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## Case Report

# Takayasu's arteritis in pregnancy: a rare case report from BJGMC and Sassoon Hospital Pune, Maharashtra, India

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### ABSTRACT

Takayasu's arteritis is a chronic idiopathic vasculitis affecting aorta and its primary branches, commonly seen in young women of Asian or oriental descent during child bearing age. Incidence is 2.6 cases/million/year. It affects females in the reproductive years accounting for almost 80% of the cases. A 34 year female G2P1L1 with 9 months of amenorrhea with previous LSCS known case of takayasu arteritis, epilepsy with right side hemiparesis with aphasia. She proceeded to have elective LSCS with ventouse delivery under epidural anaesthesia and delivered alive healthy female baby weight 2.4 kg and patient was transferred to intensive care unit for observation for 48 hrs. patients intrapartum post partum period was uneventful and discharged after 1month with cardiology fitness. Pregnancy with takayasu arteritis (pulseless disease) requires a multidisciplinary management from gynaecologist, cardiologist, neurologist for favourable maternal and fetal outcome.

**Keywords:** Pregnancy, Pulseless disease, Takayasu arteritis

### INTRODUCTION

Takayasu's arteritis is a chronic idiopathic vasculitis affecting aorta and its primary branches, commonly seen in young women of Asian or oriental descent during child bearing age. Incidence is 2.6 cases/million/year.<sup>1</sup> It affects females in the reproductive years accounting for almost 80% of the cases.<sup>2</sup> The evolution of the disease is not affected during pregnancy; however, one should be careful with the peripartum conduction of these patients, since they can develop complications such as hypertension, multiple organ dysfunction, stenosis that hinder regional blood flow and therefore monitoring of blood pressure, and restricted intrauterine growth.<sup>3</sup> The objective of the present study was to describe the management of a gravida with TA, its implications on

anesthetic technique, and review the literature of the subject.

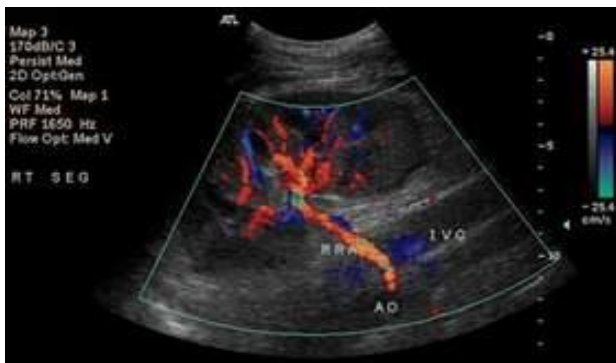
### CASE REPORT

A 34 year female G2P1L1 with 9 months of amenorrhea with previous LSCS known case of takayasu arteritis on medication (tab prednisolone 20mg, tab aspirine 150mg) known case of epilepsy on medication (tab carbamezapine 100mg) she has history of right side hemiparesis from 10yrs with aphasia. On physical examination, lower limb pulses and left upper arm were palpable with absent carotid and right upper limb pulses. Her BP on right upper limb was 90/70 mmhg and left upper limb was 110/80 mmhg. There was no jugular venous distension. On auscultation 1st and 2nd heart sound was heard normal with no murmur. History

suggestive of intermittent claudication, fever, arthralgia from four years which subside on treatment. Clinically she was in 38 weeks gestation.

After thorough history taking and examination. Cardio reference was done, tab metoprolol 12.5mg started and decision to stop tab aspirin were taken. Then neurology reference was done in view of epilepsy continue previous medication. Fitness for surgery taken. All routine antenatal and specific blood investigation were done. 2D echo report mild global hypokinesia with left ventricular ejection fraction of 55% with normal left ventricular function. Initial laboratory values revealed markedly elevated C-reactive protein (2.4mg/dL) and ESR (120mm/hr) with normal Complete blood count, liver and renal function tests, urine analysis. funduscopy were normal. Foetal USG with Doppler velocimetry revealed normal growth and no uteroplacental insufficiency. specific investigations were carried out such as dsDNA, APLA, ANA, cANCA, pANCA, which were negative. Renal artery Doppler was normal.

