old primigravida was admitted to our hospital on 03/01/2019 at 36 weeks of gestation having breathlessness and pedal oedema for last one month which was gradually increasing in intensity. She was a known case of hypothyroidism on Eltroxin. Clinical examination revealed she was mildly pale, oedema present over feet and abdominal wall, pulse 110/ minute, respiratory rate 34/minute, BP 160/110 mm of hg. She was found to be having twin gestation both babies in breech presentation. Her lung fields were clear, CVS examination clinically revealed no abnormality. Other systems were within normal limits. Relevant investigation revealed her Hb% - 9.4 gm%, urine albumin present one +. LFT, RFT, platelet count were within normal range. Ultrasonography confirmed twin gestation. Both the babies were presenting as breech with USG evidence of IUGR. Other relevant investigation were within normal limits. She was diagnosed as a case of Twin pregnancy at 36 weeks POG, both in breech presentation

\* Corresponding author.

E-mail address: [rudra\\_samar@yahoo.co.in](mailto:rudra_samar@yahoo.co.in) (S. Rudra).

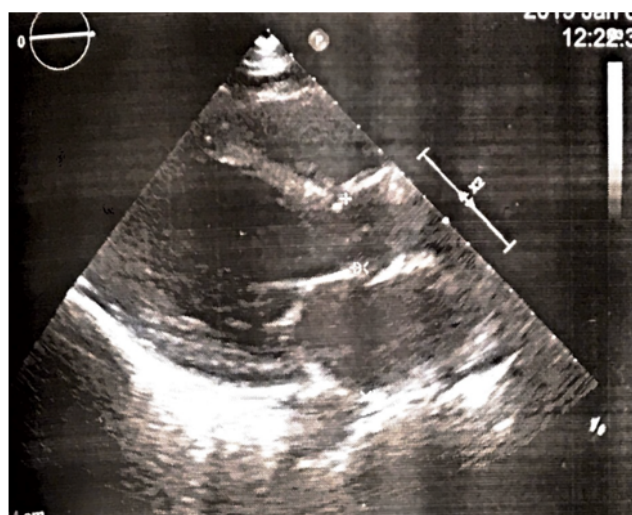
with IUGR and associated HDP and hypothyroidism. However so far her clinical and investigation results could not explain her marked dyspnoea at rest. Hence X-ray chest was done which revealed cardiomegaly. Cardiology opinion was taken. Echocardiography (Figures 1 and 2) was performed which showed global LV hypokinesia with severe LV systolic dysfunction, ejection fraction of 35%, moderate to mild mitral regurgitation and mild tricuspid regurgitation and was diagnosed as a case of peripartum cardiomyopathy. Patient was managed conservatively with injection furosemide, nebulization and tablet ivabradine 5mg BD besides labetalol 200 mg BD for HDP, thyroxin 50 micro gm OD and other supporting drugs. She went into spontaneous onset of labour on 11/1/2019. Taken up for caesarean due breech presentation. Babies weighing 1.8 kg and 1.4 kg delivered by breech. Postoperatively patient was shifted to gynae ICU and kept under close monitoring. She had an uneventful postoperative recovery. Her general condition improved. On postoperative day 10, her pulse was 84/minute, respiratory rate 18/minute, BP 120/80 mmHg, chest was clear. Cardiology evaluation showed marked improvement in her cardiac status. She was discharged on 10th postoperative day. Advised follow-up in cardiology OPD. She was also explained about chance of recurrence in next pregnancy and to remain vigilant and report to this hospital early if she conceives.



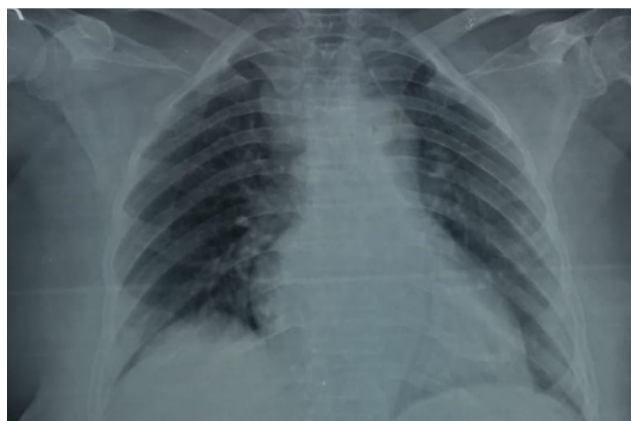
**Fig. 1:** Transthoracic echocardiography suggestive of PPCM

### 3. Discussion

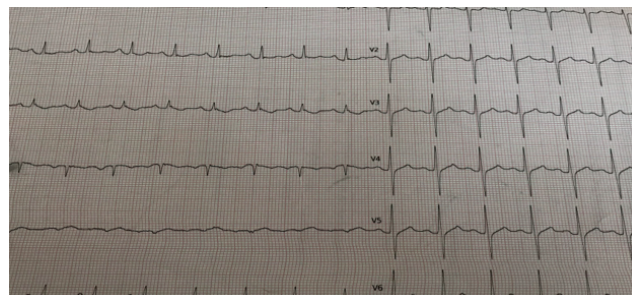
Incidence of PPCM is 1:3000 to 1:15000 pregnancies,<sup>7</sup> The incidence of PPCM in Indian case study is 1 case per 1374 live births.<sup>8</sup> Exact etiology although of PPCM is still not very clear, but possible causes are : viral myocarditis, autoimmune phenomenon and genetic mutation that affect formation of prolactin.<sup>2,9</sup> Risk factors of PPCM are multiparous women, older maternal age, black race, gestational



