CrossRef DOI of original article:

Takayasu Arteritis in Pregnancy: A Rare Case Report

Received: 1 January 1970 Accepted: 1 January 1970 Published: 1 January 1970

Abstract

Index terms—
Takayasu Arteritis in Pregnancy: A Rare Case Report lata Assudani

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2 I. INTRODUCTION

Takayasu arteritis (TA), also known as "young female arteritis", is a rare and chronic inflammatory disease of large vessels. The disease mainly affects women of reproductive age and Asian origin (1) . Moreover, TA leads to several complications including ocllusion as well as aneurysm formation in systemic and pulmonary arteries. Its incidence is reported to be 13 cases per million population (2) . Pregnancy as such has no effect on the evolution of the disease, however, its peak incidence is in second and third trimesters.

Thus, such patients warrant special attention during peripartum period owing to likelihood of development of complications such as hypertension, multiple organ dysfunction and stenosis hindering regional flow leading to restricted intrauterine fetal growth and low birth weight in babies (3)(4)(5).

Delay in diagnosis is quite common, so patients often conceive without prior knowledge of having TA or having initiated specific treatment against it (6) Ideal management for pregnant patients with this disease still poses a stringent challenge, an interdisciplinary collaboration of obstretricians, cardiologists, rheumatologists and neurologists is often necessitated for an optimal maternal and fetal prognosis. Here is the case described to enlighten the obstretricians on fetomaternal outcome and management of this infrequent but not uncommon clinical entity encountered nowdays. Baby cried immediately after birth and was admitted in NICU in view of Extremely preterm and very low birth weight of 1.1kg.

3 II. CASE HISTORY

Patient was shifted to CCU for post-operative monitoring which was uneventful. Interventional radiologist reference done in view of definitive management of Takayasu arteritis and was advised PET CT and stenting after funds are available.

Patient was discharged with baby on day 36 PNC.

4 III. DISCUSSION

Takayasu arteritis was first described in 1908 by 2 Japanese opthalmologists, Mikito Takayasu and onishi, who observed retinopathy in the absence of peripheral pulses. The cause is unknown, but it seems to be related to autoimmunity, sex hormone (more common in young females) and genetics (demonstrated by the predisposition of the human leukocyte antigen-HLABW52).

Disease progression typically occurs in various stages from acute inflammatory arteritis to lymphocytic infiltration, intimal thickening, elastic tissue destruction, fibrosis and patchy minimal narrowing of arteries.

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Depends on angiographic classification there are five types based on the involvement arteries (1,7) .

Type The incidence of Takayasu arteritis during childbearing years is relatively high, the management of pregnancies with this disease is of great importance in clinical obstetrics. Pregnancy with Takayasu arteritis can be complicated by hypertension, as seen in our case, and worsening of cardiovascular hemodynamic status.

Hypertension is a serious complication that can lead to intrauterine growth retardation, fetal hemorrhage, and maternal heart failure (8) . The increased intravascular volume seen during pregnancy may impair circulation and exacerbate maternal hypertension, aortic regurgitation, and congestive heart failure (9).

The disease causes various clinical conditions depending on the sites of constriction such as arm claudication, decreased arterial pulses, visual loss, stroke, aortic regurgitation, Hypertension, congestive cardiac failure. Hypertension is seen in 90% cases Takaysu arteritis. The clinical patterns of TA differ at the acute and chronic periods. In the acute period, systemic symptoms prevail, while in the chronic period, insidious ischemic-destructive signs are more prevalent.

These signs appear together with stenosis at a rate of 85%, dilatation at a rate of 2%, and stenosis and dilatation at a rate of 13% (10,11,12) .

The symptoms range from fever, fatigue, and weight loss to life-threatening hemoptysis and heart failure.

Diagnosis is usually based on clinical manifestations, inflammatory markers (acute phase reactants), and arteriography demonstrating aortic stenosis and of its branches.

Common features of active TA are fatigue, myalgia, arthralgia, and low-grade fever in initial stages and intermittent claudication, visual defects, and fainting attacks in later stages. Many may be diagnosed after clinical examination, when one or more peripheral pulses are not palpable or blood pressures vary in two limbs.

