Case Report

Anaesthetic Management of A Pregnant Patient With Antiphospholipid Syndrome and Dengue Fever for Emergency Caesarean Section: A Case Report and Review of Literature

Deep Gagan, Gupta Kewal Krishan, Kaur Rajvir and Singh Amanjot

Department of Anaesthesia, G.G.S.M.C.H, Faridkot, Punjab, India.

ABSTRACT

Antiphospholipid syndrome is an autoantibody-mediated acquired thrombophilia which is characterized by recurrent arterial or venous thrombosis and/or pregnancy morbidity. Presence of dengue infection along with this, can induce its catastrophic form which involves coagulopathic thrombosis by immunogenesis. Catastrophic variant can cause multiorgan dysfunction and can also lead to morbidity and mortality in APLA patients. So, focusing on APLA syndrome with prevention of its catastrophic form due to presence of active viral infection, hereby, we discuss a case report of the anaesthetic management of 35 year-old, 55-kg female, G6P2L1A3 with previous one lscs with 36 weeks of gestation posted for an emergency caesarean section. Further, measures that are necessary for prevention of catastrophic variant of antiphopholipid syndrome are discussed in this review. Also in patients with a history of antiphospholipid syndrome with active infection, there is limited literature available with no proper set of guidelines for safe conduct of anaesthesia .

Key Words: Antiphospholipid syndrome; catastrophic variant ;dengue.

Received: 17 July 2024**, Accepted:** 23 August 2024

Corresponding Author: Kaur Rajvir, MD, Department of Anaesthesia , G.G.S.M.C.H, Faridkot, Punjab, India, **Tel.:** +91 8557879837, **E-mail:** docrajvirkandhola32@gmail.com

ISSN: 2090-925X, 2024, Vol.16, No. 01

INTRODUCTION

Coagulation disorders are a common sight in pregnant females. Antiphospholipid syndrome is one of such condition with autoimmune linkage with incidence of 2 patients per 100000 population per year[1]. It is commonly suspected in females with recurrent fetal loss. Presence of antiphospholipid antibodies leads to various thrombotic and bleeding complications. Moreover , the presence of dengue infection along with this, can induce its catastrophic form which involves coagulopathic thrombosis by immunogenesis[2]. So, focusing on APLA syndrome with prevention of its catastrophic form due to presence of active viral infection, hereby, we discuss the anaesthetic management of such patient posted for an emergency caesarean section.

Case Report

A 35 year-old, 55-kg female, G6P2L1A3 with previous one lscs with 36 weeks of gestation was admitted at peripheral hospital for planned elective caesarean section. She was a known case of APLA syndrome (due to her poor obstetric history) and was started on injection Enaxoparin 40mg od and tab aspirin 75 mg od at her first antenatal visit. She was referred to our institute for emergency caesarean section due to onset of labour pains with poor Bishop score and non availability of paediatrician. Pre-anaesthetic check up revealed episodes of fever since 2 days for which fever profile was sent and came out to be IgM positive for dengue infection. Further, clinical examination did not yield any noteworthy abnormalities except bruises over upper limbs and temperature 100°F . Her all routine investigations were within acceptable range except haemoglobin 9gm/dl, platelet count of 90 x 10^9/L and incomplete coagulation profile {unavailability of aPTT (activated partial thromboplastin time)report}. Injection Enaxoparin and tablet ecospirin was stopped around 7 days back as per previous admission records due to unknown reasons. So, due to incomplete coagulation profile, presence of precipitating factors for catastrophic variant of APLA syndrome like early withdrawal of anticoagulant treatment, presence of active dengue infection in this case and to avoid neuraxial anaesthesia associated risk of haematoma, we planned general anaesthesia for caesarean section. Blood products including packed red blood cells, fresh frozen plasma and platelet concentrates were arranged beforehand.

After taking informed written consent, she was premedicated with ranitidine 50mg iv and metoclopramide 10 mg intravenously (IV) in the pre-induction room. In the operating room, routine monitors (ECG, pulse oxymeter and blood pressure) were attached. After securing 18 gauge iv access she was preloaded with 500 ml of normal saline to combat dehydration associated with dengue infection. After preoxygenation with 100% oxygen for 3 mins,

DOI: 10.21608/ASJA.2024.282763.1092

rapid sequence induction was performed with propofol 2.5 mg/kg IV and succinylcholine 1.5 mg/kg body weight IV. The patient was intubated and confirmed by $EtCO_2$.The ventilator settings were adjusted to keep $EtCO_2$ between 35-40 mm of Hg. Anaesthesia was maintained with oxygen and nitrous oxide in 50:50 ratio and isoflurane in concentrations of 0.4–1.0%. For muscle relaxation injection atracurium was used. Temperature monitoring was done to detect any hypothermia leading to coagulation dysfunction. Antiembolic stocking was also applied on both lower limbs. After delivery of the baby, oxytocin 20 units in infusion was started and fentanyl 2 µg/kg IV was given. Intra-operatively, a total of 1.5 L of crystalloids and one packed Rbcs were given according to blood loss . After completion of surgery, bilateral tranverse abdominis plane block with 20 ml of 0.25% ropivacaine was given before reversal. She was reversed with glycopyrrolate 0.01 mg/kg IV and neostigmine 0.05 mg/kg IV and extubated with stable vitals.