**Fig. 2:** Transthoracic echocardiography examination showing dilated left atrium and left ventricle



**Fig. 3:** X-ray showing cardiomegaly



**Fig. 4:** ECG suggestive of sinus tachycardia

hypertension and pre-eclampsia.<sup>2</sup> In our case the patient had two risk factors, twin pregnancy and pre-eclampsia. The signs of PPCM includes tachycardia, tachypnea, pulmonary crepts, enlarged heart, S3 heart sound.<sup>10</sup> Laboratory and imaging studies are necessary to exclude other causes like pre-eclampsia or any other pre-existing heart disease. Imaging studies like chest X Ray, electrocardiography and echocardiography are needed for the diagnosis. ECG shows ST- and T-waves abnormalities.<sup>11</sup> Chest x-ray shows sign of cardiac enlargement, pulmonary congestion, and bilateral pleural effusion.<sup>12</sup> In our case X-ray shows cardiomegaly. Echocardiograms shows decreased contractility and enlargement of left ventricle without hypertrophy.<sup>13</sup>

Treatment of PPCM includes salt and fluid restriction, beta-blocker, diuretic and digoxin. In pregnancy Angiotensin converting enzyme(ACE) inhibitors and angiotensin receptor blocker (ARB) are contraindicated.<sup>14</sup> Diuretics should be used in pregnancy with precaution to prevent dehydration and placental insufficiency. Anticoagulants are indicated in high risk patients who have tendency to form thrombus<sup>14</sup> with severe LV dysfunction. Bromocriptine is one potential disease specific treatment under investigation.<sup>15</sup> In about 50% cases patient's ejection fraction comes to normal levels. Usually second pregnancy is not recommended because of its recurrence in subsequent pregnancy which has prevalence of 30%, and puts mother and baby at risk.<sup>16</sup>

Aim of this presentation is to emphasise the importance of high index of suspicion to diagnose a case of peripartum cardiomyopathy early and institute appropriate treatment to get a favourable outcome.

#### 4. Source of funding

None

#### 5. Conflict of interest

None.

#### References

1. Ritchie C. Clinical contribution to the pathology, diagnosis and treatment of certain chronic diseases in the heart. *Edinburgh Med Surg J.* 1849;2:333–333.
2. Peripartum cardiomyopathy: A review. *J Obstet Gynecol India.* 2010;60(1):25–32.
3. Hibbard JU, Lindheimer M, Lang RM. A modified definition for peripartum cardiomyopathy and prognosis based on echocardiography.

*Obstet Gynecol.* 1999;94:311–317.

4. Person GD, Veille JC, Rahimtoola S. Peripartum cardiomyopathy. National Heart, Lung and Blood Institute and Office of rare disease. *JAMA*;283(9):1183–1188.
5. Sliwa K, Hilfiker-Kleiner D, Petrie MC. Heart Failure Association of the European Society of Cardiology Working Group on Peripartum Cardiomyopathy. Current state of knowledge on aetiology, diagnosis, management, and therapy of peripartum cardiomyopathy: a position statement from the Heart Failure Association of the European Society of Cardiology Working Group on peripartum cardiomyopathy. *Eur J Heart Fail.* 2010;12:767–778.
6. Abboud J, Murad Y, Chen-Scarabelli C, Saravolatz L, Scarabelli TM. Peripartum cardiomyopathy: a comprehensive review. *Int J Cardiol.* 2007;118(3):295–303.
7. Nabhan A. Peripartum Cardiomyopathy(Review). . *ASJOG.* 2005;2:232–237.
8. Pandit V, Shetty S, Kumar A. Incidence and outcome of peripartum cardiomyopathy. *Trop Doct.* 2009;39(3):168–169.
9. Silversides CK, Harris L, Haberer K. Recurrence rates of arrhythmias during pregnancy in women with previous tachyarrhythmia and impact on fetal and neonatal outcomes. *Am J Cardiol.* 2006;97:1206–1218.
10. MJ, HR, WR, editors. Rosens emergency medicine: concepts and clinical practice. Philadelphia, PA: Elsevier Health Sciences ; 2006.. 6th ed.
11. Davidson NM, Parry EH. The etiology of peripartum cardiac failure. *Am Heart J.* 1979;97(4):535–541.
12. Bhakta P, Biswas B, Banerjee B. Peripartum cardiomyopathy: review of the literature. *Yonsei Med J.* 2007;48(5):731–778.
13. Lampert MB, Lang RM. Peripartum cardiomyopathy. *Am Heart J.* 1995;130(4):860–870.
14. Libby P, Bonow RO, Mann DL. Braunwalds heart disease: a textbook of cardiovascular medicine. Philadelphia, PA: Saunders ; 2007..
15. Regitz-Zagrosek V, Roos-Hesselink JW, Bauersachs J. Scientific Document Group. 2018 ESC Guidelines for the management of cardiovascular diseases during pregnancy. *Eur Heart J.* 2018;39:3165–241.
16. Walsh JJ, Burch GE, Black WC, Ferrans VJ, Hibbs RG. Idiopathic myocardiopathy of the puerperium (postpartal heart disease). *Circ.* 1965;32:19–31.

#### Author biography

**Samar Rudra** Professor and HOD

**Neha Vashishat** Post Graduate

**Priya Jindal** Assistant Professor

**Monika Kataria** Post Graduate

**Mehak Manocha** Post Graduate

**Cite this article:** Rudra S, Vashishat N, Jindal P, Kataria M, Manocha M. Peripartum cardiomyopathy: A case report. *Indian J Obstet Gynecol Res* 2019;6(3):405–407.