Adventures in Obstetric Anesthesia: Chemotherapy-induced Cardiomyopathy and the Hemodynamic Challenges of Pregnancy

Abstract Type: Case Report/Case Series
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Introduction: Because there has been an increase in the survival rates of childhood cancer, an increasing number of patients have pre-existing chemotherapy-induced cardiomyopathy prior to pregnancy. However, little is known about the effects of pregnancy induced cardiac changes on the overall heart function during and after pregnancy in these patients. Care of these patients requires carefully monitoring of the patient’s condition and close communication between the cardiology, obstetric, and anesthesia teams.

Case Report: We describe the case of a 27yo G2P0 with a history of AML and doxorubicin induced cardiomyopathy who presented at 35 weeks GA for a scheduled cesarean delivery.

Our patient was diagnosed with AML in early childhood and developed cardiomyopathy as a sequel of doxorubicin treatment. Her lowest ejection fraction (EF) was 17% but this had improved significantly after an Amplatz device closure of a ventral septal defect. Her pre-pregnancy baseline EF of 35-40% had remained stable for several years.

At 7 wks GA, it was noted on a resting echocardiogram her end-diastolic dimension had significantly increased. At that time, termination of her pregnancy was discussed due to concern for possible development of cardiogenic shock during pregnancy with the need for a cardiac assist device. The patient wished to proceed with her pregnancy and a stress test revealed excellent exercise capacity and her EF augmented to 60% with exercise. Her initial cardiac medications during pregnancy included hydralazine and metoprolol.

At 29 weeks her EF had decreased to 31% and the patient noted increased DOE and fatigue. Her cardiologist increased her metoprolol dose and started furosemide with potassium to decrease fluid overload. At 31 weeks GA she presented to the hospital with increasing SOB and tachycardia. She was admitted to the hospital for tailored therapy including IV furosemide and digoxin. She was discharged 2 weeks later with significant improvement of her symptoms.

The patient presented at 35 weeks GA for a scheduled cesarean delivery and tubal ligation. For monitoring and access, she received standard ASA monitors, an arterial line, and a central line. An epidural catheter was placed which was slowly dosed with 2% lidocaine with epinephrine. Norepinephrine was titrated to maintain systemic blood pressure. Fluids were administered cautiously to maintain a fluid deficit. Her intraoperative course was uneventful and a healthy baby boy was born (with APGAR scores of 8 and 9). Her initial postoperative course was uneventful but an Echo on POD #4 showed a decrease in her EF to 20% and patient feels her functional status has decreased. She is currently being carefully monitored at home.