



TAKAYASU'S ARTERITIS IN PREGNANCY – A RARE CASE REPORT.

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ABSTRACT

Takayasu's arteritis is a chronic inflammatory obliterative arteritis of unknown aetiology. Anaesthesia in these patients is complicated by uncontrolled hypertension, hypoperfusion of organs and difficulty in BP monitoring due to stenosis and aneurismal dilatation of arteries. This case report is about successful management of a 27 yrs old primigravida with known case of Takayasu's arteritis, Seizure disorder and Hypothyroidism at 38 wks of gestation on treatment who underwent an emergency caesarean section under spinal anaesthesia. The intraoperative and postoperative period was uneventful. Uniqueness of this case is maintenance of adequate mean arterial pressure in a hypothyroid patient with TA by adequate preloading and SAB with low dose local anaesthetic with a narcotic (fentanyl).

KEYWORDS: Takayasu's arteritis, Subarachnoid block, Lower segment caesarean section, Hypothyroidism, Local anaesthetics and Fentanyl.



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INTRODUCTION

Takayasu's arteritis (TA) is chronic inflammatory progressive and idiopathic diseases causing narrowing, occlusion, and aneurysm of systematic and pulmonary arteries affecting mainly aorta and its branches^{1,2}. It is more common in female³ than male(8:1) and peak incidence is in 2nd and 3rd decade of life. Since patients can develop complications such as hypertension, hypo perfusions of organs due to stenosis and multiorgan dysfunction it needs meticulous monitoring of blood pressure⁴ in the perioperative period. Uniqueness of this case report was successful management of a primigravida with known TA, seizure disorder and hypothyroidism on treatment who underwent emergency caesarean section under low dose spinal anaesthesia.

CASE REPORT

27 yrs primigravida (height- 145 cm, weight- 82kgs) a known case of hypothyroidism, seizure disorder and TA on treatment underwent emergency LSCS @ 38wks due to fetal distress. She was a known case of Hypothyroidism and seizure disorder since last 6 yrs on Eltroxine 100µgm once daily and Sodium valproate 200mg thrice daily respectively. There was no episode of seizure throughout the antenatal period. She had H/O pain & numbness in both side upper limbs more on left side for 6 months for which she was investigated and diagnosed as a case of Takayasu's arteritis at Stanely medical college and she was advised tab. Aspirin 75 mg once daily and Prednisolone 5mg twice daily since last 3yrs. During her antenatal period she stopped tab. aspirin after two month of pregnancy and was fully recovered from the problem except some residual weakness in left upper limb(power grade -4). On preanaesthetic evaluation patient was alert, oriented and afebrile. Pulse rate was 74/ min and was very feeble on right radial and was absent on left radial artery. Right brachial pulse was better than left brachial pulse. Both dorsalis pedis pulse was normal. Blood pressure in right upper limb was 86/74 mmHg and right lower limb was 160/80 mmHg. Respiratory rate was 14/min. Room air oxygen

