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ANAESTHETIC CONSIDERATIONS OF ANTI-PHOSPHOLIPID ANTIBODY SYNDROME IN PREGNANCY

Anaesthesiology

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ABSTRACT

Anti-phospholipid syndrome (APS) is a systemic autoimmune acquired disease characterised by vascular thrombosis or pregnancy complications with the presence of antiphospholipid antibodies. It is a rare disease affecting 40-50/100,000 population and 10%-15% of recurrent abortions. Perioperative management in obstetric APS undergoing caesarean section stresses on the management of anticoagulation and prior choice of anaesthetic technique. We report the case of 26 year old multigravida ,37 weeks of gestation diagnosed with APS since 8 weeks of gestation. She had previous three miscarriages with lupus anticoagulant(LAC) value of 45.6 (normal – 36.8), IgM and IgG anticardiolipin antibody values were 8.5μ/ml and 3.8μ/ml, respectively. She was prophylactically put on Aspirin 75mg orally and Enoxaparin 0.4IU subcutaneously every 24 hours. She presented to the obstetric department and was planned for emergency caesarean section . She received her usual dose of enoxaparin on the day of surgery but aspirin was omitted. Surgery was conducted under subarachnoid blockade. Anticoagulation resumed 12 hours after surgery .No maternal and fetal complications were noted.

KEYWORDS

antiphospholipid syndrome , pregnancy, anticoagulation , sub-arachnoid block.

INTRODUCTION

Antiphospholipid Antibody (APLA) or Antiphospholipid Syndrome (APS) is an acquired disorder that was first described in 1983 as anticardiolipin syndrome.[1] It is an autoimmune disorder characterised by thrombotic events and recurrent fetal loss due to the presence of antibodies to negatively charged phospholipids.[2] It is a most common acquired hypercoagulable state. Prevalence is 40-50/100,000 population and accounts for 10-15%of recurrent pregnancy loss.[3] We present the perioperative course and complications seen in a 26-year-old woman with antiphospholipid antibody syndrome who underwent an emergency caesarean section.

CASE REPORT

A 26-year-old multigravida with 37 weeks amennorhea , diagnosed with antiphospholipid antibody syndrome was scheduled for emergency caesarean section. She had an obstetric history of single live baby delivered 7 years back followed by 3 consecutive pregnancy losses. She was a known case of gestational diabetes mellitus put on meal plan. She was investigated in view of bad obstetric history and was diagnosed with antiphospholipid antibody syndrome since 8 weeks of gestation , though there was no history suggestive of any thromboembolic events. She was put on Aspirin 75mg orally and Enoxaparin 0.4IU subcutaneously every 24 hours. She was monitored for serial prothrombin time, INR, activated partial thromboplastin time(APTT) . Investigations revealed Lupus anticoagulant(LAC) value of 45.6 (normal – 36.8), IgM and IgG anticardiolipin antibody values were 8.5μ/ml and 3.8μ/ml, respectively.

In view of bad obstetric history, an elective caesarean section was planned at term. However, she went into labor at 37 weeks of pregnancy and was taken up for emergency caesarean section. She received her usual dose of enoxaparin on the day of surgery but aspirin was omitted. Liver function tests revealed mildly elevated liver enzymes. All other investigations were within normal limits. In view of normal coagulation profile, it was decided to administer regional anaesthesia to the patient. Patient was pre-medicated with inj. Ranitidine 50mg and inj. Perinorm 5mg 30minutes prior to surgery. After shifting to operating room, ASA standard monitoring was applied to the patient and baseline parameters recorded as below ; blood pressure- 113/75mm Hg heart rate -78/min, SpO_2 – 97% at room air. A wide bore intravenous cannula secured. The patient was preloaded with 500ml crystalloids. Subarachnoid block was administered in sitting position under all aseptic precautions at L3-L4 interspace using 27G Quincke spinal needle with 10mg of 0.5% hyperbaric Bupivacaine (2ml) .Level of blockade was adequate(T6). Incision was started after anaesthesia was confirmed to reach the dermatome level of T6. A male baby weighing 3500g, 55cm length was delivered with Apgar score 8-9. Vitals of the baby were heart rate 150/min, respiratory rate 48/min, SpO2 91% and no congenital malformations was found. Total fluid input was 1200ml of crystalloids, urine output 200ml and blood loss was 700ml. The procedure lasted for 45mins. The patient was hemodynamically stable during surgery. Bilateral transverse abdominis plane block was given with 10ml of 0.25% inj. Bupivacaine on each side. Patient shifted to post anaesthesia care unit for further monitoring.

