Peripartum Cardiomyopathy in an Elderly Patient with In-vitro Fertilization Pregnancy


Abstract
Peripartum cardiomyopathy as a diagnosis needs to be considered in antenatal and immediate postpartum women with clinical features of cardiac failure. As more and more women at increasing age go for assisted reproduction, screening for risk factors needs to be done. Treatment involves coordination between cardiologist and obstetrician as both the patient’s cardiac status and well being of the baby needs to be considered. In this case report we present an elderly Primigravida, conceived with in-vitro fertilization (donor oocytes) who developed unexplained cardiac failure post LSCS.

Introduction
Peripartum cardiomyopathy is a rare but serious condition complicating pregnancy. It typically presents in the last month of pregnancy to five months postpartum. Though medical management is the mainstay of treatment, its presentation during pregnancy and immediate postpartum poses some unique challenges. Here we present such a case of an elderly gravida presented with immediate postpartum cardiomyopathy.

Case Report
Mrs X, 42 year old lady was admitted to the intensive care unit of the hospital immediately post caesarean section with hypotension, tachycardia and low oxygen saturation. She was a case of secondary infertility and had a twin IVF conception with donor oocytes.

In her antenatal period, she had an uneventful course except that she was started on tocolytics (Tablet Duvadilan 10 mg TDS for two months followed by 10 mg OD for rest of pregnancy) from her third month of pregnancy.

The patient had a full term elective caesarean section at 37 weeks of gestation. There were no complications in form of prolonged operating time, haemorrhage, anaesthetic complications intraoperatively. Her postoperative vitals are shown in Table 1.

As noted from the table, two and half hours post LSCS the patient developed sudden hypotension and tachycardia. There was no bleeding per vaginum, her abdomen was soft. The patient was immediately shifted to intensive care unit, intubated and started on inotropic support in form of Dopamine and noradrenaline drip. She was infused two units blood and four units cryoprecipitate.

Postoperative investigations showed haemoglobin of 7.5 gm% (preoperative Haemoglobin 9.3 gm %) with leukocytosis. Her chest x ray showed mild pulmonary oedema with small left pleural effusion. On ECG ST-T changes in anterior leads were seen. On 2D Echo Left ventricular ejection fraction of 20% with marked hypokinesia of left ventricle and mild grade MR/TR were noted. In view of these findings a diagnosis of postpartum cardiomyopathy with left ventricular failure with septic shock was made.

The patient was continued on injectable antibiotics with Tablet Sorbitrate, ACE inhibitors, diuretics, intravenous digoxin followed by Tablet digoxin once haemodynamically stable. Tablet Cabergoline for lactation suppression was given. The patient gradually improved and was extubated after three days. She was discharged from the Intensive care after one week on Tablet digoxin, ACE inhibitors, Beta blockers and diuretics. Anticoagulants (Injection Unfractionated Heparin 5000 subcutaneous twice daily) was started on the seventh post-operative day. She was advised complete bed rest and restriction of activity.

Discussion
Peripartum cardiomyopathy is a rare condition with rate of occurrence of 1:1300 to 1:4000 live births.¹ It is a diagnosis of exclusion and other causes of cardiomyopathy like primary dilated cardiomyopathy, valvular heart disease, ischemic heart disease should be ruled out. The main factor is left ventricular systolic dysfunction and absence of a systolic dysfunction should lead to evaluation for other causes of high output failures like anaemia and thyrotoxicosis.

It is thought to be more prevalent with extremes of reproductive age and in older women with high parity. The three largest series of patients with Peripartum cardiomyopathy have also reported hypertension of pregnancy, twin gestation and chronic use of tocolytics as risk factors.²-⁴

Among the many hypothesis proposed for aetiology of peripartum cardiomyopathy include immune hypothesis, viral infection and role of fetal microchimerism.⁵

The patients present with symptoms of systolic heart failure which include orthopnea, dyspnoea on exertion, dependent oedema, persistent cough and palpitations. Because these symptoms may be confused with normal changes of pregnancy, patients are usually detected in later stages in NYHA III and IV. Fever and leukocytosis is uncommon and when present should elicit a thorough evaluation for postpartum sepsis as an alternative diagnostic possibility.

Echocardiography is an important tool for evaluation and follow-up for women with postpartum cardiomyopathy. The finding of a decrease in myocardial systolic dysfunction, as manifest by a decrease in left ventricular ejection fraction or fractional shortening is essential to the diagnosis. ECG findings are nonspecific.

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Table 1: Table showing postoperative vitals of patient X

<table>
<thead>
<tr>
<th>Time (hours)</th>
<th>Pulse (/min)</th>
<th>BP (mmHg)</th>
<th>O₂ saturation (%)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>96</td>
<td>110/80</td>
<td>99</td>
<td>-</td>
</tr>
<tr>
<td>½</td>
<td>94</td>
<td>110/76</td>
<td>99</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>98</td>
<td>106/70</td>
<td>98</td>
<td>-</td>
</tr>
<tr>
<td>1½</td>
<td>98</td>
<td>100/64</td>
<td>98</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>116</td>
<td>80 systolic</td>
<td>86</td>
<td>Pallor++, Rales in B/L lung fields, Patient drowsy but arousable</td>
</tr>
</tbody>
</table>

Medical Management: Management consists basically of ACE inhibitors which are used primarily for afterload reduction during postpartum period but its use is contraindicated during pregnancy. Loop diuretics and digoxin therapy should be initiated to reduce symptoms of pulmonary congestion. If the patient is still symptomatic beta blockers can be added. Anticoagulation therapy is also required. Because of metabolic demands of lactation, breast feeding is strongly discouraged.

The prognosis is directly related to left ventricular status and thus a repeat echocardiogram is done after six months post delivery. In those women in whom the left ventricular function does not improve, the prognosis is guarded and mortality rates of 10%- 50% up to six months postpartum have been reported in some series.²,³ Future pregnancies are contraindicated due to risk of recurrence.

Thus to conclude, Peripartum cardiomyopathy, though a rare disorder has a huge implication on maternal morbidity and mortality. Our patient was an elderly gravid with many associated risks of Peripartum cardiomyopathy like tocolytic therapy, twin gestation. Elderly patients wishing to undergo assisted reproduction should be screened for cardiac status before enrolment. Dyspnoea during late pregnancy and post-partum should not be taken lightly. Although rare, in any patient with sudden collapse, Peripartum cardiomyopathy should be considered.

References