saturation (SPO₂) was 98%. Auscultation of cardiovascular and respiratory system was normal. Neurological examination shows residual weakness in left upper limb. Preoperative investigations of the patient including haemogram, renal functions, coagulation profile, ECG and echocardiography were within normal limit. CT angiogram of aorta and both upper limb arteries showed wall thickening of aortic arch, reduced calibre of both side upper limb arteries in their entire length. Critical stenosis of 2nd part of right subclavian artery and left subclavian artery at its origin and reformed by collaterals. After explaining the risk involved with the surgery under anaesthesia with the patient and her relatives informed consent was obtained. Patient was premedicated with injection Ranitidine and Metoclopramide and was sifted to operation theatre. All monitoring devices were connected including 5 lead ECG, pulse oxymetry and noninvasive BP cuff on right thigh. Baseline BP was 164/88 mmHg, HR 90/min, RR 16/min and room air oxygen saturation(SpO₂) was 98%. An 18 Gauge IV cannula was secured in dorsum of left hand, injection Hydrocortisone 100mg was given IV and she was preloaded with Ringer lactate (20ml/kg body weight) . Under strict aseptic precaution subarachnoid block (SAB) was performed with 7.3 mg of hyperbaric Bupivacaine along with 25 µg Fentanyl between 4th and 5th lumber interspace using 25 G spinal needle in left lateral position avoiding neck flexion. The patient was then placed in supine position with pillow below head and 100% oxygen was given to the patient. An obstetrics wedge (15 degree left lateral tilt) was kept below right hip to prevent aortocaval compression. After SAB a transient fall in BP to 110/70 mmHg occurred which responded to 200ml of bolus Ringer lactate solution and 6 mg of injection of Mephenteramine IV. Mean arterial pressure was maintained above 100 mmof Hg and neurological status was assessed by verbal communication with patient during intraoperative period. After baby delivery oxytocin infusion was started (10IU in 500mls of RL @ 8-10 drops /min) ,4liter/min oxygen given by face mask and patient was sedated with inj. Midazolam 1mg IV. The procedure

lasted for one hour and there was no further fall in BP. Procedure was uneventful. For post operative analgesia 10ml of inj. Bupivacaine 0.25% was infiltrated at wound site and it was supplemented with injection Tramadol 50mg IV thrice daily and Paracetamol suppository thrice daily. Patient was monitored for 48 hours in post operative ward during which all the vital parameters were stable.

DISCUSSION

Takayasu arteritis was first described in 1908 by two Japanese ophthalmologists Takayasu and Onishi who observed Retinopathy with absence of peripheral pulses⁵. Incidence is 2 to 3 per million. A granulomatous vasculitis of the aorta and its branches and pulmonary artery⁶ incidence in Indian people is not known. Peak incidence is in 2nd and 3rd decades. TA is classified into 4 types^{7,8}. Type 1 disease involves the aortic arch and its branches. Type 2 is restricted to descending thoracic aorta and abdominal aorta. Type 3 includes features of both type 1 and 2. Type 4 has additional involvement of pulmonary artery. This patient had type 1 disease. Anaesthesia in patients with TA is complicated by severe uncontrolled hypertension leading to end organ dysfunction, stenosis of major blood vessels affecting regional circulation and difficulty monitoring blood pressure. Anaesthetic goal in patients with TA is maintenance of BP during perioperative period. Both GA and regional anaesthesia has its own advantages and disadvantages. GA is

complicated by increase in BP during tracheal intubation, extubation and inadequate depth of anaesthesia leading to cerebral haemorrhage and rupture of aneurysm. Regional anaesthesia is complicated by uncontrolled hypotension leading cerebral ischemia^{8,9}. Studies are there which shows surgery is done both under GA and regional anaesthesia safely. In my case which is a low grade disease with hypothyroidism where regional anaesthesia is preferred. This case was managed by low dose of Bupivacaine (7.5mg)¹¹ with fentanyl 25µg for subarachnoid block so that haemodynamic fluctuation with higher dose of local anaesthetic was avoided. The main aim in this case was to maintain Mean arterial pressure(MAP) more than 100mmHg so as not to allow more than 20% fall in MAP. This is achieved by adequate preloading with Ringer's lactate (20ml/kg) and titrated doses of intermittent bolus doses of inj. Mephenteramine IV. Extreme head flexion or extension was avoided as it might decrease carotid blood flow. Patients neurological functions were monitored by continuous verbal communication with her as these patients are more prone for cerebral ischemia. To conclude, thorough preoperative evaluation and proper planning of anaesthesia is important in patients with Takayasu's arteritis. Choice of anaesthesia technique depends on presentation of disease. Maintenance of MAP is the goal This can be achieved by adequate preloading and using a lower dose of local anaesthetic in combination with fentanyl to produce SAB.

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