DISCUSSION

Antiphospholipid syndrome is an autoantibody-mediated acquired thrombophilia characterized by recurrent arterial or venous thrombosis and/or pregnancy morbidity[3].It can be of primary kind with thrombotic sequalae or secondary kind with other autoimmune disorders. Features of APLA syndrome includes thrombosis of vessels, pregnancy morbidity, decrease in platelet count and other systemic organ involvements. A catastrophic type is also described[4]. It is defined as rapidly progressive thromboembolic disease involving three or more organs or tissues leading to functional defects. To improve the outcome in pregnant females with APLA syndrome, heparin and aspirin are used as treatment modalities to prevent thrombosis. Generally it is withheld at time of delivery with minimum disruption span but early withdrawal or sub optimal anticoagulation can be a triggering factor for its catastrophic variant as seen in our case.

Dengue is a mosquito borne infection characterized by acute febrile episodes with haemorhaggic tendency[5]. In our case risk of invoking catastrophic variant was there due presence of active viral infection that can lead to immunogenetic induction for coagulopathic thrombosis via molecular mimicry mechanism[6].So these patients should receive adequate antibiotic coverage for prevention of catastrophic variant of APLA syndrome. Other triggering factors include major surgery and trauma. If catastrophic variant occurs then the treatment modalities include plasmapheresis , immunosuppresion and steroids .

Type of anaesthesia in such cases is always debatable as there is limited literature on conduct of safe anesthesia. So to prevent the catastrophic variant of APLA syndrome in patient with presence of precipitating factors following measures should be taken:

1. A well advanced communication should be established between the obstetrician, anaesthesiologist and the hematologist.
2. The prothrombin and thrombin time are generally within normal range with prolonged APTT[7].So complete coagulation profile including APTT,PT ,BT and platelet count should be obtained.
3. Use of thromboelastography (TEG) to carry out advanced haematological tests should be encouraged.
4. Adequate preloading should be done to avoid any dengue associated dehydration.
5. Hypothermia must be avoided and temperature monitoring is essential in such cases.
6. To avoid any intraoperative thrombosis use of antiembolic stockings must be considered.
7. Adequate analgesia must be provided to avoid any stress response which can later precipitate catastrophic variant. In our case bilateral TAP block was given for postoperative analgesia.
8. Post operatively, early ambulation, monitoring of coagulation profile and early thromboprophylaxis should be considered.

CONCLUSION

Thus, in patients with a history of antiphospholipid syndrome with active infection, a multidisciplinary approach involving the anaesthesiologist, haematologist and obstetrician should be undertaken to prevent the chances of development of catastrophic variant and other known obstetric complications. Due care should be given to anticoagulation treatment with minimum possible interruption span.

CONFLICT OF INTERESTS

There are no conflicts of interest.

REFERENCES

1. Kim JW, Kim TW, Ryu KH, Park SG, Jeong CY, Park DH. Anaesthetic considerations for patients with antiphospholipid syndrome undergoing non-cardiac surgery. J Int Med Res 2020;48:1-25.
2. Chuang YC, Lin YS, Liu CC, Liu HS, Liao SH, Shi MD, et al.Factors contributing to the disturbance of coagulation and fibrinolysis in dengue virus infection. J Formos Med Assoc 2013;112:12-7.
3. 3.Moutsopoulos HM, Vlachoyiannopoulos PG. Antiphospholipid antibody syndrome. In Longo D, Fauci A, Kasper D, Hauser S, Jameson J, Loscalzo J, editors. Harrison's principles of Internal Medicine. 18th ed. New York: McGraw-Hill;2012. p.2736–8.

4. Merkel PA, Chang Y, Pierangeli SS, Convery K, Harris EN, Polisson RP. The prevalence and clinical associations of anticardiolipin antibodies in a large inception cohort of patients with connective tissue diseases. Am J Med 1996;101:576-83.

5. Wiwanitkit V. Dengue fever: Diagnosis and treatment. Expert Rev Anti Infect Ther 2010;8:841-5.

6. Wiwanitkit V. Antiphospholipid antibody syndrome and dengue fever. Med J DY Patil Vidyapeeth 2022;15:121.

7. Ringrose DK. Anaesthesia and the antiphospholipid syndrome: a review of 20 obstetric patients. Int J Obstet Anesth 1997;6:107–11.

Journal Name : ASJA
Article No: 2404 -1092
Queries and Remarks

Query No	Details Required	Author Responses
Q1	A running head short title was not supplied; please supply a short title of up to 40 characters that can be used	