However, computed tomography or magnetic resonance angiography can detect TA even before the development of severe vascular compromise as in our case (13) B Recently, 18 FDG-PET scan has been added as an adjunct imaging modality in the armamentarium of rheumatologists and cardiologists to diagnose LVV, with a pooled sensitivity and specificity of 70.1% and 77.2%, respectively (14) . But this is currently not available in our hospital.

However, the gold standard for diagnosis still remains as vessel biopsy (10) which could not be performed in our case.

The management of TA is a multidisciplinary approach with the involvement of obstetricians, anesthesiologists, cardiologists, rheumatologists, and neonatologists. Ultimately, the aims encompass the control of inflammation, prevention, and treatment of complications like hypertension and occlusive or stenotic lesions (15) . The aims are control of inflammation, prevention and treatment of complications like hypertension and revascularization by percutaneous angioplasty, use of endoprosthesis, or surgical correction for occlusive and stenotic lesions.

When managing women of reproductive age with TA, preconception counseling is essential. In addition, such counseling will focus mainly on dosage adjustment, cessation of cytotoxic drugs, folic acid supplementation in the London Journal of Medical and Health Research

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Takayasu Arteritis in Pregnancy: A Rare Case Report periconception period, and the optimal timing of pregnancy. Similarly, the pregnancy should be ideally planned in remission phase and patients are encouraged to pursue an early booking for regular antenatal supervision. In addition to routine antenatal visits, serial monitoring of BP, renal function, cardiac status, and pre-eclamptic screening is vital in such patients. Furthermore, fetal surveillance is also necessary and will include daily fetal kick count, gravidogram, serial fetal biometry, biophysical profile, and fetal Doppler (16) Controlling BP during pregnancy may be difficult due to the physiological changes in this period.

Thus, any patient with TA should plan to conceive when the BP and disease are stable. It is also vital to adjust the antihypertensive medication and avoid angiotensin-converting enzyme inhibitors or angiotensin inhibitors. On the other hand, uncontrolled hypertension during pregnancy has been associated with abortion, stillbirths, aortic dissection, cardiac and renal insufficiency, stroke, and maternal death (17)(18)(19) .

Antihypertensive drugs and antiplatelets can be started as per need, as was in the present case. TA may respond symptomatically to corticosteroid therapy (first line drugs) at a dose of 1-2 mg/kg/bodyweight for 4 weeks followed by slow tapering. However, chronic use of corticosteroids could lead to suppression of adrenal gland activity with inadequate release of endogenous corticosteroids in moments of stress, such as surgeries (20) . Also immune-suppressors including methotrexate and azathioprine are used.

Finally, vaginal delivery has proven to be the preferred mode of labor management for patients with TA. Additionally, epidural analgesia has been advocated for labor and delivery as well and delivery abbreviated by use of forceps. In our case, decision for emergency LSCS taken in view of USG S/O uteroplacental and fetoplacental insufficiency with previous lscs with short ICP and was uneventful.

Patient was monitored postoperatively in CCU and was transferred to medicine for further management, where patient continued on steroids as she was breast feeding and methotrexate was contraindicated and discharged with advise to monitor BP and follow up with BP charting after 3 months for revasvularisation surgery. [1] [2]

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[2] Takayasu Arteritis in Pregnancy: A Rare Case Report

[Koster and Matteson] , M J Koster , E L Matteson , KJ .

[Papandony et al. ()] , M C Papandony , S R Brady , T J Aw . *Med J Aust* 2015. 202 p. . (Google Scholar)

[Mohamed et al. ()] 'A case of Takayasuarteritis causing sub clavian steal and presenting as syncope'. A P Mohamed , L C Michael , E Mikhail . *J Emer Med* 2011. 40 p. .

[Kraemer et al. ()] 'A successful pregnancy in a patient with Takayasu's arteritis'. B Kraemer , H Abele , M Hahn . *Hypertens Pregnancy* 2008. 27 p. . (Google Scholar)

[Kathirvel et al. ()] 'anesthetic management of patients with Takayasu arteritis : a case series and review'. S Kathirvel , S Chavan , V K Arya . *anaesthesia and analgesia* 2001. 93 p. .

