



Coagulation Assessment and Anesthetic Concerns after Plasmapheresis in a Parturient with Familial Hyperlipidemia Type III and Preeclampsia

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Introduction

Familial hyperlipidemia type III is an autosomal recessive genetic condition caused by a mutation in the APOE gene (1). Patients with this disease typically present with hyperlipidemia and hypertriglyceridemia, responsive to dietary modifications, statins, and fibrates. Noncompliant patients may require plasmapheresis in order to manage elevated triglyceride levels. Anesthetic management of a patient undergoing plasmapheresis treatment requires particular attention to the patient’s platelet count, function, and coagulation studies (2).

Case Report

A 31 year old female G4P0121 at 32 weeks gestation presented to labor and delivery with elevated blood pressures and epigastric pain. Her medical history was significant for familial hyperlipidemia type III and HELLP syndrome in a prior pregnancy. On admission, her lab work demonstrated significantly elevated triglyceride and lipase levels. Because the initial preeclampsia workup was negative, hypertriglyceridemia induced pancreatitis was established as the principal diagnosis. Patient underwent plasmapheresis as per cardiology recommendation, followed by transfusion of 2 units of fresh frozen plasma. Triglyceride and lipase levels improved, but she continued to have elevated blood pressures (153/86). The next day, the patient developed new onset thrombocytopenia with significant downtrending of platelets. At that time, preeclampsia workup was repeated, and her protein:creatinine ratio was elevated. In the setting of new onset of thrombocytopenia and recent plasmapheresis, a thromboelastogram (TEG) and coagulation panel were performed to assess the patient’s coagulation status. Both tests were unremarkable. The patient underwent a c-section under neuraxial anesthesia for a new diagnosis of preeclampsia with severe features. She had an uneventful procedure and recovery, and was discharged on post operative day 4 without complications.

Learning Points

- Parturients undergoing plasmapheresis may be at increased risk of depletion coagulopathy
- Fresh frozen plasma administration following plasmapheresis may replete coagulation factors and prevent subsequent bleeding
- Coagulation panel and TEG are useful tools, and should be performed to assess coagulation status prior to attempting neuraxial anesthesia
- A multidisciplinary approach is key to minimize maternal morbidity and prevent devastating complications associated with significant hemorrhage

References

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2. The Society for Obstetric Anesthesia and Perinatology Interdisciplinary Consensus Statement on Neuraxial Procedures in Obstetric Patients With Thrombocytopenia. Anesthesia & Analgesia. 2021; 132(6):1531-1544.