Rare Thromboembolism Following High Risk Pregnancy

POMONA VALLEY HOSPITAL MEDICAL CENTER
FAMILY MEDICINE RESIDENCY PROGRAM

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Introduction

Venous thromboembolism (VTE) is one of the many possible complications of pregnancy, especially in the postpartum period. Women who are in the postpartum period have a 5 fold higher increased risk of thromboembolism compared with non-pregnant women (1,2). DVTs can lead to pulmonary embolism which accounts for 9.3% of all maternal deaths in the US (1). Therefore, the importance of preventing, diagnosing and treating DVTs during pregnancy and the post-partum period is of crucial importance.

Case Presentation

HISTORY:
39-year-old G1P0 with BMI of 28 presented to L&D with contractions at 38.3 weeks. Labor failed due to a prolonged second stage of labor and failure to descend. C-section was complicated due to difficulty extracting the baby, and post surgery, the patient was treated prophylactically with antibiotics due to extensive manipulation and possible contamination. Post-op day 2, the patient was transfused 2 units of PRBCs due to symptomatic anemia from acute blood loss. On post-op day four she became febrile. A septic work-up and Zosyn were initiated. Lovenox was started for VTE prophylaxis due to concerns for decreased mobility. There was no identifiable source for fever, endometritis was suspected. Pelvic US ruled out hematoma or abscess. On post-op day 6, the patient remained afebrile for 24 hours and Zosyn was stopped based on infectious disease recommendations. The patient was discharged in stable condition. Two weeks after her C-section, the patient presented to clinic with 3-day history of a painful mass above the right clavicle. The mass presented suddenly and was associated with localized pain causing decreased range of motion and intermittent numbness and tingling of the right upper extremity. She denied fever, chills, night sweats, shortness of breath, bleeding from incision site or vaginal bleeding. The patient was sent to the ER for further evaluation.

PHYSICAL EXAM:
T (C): 36.8, BP: 118/81, HR: 114, RR: 18 SpO2: 100% RA
Exam significant for being unable to passively abduct RUE past 90 degrees due to pain. A 4-5cm mass palpated over the right supraclavicular area of the sternoclavicular joint. Right supraclavicular area was tender to touch. No increased warmth or erythema. No rashes, purpura or petechiae throughout.

Differential Diagnoses: Soft tissue infection (cellulitis, furuncle, abscess), VTE, cyst, lipoma, enlarged lymph node, soft tissue swelling (trauma, fracture)

Labs and Imaging

-WBC: 13.7, **Hb**: 11.5, **Hct**: 36.2, **Plt**: 589, **BUN/Cr**: 5/0.6, **PT**: 14.3, **INR**: 1.2.
-CXR: Patchy infiltrate in RLL and minimal basal atelectasis on left lung
-CT Angio of chest: Extensive DVT in the internal jugular vein, brachiocephalic vein, azygos vein and subclavian vein partially extending to SVC. Possible small pulmonary embolism in a few sub-segmental branches of pulmonary arteries. Soft tissue swelling in the right neck and superior mediastinum.
-Coagulopathy/Autoimmune panel: Beta-2 GPI IgG, IgM, IgA: Neg, Phos Ser IgA, IgG, IgM: Neg, Cardiolipin IgM, IgG: Neg, Cardiolipin IgA: mildly elevated, Lupus anticoag:1 of 2 detected, PTT-LA: High, DRVVT screen: Neg, Protein C Act/Ag: Neg, Protein S Act/Ag: Neg.

Final/Working Diagnosis

Provoked DVT of the internal jugular vein, brachiocephalic vein, azygos vein and subclavian vein, partially extending to SVC, likely triggered by right IV access.

Figure 1. VTE risk during pregnancy and post-partum (6)

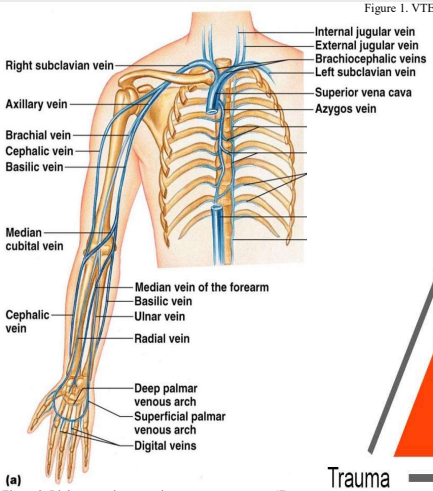

Figure 2. Right arm veins, superior vena cava anatomy (7)

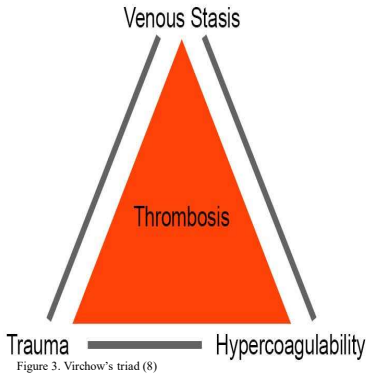

Figure 3. Virchow's triad (8)

Treatment and Outcome

Interventional radiology and vascular surgery were consulted who recommended conservative management (No tPA, no thrombectomy). The patient was started on Warfarin daily and bridged with Lovenox until reaching INR of 2-3 at which point Lovenox was discontinued. Per hematology recommendations, patient will continue anticoagulation with Warfarin for minimum of 6 months with INR goal of 2-3. Patient was discharged home with close follow up.

Discussion

The frequency of a thrombotic event is about 246 per 100,000 C-sections during the first 6 weeks postpartum (3). Many risk factors for VTE were present in our patient including hypercoagulability due to pregnancy, recent surgery, and immobility, resulting in a provoked DVT likely secondary to IV access. The most important individual risk factor for VTE in pregnancy is a personal history of thrombosis (1). Obesity further increases the risk for VTE and different societies currently recommend to start thromboprophylaxis with low molecular weight heparin 12 hours after cesarean delivery for patients with BMI of 40 or greater (4). There are currently no validated guidelines to start thromboprophylaxis in patients undergoing cesarean delivery with BMI below 40. ACOG recommends to place pneumatic compression devices on all patients not already receiving pharmacologic thromboprophylaxis before cesarean delivery and to remain in place until patient is ambulatory (1,4). Early ambulation is also recommended for all patients.

It is recommended that patients be tested for antiphospholipid syndrome (APS) when they present with unprovoked VTE, arterial thrombosis in young patients (<50yo), thrombosis at unusual sites, late pregnancy loss, or any thrombotic events or pregnancy morbidity in patients with other autoimmune disorders (5). Cardiolipin IgA is not routinely recommended due to lack of specificity but it is part of most laboratory APS panels. If positive APS panel, it is recommended to repeat panel after 12 weeks of initial labs given that most labs have been done after patient has started anticoagulation which can affect results, strong clinical correlation is highly recommended (5). The patient's APS evaluation was negative. She will continue to follow up with hematologist who recommended to continue anticoagulation for at least 6 months. Warfarin was our anticoagulant of choice given that it is safe during lactation and was easily covered by patient's insurance. Other direct oral anticoagulation (DOAC) agents lack human data to assess safety during lactation. No widely accepted risk scoring system has been validated to indicate thromboprophylaxis during pregnancy or post-partum period. Our patient expressed desire to have another pregnancy which will be considered high risk given advanced maternal age and history of post-partum VTE and will likely require thromboprophylaxis during her next pregnancy.

References

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