The couple were counselled adequately about the foeto-maternal prognosis and informed consent taken and decision for elective LSCS made. Under epidural anaesthesia LSCS with ventouse delivery was done. She delivered live healthy female weight 2.4 kg and patient was transferred to intensive care unit for observation for 48hrs. patients intrapartum and post-partum period was uneventful and discharged after 1month with cardiology fitness. On tab prednisolone 20mg, tab aspirine 150mg, tab carbamazepine 100mg. and advised regular follow up in cardiology, neurology and gynecology OPD.



**Figure 1: Normal colour Doppler in patient.**

## DISCUSSION

Takayasu Arteritis was first described in 1908 by two Japanese ophthalmologists, Takayasu and of the pulmonary artery).<sup>4</sup> The disease can also be classified into stages according to the presence of major complications such as hypertension, retinopathy, aneurysms, and aortic insufficiency Onishi, who observed retinopathy in the absence of peripheral pulses.<sup>5</sup> Although more common in Oriental women it is seen worldwide.<sup>6</sup> The cause is unknown, but it seems to be related to

autoimmunity, sex hormones (more common in young females), and genetics (demonstrated by the predisposition of the human leukocyte antigen – HLA BW52).<sup>7</sup> Four types of Takayasu Arteritis can be identified: Type I (disease involving the aortic arch and its branches), type II (lesions restricted to descending thoracic aorta and abdominal aorta), type III (patients have characteristics of types I and II), and type IV (involvement abdominal aorta, renal arteries or both).<sup>8</sup> Stage I, no complications are observed; stage IIa, patients have only one of these complications; and stage IIb, patients have only one of these complications, but the severe form; stage III, when more than one complication is present. The patient presented here was in stage II, but during pregnancy her hypertension was compensated and her aneurysm had been corrected.

Aetiology of Takayasu's arteritis is unknown but autoimmune process and infection has been considered to play a role in pathogenesis. Patient may be asymptomatic with impalpable pulse or may present with symptoms ranging from fever, fatigue, weight loss to life threatening haemoptysis, heart failure from aortic regurgitation, or catastrophic neurological impairment.<sup>9</sup> On physical examination the patient may have diminished or absent pulse, difference between BP in arms, presence of bruits over neck, supraclavicular area, abdomen and hypertension.

The American society of Rheumatology has devised criteria for diagnosis of Takayasu's arteritis.<sup>10</sup>

- Age at disease onset  $\leq 40$  yrs
- Claudication of extremities.
- Decreased/ absent brachial artery pulse
- Systolic BP difference of  $>10$  mm Hg between arms
- Bruit over subclavian artery or aorta.
- Aortogram abnormality.

Presence of three or more criteria confirms the diagnosis of disease with sensitivity of 90.5% and specificity of 97.8%.

Fertility is not adversely affected and pregnancy does not appear to exacerbate the disease or the inflammatory activity and the hemodynamic status may improve with pregnancy. Whenever possible, women should be assessed preconceptionally so that appropriate adjustments or stoppage of cytotoxic drugs to be made prior to conception.<sup>11</sup>

Antenatal care should be provided by a multidisciplinary team including obstetrician, radiologist, anaesthetist, cardiologist and rheumatologist. Maternal complications include superimposed pre-eclampsia, congestive cardiac failure, cerebral haemorrhage, progressive renal impairment.<sup>11</sup> Fetal complications include intrauterine growth restriction. Baseline investigations include ESR and CRP, Doppler ultrasound, MR imaging to assess severity of disease and echocardiogram to assess ejection

fraction. Fetal growth should be monitored serially with ultrasound and colour Doppler.

Steroids can be used safely during pregnancy in the low doses.<sup>12</sup> Prednisolone is metabolised by the placenta and thus not transmitted to the fetus except at high doses. Pregnancy is allowed to continue till term and induction of labour is considered only in presence of superimposed pre-eclampsia or hypertension. Elective caesarean section is indicated for severe disease. The anaesthetic management is important and it is advisable to involve anaesthetist at an early gestation. Hypertension in the second stage of labour is a risk factor for cerebral haemorrhage, shortening this stage by use of forceps or vacuum extraction appears to be a reasonable solution.<sup>13</sup>

Contraception in the form of progesterone only pill, depot injections or intra-uterine devices can be recommended, but combined contraceptive pill is avoided as there is increased risk of thromboembolism.<sup>11</sup>

## CONCLUSION

Pregnancy with Takayasu arteritis (pulseless disease) requires a multidisciplinary management from gynaecologist, cardiologist, neurologist for favourable maternal and fetal outcome.

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