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Case Report

Peripartum Cardiomyopathy with Heart Failure Persisting Beyond Ten Months Post-Partum: A Rare Case Report in Awka, Nigeria

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Abstract: Peripartum cardiomyopathy (PPCM) is a rare dilated cardiomyopathy that occurs in late pregnancy or in post-partum period. The features of PPCM usually resolve within six months post-partum following treatment. Factors associated with PPCM are not completely known. We document a rare case of PPCM with features that persisted beyond 10 months post-partum despite medical treatment, in a 38 year-old woman in Awka, Nigeria. The patient, 38 years old, presented in Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Awka, Nigeria, with features of heart failure in the 8th month of pregnancy, without antecedent history of cardiac disease. Her parity was 5 including a set of twins in this index pregnancy. X-ray showed features of heart failure. Echocardiography revealed features of dilated cardiomyopathy. Diagnosis of PPCM was made. She was placed on anti-heart failure regimen. She has remarkable improvement but not complete recovery of heart failure features on three months of follow-up, and 10 months post-partum. This case report of PPCM occurring as the first case in five years in our center shows that PPCM is rare in southeast Nigeria. It further shows that heart failure in PPCM may not resolve completely 10 months post-partum, despite adequate treatment. There is a need for further search for etiology and associations.

Keywords: Peripartum Cardiomyopathy, Twin Pregnancy, Multiparity, Persistent Heart Failure, Awka, Nigeria

1. Introduction

Peripartum cardiomyopathy (PPCM), a rare form of dilated cardiomyopathy, has been reported in many parts of the world including Nigeria. [1] The incidence has been observed to be high in Nigeria, especially in the northern parts of the country. [2, 3]

The etiology of PPCM is unknown. [1] Factors linked with PPCM have not been completely identified, but, in Nigeria, they include some customary practices, consumption of kunun kanwa, and Hausa Fulani ethnicity. [2, 3] Some factors which have not been clearly defined are myocarditis, genetic links, micronutrients (like selenium and ceruloplasmin) deficiency, among others. [1, 4]

Like other dilated cardiomyopathy, PPCM usually manifests as heart failure that occurs in the last 4 weeks of pregnancy or within 5 months post-partum. [3] The management is essentially that of heart failure. Resolution of heart failure within 5 months carries better prognosis for PPCM and future pregnancy. [3, 5]

We thus report a rare case of PPCM in Awka, Nigeria, that presented with heart failure in the 8th month of pregnancy; the heart failure did not resolve completely 10 months post-partum.

2. Case Presentation

Patient was a 38 year-old nursing mother, a Fulani nomadic

cattle rearer, and a Muslim with no formal education, an indigene of Kogo village, Faskari, Katsina State, but domiciled in Awka, Anambra State, southeast Nigeria.

She presented with leg swelling of eight months duration. She was apparently well until eight months prior to presentation, when she developed progressive leg swelling, exacerbated by physical exertion, associated with orthopnea, paroxysmal nocturnal dyspnea, tiredness, and cough. These complaints were first observed in the last four weeks of pregnancy. There was no associated fever, anorexia, vomiting, chest pain or palpitation. However, she has reduced urine volume but noticed no frothing. She was not a known diabetes mellitus or hypertensive patient and could not remember suffering from sore throat in the past. There was also no past history of similar leg swelling or breathlessness in the past and also none in the past pregnancies. On account of these complaints she was treated in a peripheral hospital but presented to us with persistence of her symptoms. There was no family history of diabetes mellitus, or cardiac disease. Her parity was 5; she has 6 children, including a set of twins in the index pregnancy. All her children are alive and well. She has a history of use of clay and unpasteurized milk, but was never treated to cultural practices relating to pregnancy. There was no alcohol, tobacco or substance use, including any known stimulant.

Physical examination revealed she was conscious, in mild respiratory distress, afebrile, acyanosed, and not pale. She has bilateral pitting lower limbs edema, but has no asterixis. Pulse was 74 beats /minute, reduced volume, but regular. Jugular venous pressure was elevated. Blood pressure was 130/80mmHg supine and 124/76mmHg standing. Apex beat was active and located at the 7^{th} left intercostal space in the axillary line. Heart sounds S1, S2 and apical pansystolic murmur were heard. There were fine crepitation on both lung bases. Abdomen was distended. Ascites was demonstrable by fluid thrill. Abdomino-jugular reflux was present. Central nervous system examination was unremarkable.