After surgery, the patient and her baby was transferred to the general ward. Enoxaparin 0.4IU was resumed 12 hours after surgery and continued for 6 weeks. Aspirin was discontinued. Rescue analgesia was given with inj. Paracetamol 1g iv in the first 24 hours. It was converted to oral paracetamol from POD 2. No significant complication was noted after 3 days of observation of the mother and neonate. A phone call follow-up 3 months after surgery revealed no significant complaint.

DISCUSSION

APS is characterised by thombotic and obstetric events like miscarriages associated with the presence of antiphospholipid antibodies. It is a multisystem disorder characterized by recurrent systemic arterial and venous thrombosis, recurrent abortion, thrombocytopenia and neurological disorders.[4] Currently there are three well- established antiphospholipid antibodies : Lupus Anticoagulant , anticardiolipin antibody (aCL) and anti-b2 glycoprotein 1 antibody (ab2GP1). According to the Indonesian Rheumatology Association, the laboratory criteria for APS require positive LA, moderate or high titre anticardiolipin antibody (without specification of quantity), and/or ab2GP1.[5]

Antiphospholipid syndrome is characterized by the presence of lupus anticoagulant which adhere to phospholipids on platelet and endothelial membranes leading to thrombus formation. In the pregnant uterus, the uterine vascular endothelium, the trophoblastic lining of intervillous space and fetoplacental endothelium are targeted, causing uteroplacental thrombosis, placental infarcts and fibrinoid necrosis of the vessel wall. Thus interfering with implantation of the embryo causing recurrent abortion, commonly at 6-12 weeks of gestation, which was seen in our patient.[6]

In women presenting with history of recurrent fetal loss and antiphospholipid antibodies, future live birth rate is significantly improved when a combination therapy of aspirin and heparin is prescribed.[7] Heparin, one of the treatment modality, potentiates the

antithrombin effects of antithrombin III and other antithrombin factors, increases levels of factor Xa inhibitor, inhibits platelet aggregation and binds to the antibodies rendering them inactive, thus improving the pregnancy outcome. Aspirin is also beneficial in this regard due to its antiplatelet effect.[8] This therapy is withheld at the time of delivery to reduce blood loss and restarted after delivery and should be continued for as long as 6 weeks postpartum.[9]

APS leads to thrombosis which may be spontaneous or may be precipitated by infection, surgical intervention, any change in anticoagulation therapy or introduction of oral contraceptive pills.[10] Sub-optimal anticoagulation or withdrawal of anticoagulant leads to hypercoagulability and its problems, as well as the risk of catastrophic antiphospholipid syndrome.[10] Treatment of this hypercoagulable state or thrombocytopenia, a common feature of antiphospholipid syndrome may cause life-threatening hemorrhage. Intraoperatively, physical measures such as adequate hydration, anti-embolic stockings, intermittent venous compression devices are advised. Adequate measures should be taken to keep the patient warm. Patients can develop recurrent thrombosis despite appropriate prophylaxis.[11]

Antiphospholipid antibody (APLA) syndrome poses dilemma for an anaesthetist. Literature shows some case series where successful administration of neuraxial blockade to patients of APLA syndrome had been carried out.[12] Ringrose et al[13] in his case series concluded that "In the absence of coagulation defects secondary to clotting factor antibodies or platelet abnormalities, the in vitro phenomenon of prolonged APTT alone should not, in theory, predispose to hemorrhage or be a contraindication to epidural anaesthesia in patients with APLAS." However, the results of these studies do not prove that neuraxial techniques are safe in this setting.[13]

In our patient, coagulation profile was within normal limits, hence regional anaesthesia was preferred. Postoperatively, optimal analgesia was provided for early mobilisation to prevent the risk of thrombosis.[14] These patients require close monitoring for both bleeding and thromboembolic complications postoperatively.

CONCLUSION

APS requires a multidisciplinary approach to prevent thrombotic and hemorrhagic complications. This is another condition where use of anticoagulants may lead to dilemma of their perioperative continuation. It is a double edged sword and requires the involvement of the anaesthetist to reduce the perioperative and postoperative complications.

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