[Levy-Neto M. Demographic, clinical and angiographic data of patients with Takayasuarteritis in Brazil Hypertens Pregnancy ()] 'Levy-Neto M. Demographic, clinical and angiographic data of patients with Takayasuarteritis in Brazil'. *Hypertens Pregnancy* 2008. 1998. 27 p. . (Int J Cardiol)

[Assad et al. ()] 'maternal and neonatl outcomes in 89 patients with Takayasu arteritis: comparision before and after the TA diagnosis'. A P L Assad , T F Da Silvia , E Bonfa , R M R Perreria . *the journal of rheumatology* 2015. 42 (10) p. .

[Ioscovich et al. ()] 'Peripartum anesthetic management of patients with Takayasu's arteritis: case series and review'. A Ioscovich , R Gislason , A Fadeev , S Grisaru-Granovsky , S Halpern . 10.1016/j.ijoa.2007.12.001. *Publisher Site | Google Scholar*, 2008. 17 p. . (London Journal of Medical and Health Research)

[Suri et al. ()] 'Pregnancy and Takayasu arteritis: a single centre experience from North India'. V Suri , N Aggarwal , A Keepanasseril , S Chopra , R Vijayvergiya , S Jain . *J Obstet Gynaecol Res* 2010. 36 p. . (Google Scholar)

[Suri et al. ()] 'Pregnancy and takayasu arteritis: a single centre experience fron north india'. V Suri , N Agrawal , A Keepanasseril , S Chopra , R Vijayvergiya , S Jain . *Journal of obstretrics and gynecology research* 2010. 36 (3) p. .

[Matsumara et al. ()] 'Pregnancy in Takayasu arteritis from the London Journal of Medical and Health Research view of internal medicine'. A Matsumara , R Moriwaki , F Numano . *Heart Vessels Suppl* 1992. 7 p. . (Google Scholar)

[Matsumura et al. ()] 'Pregnancy in takayasu arteritis from the view of internal medicine'. A Matsumura , R Moriwaki , F Numano . *Heart Vessels* 1992. 7 p. 120124. (suppl)

[Oner et al. ()] 'Recent advances in Takayasu's arterit is'. F A Oner , S Z Aydin , H Direskeneli . *European Journal of Rheumatology* 2015. Google Scholar. 1 p. .

[Oner et al. ()] 'Recent advances in Takayasu's arteritis'. F A Oner , S Z Aydin , H Direskeneli . *European Journal of Rheumatology* 2015. Google Scholar. 1 p. .

[Warrington ()] 'recent advances in the clinical management of giant cell arteritis and Takayasu arteritis'. Warrington . *Current opinion in rheumatology* 2016. (3) p. . (Google Scholar)

[Beilin and Bernstein ()] 'successful epidural anaesthesia for a patient with Takayasu's arteritis presenting for caesarean section'. Y Beilin , H Bernstein . 10.1007/bf01744542. *Publisher Site | Google Scholar*, 1993. 40 p. .

[Sharma et al. ()] 'Takayasu arteritis in India'. B K Sharma , S Sagar , A P Singh , S Suri . 10.1007/bf01744542. *Publisher Site | Google Scholar*, 1992. 7 p. .

[Takayasu's arteritis in pregnancy complicated by peripartum aortic dissection. Lakhi NA Jones J. Arch Gynecol Obstet ()] 'Takayasu's arteritis in pregnancy complicated by peripartum aortic dissection. Lakhi NA'. *Jones J. Arch Gynecol Obstet* 2010. 282 p. . (Google Scholar)

[Marwah et al.] 'Takayasu's arteritis in pregnancy: a rare case report from a tertiary care infirmary in India'. S Marwah , M Rajput , R Mohindra , H Gaikwad , M Sharma , Topden S Case . *Rep Obstet Gynecol* 2017 p. . (PMC free article. Pub Med] [Google Scholar)

[Langford et al. ()] *The Vasculitis Syndrome S*, A C Langford , A S Fauci , L D Lango , D L Kasper , J L Jameson , A S Fauci , S L Hauser , J Loscalzo . 2015. Mc Graw Hill. (s principles of Internal Medicine 18th edition)

[Vasculitis or fibromus culardysplasia?] *Vasculitis or fibromus culardysplasia?*,

[Wilke ; Hahn et al. ()] 'Ws -large vessel vasculitis (giant c ell arteritis, takayasu arteritis)'. M Wilke ; Hahn , T Rajab , E Kraemer , D Wallweiner . *Baillieres Cl in Rheumatol* 1997. Kraemer B, Abele H,. 11 p. .