

## Case Report

# A Case Report of Deep Venous Thrombosis/Anti Phospholipid Antibody Syndrome in Pregnancy

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## Keywords

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- Pulmonary embolism
- Thrombophilia
- APLA

**Abstract**

Pregnancy is a hyper coagulable state due to increased procoagulant factors. Almost 50% of them with thrombotic event have congenital or acquired thrombophilia. APLA-Antiphospholipid antibodies found in 2.2 to 4% of normal pregnancies. Presence of additional prothrombotic risk factors in APLA positive individuals influences thrombosis risk. In pregnancy, risk of deep venous thrombosis increases 5-10 times that of normal and in case of cesarean section, risk increases to 5-10 folds. We here by present a known case of primigravida with prior history of deep venous thrombosis, Antiphospholipid antibodies borderline with postpartum thrombosis after 8 weeks. The aim to highlight this case report is that patients with thrombosis always need proper follow up. Pregnancy is associated with complications due to its hypercoagulable state. The importance of antenatal, postpartum thrombosis and their follow up should be highlighted. Patient should be educated about the importance of compliance of the medication.

**ABBREVIATIONS**

DVT: Deep Venous Thrombosis; POVT: Post-Partum Ovarian Thrombosis; LMWH: Low Molecular Weight Heparin; FISH: Fluorescent *insitu* Hybridisation; TED: Thrombo Embolus Deterrent; APLA: Antiphospholipid Antibodies; ACA: Anticardiolipin Antibody; LA: Lupus Anticoagulant; PT: Prothrombin Time; APTT: Activated Partial Thromboplastin Time

**INTRODUCTION**

Deep venous thrombosis (DVT), is one of the common cases of mortality and morbidity in pregnancy-incidence being 1 per 1000 deliveries, of which 1-2 % are fatal [1]. The risk of thrombosis is highest during post partum period than pregnancy-almost accounting to five times [2]. During third trimester and especially first 2 weeks following delivery -risk of Venous thrombo embolism increases in women and is a leading cause of maternal death in most countries [3,4]. Post-partum ovarian thrombosis (POVT), is an uncommon complication in pregnancy with a prevalence of 0.15-0.18% [5]. Multiple studies conclude LMWH (Low molecular weight Heparin), to be safe and effective treatment or prophylactic for thrombosis in pregnancy [6].

**CASE REPORT**

An elderly primigravida, aged 36 years with spontaneous conception came to Outpatient department at 17 weeks gestational age for antenatal checkup. She is a known case of DVT

(left leg), since 2010. She complained of swelling and pain in the left lower limb for 3 days for which she was admitted and heparin infusion started along with Aspirin and antiplatelet medication. ACA and LA were not detected at that time. She stopped her anticoagulant medication for 2 months prior to the thrombotic episode in 2012 when she had an episode of subclavian left arterial thrombosis-thrombectomy was done. In view of failure of the procedure and the gangrene, she needed below elbow amputation. In December 2019, after confirmation of pregnancy she was started on Ecosprin 75 mg and Inj. Clexane 0.6 ml once a day in view of her prior DVT history. Her APLA results were borderline now. She started her pregnancy with weight of 71 kg. Her blood works were normal-Prothrombin/Activated partial thromboplastin time were normal.INR-1.4. Anomaly scan at 20 weeks gestation showed poorly ossified nasal bone -2.3 mm; fetal head showing bilateral choroid plexus cysts-right ventricle-5mm, left ventricle-7mm, Estimated foetal weight of 290 gm -small for that gestation. Repeat scan at 24 weeks showed hypoplastic poorly ossified nasal bone and regressed choroid plexus cysts. Amniocentesis was suggested by a fetal medicine specialist which showed FISH (Fluorescent *Insitu* Hybridisation), analysis of 13,18,21 aneuploidies and sex chromosomes to be normal. She stopped inj. Clexane on her own for 2 months. She was restarted Inj. Clexane and Ecosprin on advice of the vascular surgeon.

Growth scan at 34 weeks gestation revealed breech presentation with normal dopplers. She underwent Elective Lower segment cesarean section at 37 completed weeks of gestation and delivered a girl baby of 3.37kg with Apgar 8 at 1 min

and 9 at 5 min. We withheld Ecosprin and Inj. Clexane 24 hours prior to the procedure. PT/APTT/platelets were repeated prior to the procedure. Post op review was given to the vascular surgeon, Inj. Clexane was restarted 6 hours post LSCS. TED (thrombo embolus deterrent, stockings with sequential compressive devices were applied on the day of surgery. Early mobilization was done. She was discharged with Ecosprin, Inj. Clexane 0.4ml for 10 days. In view of Covid lockdown; she was unable to come for a review and she stopped the medication. Two months post partum she complained of pain in right thigh and lower leg radiating to back. 2D ECHO was normal with no pulmonary embolism or clot. Lower limb doppler revealed DVT involving right common femoral vein, great Saphenous vein, superficial femoral vein /popliteal vein distended with acute thrombus. There was no color flow and it was not compressible. She was admitted – started on Heparin infusion and other anticoagulants. Limb elevation was advised with grade II compression stockings. PT/INR repeated on third day with suggestion to continue anticoagulants till further orders. She has been discharged with strict orders for follow up and review.

