

Pulseless Disease in Pregnancy: A Rare Case

Sujatha Narayanamoorthy¹ · Radhamany Ramanan¹

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About the Author



Dr. Sujatha Narayanamoorthy is a third year resident in the Department of Obstetrics & Gynaecology at Amrita Institute of Medical Sciences. She takes interest in high risk obstetrics and hence with the guidance of her Head of Department this case has been presented.

Introduction

Takayasu arteritis (TA) is a rare granulomatous polyarteritis affecting females of reproductive age group. This is a case report of a 25-year-old woman diagnosed with TA on her booking visit. Strict antepartum monitoring, aggressive blood pressure (BP) control, and looking out for complications of TA played a key role in the management of TA. Disease prognosis was unaffected, and mode of delivery was influenced by fetal growth restriction and

abnormal Doppler parameters. The need for multidisciplinary care for a successful pregnancy outcome is emphasized upon.

Case Report

A 25-year-old primigravida was detected to have elevated BP on her first antenatal checkup at 6 weeks of pregnancy. On evaluation, a disparity was noted in the BP readings between the upper and lower limbs which were 220/60 in right upper limb and 100/60 in the other three limbs. A detailed work up of the patient was done in Obstetrics & Gynaecology, Cardiology, Rheumatology, and Ophthalmology departments. Clinical examination picked up a feeble pulsation in the left radial artery, prominent pulsation in the right carotid artery, and bruit along the thoracic and abdominal spine. Antinuclear antibody (ANA), rheumatoid factor (RF), and syphilis serology were negative. Disease severity was reflected by elevated erythrocyte

Sujatha Narayanamoorthy is a Junior Resident in Obstetrics and Gynaecology at Amrita Institute of Medical Science; Radhamany Ramanan is a Professor and Head of the Department of Obstetrics and Gynaecology at Amrita Institute of Medical Science.

✉ Sujatha Narayanamoorthy
nsujatha88@yahoo.co.in

¹ Department of Obstetrics and Gynaecology, Amrita Institute of Medical Science, Kochi, Kerala, India

sedimentation rate (ESR) and C- reactive protein (CRP). Serum gamma globulin was also noted to be increased. Echocardiogram revealed left ventricular hypertrophy and mild mitral and aortic regurgitation. A circumferential thickening of the wall of arch of aorta up to the descending abdominal aorta was noted with stenosis at different levels of left subclavian artery, bilateral carotid arteries, and origin of superior mesenteric artery. Doppler study of the upper limb suggested subclavian steal phenomenon. Doppler ultrasound of renal arteries confirmed their patency. Ophthalmology evaluation revealed normal fundus examination and no evidence of vascular occlusion.

Antepartum Monitoring

Dating scan validated the period of amenorrhoea. Aggressive BP control was achieved with alphasopa, nifedipine, and labetalol. As patient was in her 'active disease' state, immunosuppressive therapy with methylprednisolone 24 mg once a day was started and continued throughout her pregnancy. During each antenatal visit, BP monitoring, fundal height measurement, and serial monitoring of CRP, ESR, and urine protein were done. At 32 weeks of gestation, fundal height was measured, 30 cm. Obstetric scan with fetal Doppler study showed 3-week disparity in fetal growth with high-resistance blood flow in the umbilical artery. Patient was admitted for strict fetal surveillance. Modified biophysical profile was carried out twice a week, and a serial fetal Doppler profile was done at weekly interval. Antenatal steroid cover was instituted. At 35 weeks of gestation, fetal Doppler study showed absent diastolic flow in umbilical artery with reversal of flow in a few loops.

Labor Management

A lower segment caesarian section (LSCS) was done for obstetric indication of fetal growth restriction, abnormal Doppler parameter, and unfavorable Bishop's score. Cardiologist suggested an LSCS as the mode of delivery due to the increased risk of aortic dissection in this patient if kept for vaginal delivery. A female baby of 1.9 kg, with Apgar score of 7/10 at 1/5 min, was born. The baby was in Neonatal Intensive Care Unit for 3 weeks for preterm care.

Post-operatively, the patient was carefully monitored for signs of failure and BP fluctuation. Cardiac enzymes were found to be normal. Antihypertensives nifedipine, clonidine, and labetalol and steroids were continued. Postpartum period was uneventful, and the patient was discharged on the seventh post-operative day. Postpartum checkup after 6 weeks was normal.

Discussion

TA is a rare entity that affects aorta and its branches. It has an autoimmune background where endothelial auto-antibodies, human leukocyte antigen, and sex hormones play the key role. It is an idiopathic chronic inflammatory vascular disease affecting young women of reproductive age, named after Dr. Mikoto Takayasu [1]. Ishikawa classified the disease according to the presence of major complications such as hypertension, retinopathy, aneurysms, and aortic insufficiency: stage I, no complications are observed; stage IIa, patients have only one of these complications; stage IIb, patients have only one of these complications, but in severe form; and stage III, when more than one complication is present [1]. Our patient belonged to stage III.

Effect of Pregnancy on Disease

Literature gives us contradicting reviews. While some studies say that course of disease remains unaffected, others postulate that increased blood volume in pregnancy alters systemic circulation and exacerbates hypertension, aortic regurgitation, and congestive heart failure [2]. Our patient was strictly monitored throughout the pregnancy with multidisciplinary approach and did not show any worsening.

Effect of Disease on Pregnancy

Maternal complications like antepartum hemorrhage, superimposed pre-eclampsia, aortic aneurysm rupture, renal insufficiency, and pulmonary embolism may be anticipated. Aggressive BP control with antihypertensives is known to improve not only maternal but also fetal outcome. Literature states that 19.7 % of mothers deliver an intrauterine growth restriction (IUGR) baby [3]. Other complications encountered may be miscarriage, prematurity, and intrauterine death (IUD). In our case, the patient delivered a growth-restricted baby attributed to compromised uteroplacental circulation and a timely intervention was possible with the aid of deranged Doppler parameters.

Literature gives a controversial opinion on delivery. While Sawant et al. [4] suggest that LSCS is done for severe cases, Papantoniou et al. [5] opine that a normal delivery can be attempted with favorable Bishop's score. Vivian et al. [6] proposed a prognostic score to predict the neonatal outcome by grading the severity of maternal affection. In accordance with the proposed score, our patient had aortic involvement (Score 1), proper treatment from the first trimester (Score 0), and did not develop pre-eclampsia (Score 0). Although the risk score was low, the

baby had restricted growth, abnormal Doppler parameters, and required NICU stay.

Conclusion

Our case is unique for the following reasons. Aortoarteritis in women of Indian origin is very rare. The disease was diagnosed first antenatally where clinical examination played the key role. Our case emphasizes the need for multidisciplinary management and importance of monitoring the hemodynamic stability of mother and fetal wellbeing for a successful pregnancy.

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Compliance with Ethical Standards

Conflict of Interest Dr. Sujatha Narayanamoorthy and Dr. Radhamany Ramanan declare that they have no conflict of interest.

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