A working diagnosis of Heart Failure in late pregnancy was made.

Chest X-ray showed cardiomegaly, cardiothoracic ratio of 0.3, with left ventricular dominance and upper lobe diversion.

Echocardiography findings: LVOT 4.8cm, AO 2.6cm, LA 4.8cm, EX 1.2cm, EF slope 0.12m/s, ES 1.6cm, RV 3.4cm, WS 0.3cm, PW 0.4cm, EDD 5.6cm, ESD 4.8cm, HR 104 bpm, EF 40%, FS 26%, MVmax 280cm/s, PG 160mmHg, AOVmax 280cm/s, PG 154mmHg, PAVmax 110cm/s, PG 54mmHg. Comments: reduced global wall motion, reduced motion of the interventricular septum (IVS) and posterior wall, increased dimension of all chambers, reduced fractional shortening and ejection fraction with functional mitral and tricuspid regurgitation, and paradoxical motion of IVS. Conclusion: dilated cardiomyopathy.

Electrocardiography was within normal values.

Abdominopelvic ultrasound scan revealed a grossly enlarged liver. Urinalysis showed normal findings.

Full blood count showed hemoglobin 12.1g/dl, white blood cells count 5400 cells/ml, neutrophils 56%, lymphocytes 42%, eosinophils 2%, platelets 289 x 10^9cells/ml. Fasting serum lipid profiles were within normal range. Serum electrolytes urea and creatinine were within normal values. HIV screening test was negative.

A diagnosis of peripartum cardiomyopathy in heart failure NYHA class IV was made.

Patient was placed on the following medications: Oral Frusemide 40mg daily. Oral Spironolactone 25mg daily. Oral Aspirin 75mg daily. Oral hematinics. Oral Digoxin 0.125mg daily. Oral Metoprolol 25mg daily. Life style and nutritional modifications were advised.

Her condition improved. She was followed up in clinic every four weeks, for 3 months and was lost to follow-up.

3. Discussion

Peripartum cardiomyopathy is rare but its incidence has been reported to be high in Nigeria. [2, 3] However, majority of reported cases emanated from the northern parts of the country. [2, 3, 4] Our index patient was the first case of PPCM that presented in our hospital in 5 years, suggesting that PPCM is also rare in Southeast Nigeria. Worthy of note, this patient was an indigene of northern Nigeria, though domiciled in the southeast.

Although the etiology of PPCM is unknown, some factors including cultural practices in pregnancy have been linked with it. [2, 3, 4] Our patient was an indigene of northern Nigeria resident in southeast Nigeria, but was not treated to any of those practices, suggesting linkage factors other than cultural practices. The occurrence of PPCM was reported more in patients with twin pregnancy as was the case in our index patient. [2] Also, PPCM occurred more in multiparous women, and younger age. [2] For our index patient, a multiparous woman, PPCM was noted only in the fourth pregnancy and at the age of 38 years.

The presentation of PPCM is that of heart failure on a background of dilated cardiomyopathy in the last month of pregnancy or within 5 months post-partum, without antecedent cardiac disease. [6] Our index patient has features of heart failure that started in the 8^{th} month of pregnancy, chest X-ray evidence of cardiomegaly, upper lobe pulmonary vessel diversion, echocardiographic evidence of fractional shortening 26%, reduced systolic ejection fraction 40%, global hypokinesia, global cardiac chamber dilatation and LV end-systolic dimension 5.6cm/m^2, all of which support the diagnosis of PPCM. [6, 7, 8]

Persisting heart failure despite treatment beyond 5 months post-partum has a poor prognosis for PPCM and on future pregnancy. [5, 6, 7, 9, 10] Our patient did not show full recovery from heart failure 10 months post-partum, suggesting she might have a poor prognosis from PPCM and a poor future pregnancy outcome should she decide on future pregnancy.

4. Conclusion

This case report of PPCM occurring as the first case in five years in Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Awka, Nigeria, shows that PPCM is rare in this area. It further highlights that heart failure in PPCM may

not resolve completely over 10 months post-partum, despite adequate anti-heart failure treatment. There is a need for long-term follow-up of PPCM cases along with further search for etiology and associations.

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