## DISCUSSION

APLA syndrome is an autoimmune thrombophilic condition with antibodies against the phospholipid binding proteins. Prevalence of Anti cardiolipin antibodies and Lupus anticoagulant antibodies in normal healthy population range between 1 and 5.6% and between 1 and 3.6 % [7-9]. 1/3 rd of Systemic Lupus erythematosus patients are Anti cardiolipin antibody positive. In Systemic Lupus erythematosus -lupus prevalence is 15% and is consistently a powerful predictor of thrombosis. Presence of APLA antibodies associated with vaso occlusive events without any underlying disease process is defined as Primary APLA. Secondary APLA is the association with other autoimmune diseases. Presence of APLA antibodies increase the risk of miscarriage /foetal death [10-12]. Some of the other complications are pre eclampsia, pulmonary embolism, abruptio placenta, HELLP, eclampsia, recurrent miscarriage, preterm labour, oligohydramnios, Intra uterine growth restriction. Combination of acetyl salicylic acid and Low molecular weight Heparin was positive with success rate of 97%. Arterial thrombosis frequently manifests with ischaemia/infarction [13]. It is less common than venous thrombosis. Brain is the most common site; accounting for strokes and Transient Ischaemic attacks in 50% arterial occlusions [14].

Our patient was diagnosed with thrombosis in 2010. Proper follow up and review by the patient was not done. Even though she was not diagnosed to have APLA in 2010, she had a history of major thrombosis in left subclavian artery. Though thrombectomy was done, she needed below elbow amputation. She was discharged with anticoagulant medication and advised follow up. She didn't have proper follow up post partum. She stopped her anticoagulant medication and she came back with lower limb thrombosis. Early intervention was however done to save her limb. Her in compliance with medication has resulted in multiple episodes of thrombosis and complications.

## DIAGNOSIS

In normal pregnancy, levels of most procoagulant factors

(Factor 7,8,9,10,12 and fibrinogen), rise; protein C and protein S levels decrease. So diagnosis of Protein S deficiency requires confirmation at least 3 months post delivery [15]. Clinically it is diagnosed with complaints of severe leg pains/calf pain. Homans sign is positive (pain on dorsiflexion of foot). Ultrasound dopplers (lower limb), mostly helpful in the diagnosis in cases of DVT. In third trimester; flow velocity in lower limb is reduced by approximately 50% [16]. 50% of DVT in pregnancy is associated with Inherited /acquired thrombophilias [17]. In 13% of cases, pulmonary embolism is common [18]. In cases of pulmonary embolism-ventilation/perfusion scan or CT pulmonary angiography is more helpful. CT or MRI confirm diagnosis and quantify thrombosis extension and pulmonary embolism which occurs in 13% cases [19].

## MANAGEMENT

RCOG recommendation -GCS (Graduated compression stockings), (knee length with compression strength of 30-40 mm Hg), should be applied to help prevent Post thrombotic syndrome [20]. Caval filter is recommended in extensive DVT and whenever discontinuation of anticoagulation carries high risk of pulmonary embolism. Broad spectrum antibiotics to be started immediately along with Heparin infusion or LMWH .Once thrombolysis has begun -oral anticoagulants must be started and continued for 3-6 months. Heparin is the anticoagulant drug of choice in pregnancy. It doesn't cross placenta and is safe.

Low molecular weight Heparin is less likely to cause HIT (Heparin induced Thrombocytopenia.), **Clinical practice guidelines of ACCP (American College of Clinical Pharmacy)** suggest

- Women with BOH (bad obstetric history), with no prior History of thrombosis receive treatment with Heparin and Aspirin during pregnancy. Aspirin to be started with conception, some even start with attempted conception. Heparin (5000-10000 U), every 12 hours/LMWH (Enoxaparin), 40 mg Sc once a day to be started when a viable intrauterine pregnancy is documented until late in third trimester.
- Patients with History of thrombosis are to be fully anticoagulated with adjusted dose of UFH (Unfractionated Heparin), subcutaneous every 12 hours along with Enoxaparin 1mg/kg every 12 hours for atleast 6 months from initial presentation with VTE.
- Women on Warfarin should discontinue it before 6 weeks gestation, replacing it with Unfractionated heparin / LMWH. This should be discontinued 24 hours before scheduled admission. In case of prophylactic heparin -it can be discontinued 12 hours before.
- To reduce the risk of postpartum DVT, antithrombotic coverage is recommended in all women with APLA with or without previous thrombosis upto 4-6 weeks.
- New drugs for Anti phospholipid antibody syndrome in pregnant women are Dipyridamole and HCQ (Hydroxy chloroquinone). HCQ has an excellent safety profile with no adverse effects on foetus / neonate. It can be

considered as an adjuvant anti thrombotic in patients with SLE and positive APL antibodies.

- f. Vitamin K antagonists are teratogenic -they are to be avoided between 6-12 weeks of gestation.

**Postpartum ovarian thrombosis (POVT)**, is the result of bacterial infection, hypercoagulability and reduced blood flow in dilated ovarian veins. It usually presents with fever, abdominal pain, nausea, vomiting. It usually occurs in the right ovary due to dextrotorsion of enlarging uterus with compression of right ovarian vein. Complications are rare but can involve renal vein / Inferior vena cava leading to Pulmonary embolism [21].

## CONCLUSION

All women should be assessed for risk factors for DVT in early pregnancy, determine who needs thrombophilia screening, who need thromboprophylaxis. A lot of complications can be prevented if early ambulation is advised. Prophylactic anticoagulation has to be individualized depending on the risk factors, thrombophilias, history of prior pregnancies and their outcomes. The combined Acetyl salicylic acid and low molecular weight Heparin protocol produced positive results in preventing embryo fetal loss and maternal complications in a lot of studies. Proper follow up with compliance of medication is needed for lifetime to avoid major complications.

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