Abstract # 68

Management of a Parturient Status Post Heart Transplant

Abstract Type: Case Report/Case Series
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Introduction: Current survival rates for cardiac transplantation have improved to greater than 90% at 1 year post procedure and greater than 80% at 5 years post procedure.(1) There is now a growing population of women who wish to have children status post cardiac transplant. Risks associated with pregnancy include infection, rejection and increased cardiovascular stress. Case Report: A 32 year old female, gravid 3 para 0-0-3-0 presents for her preoperative anesthetic evaluation with a history significant for orthotopic heart transplantation 5 years prior to her current pregnancy. A multidisciplinary approach including maternal fetal medicine, cardiology and anesthesia planned for an induction of labor with epidural analgesia for vaginal delivery. During labor she required an emergency cesarean section for nonreassuring fetal status. There were no complications intraoperatively or postoperatively including no evidence of rejection or congestive heart failure noted two weeks postpartum.

Discussion: The physiology and hemodynamic responses in a parturient, status post heart transplantation, pose unique challenges to the anesthesiologist. Heart transplant parturients lack both sympathetic (T1-T4) and parasympathetic (vagus) innervation. They do not have a reflex tachycardia with hypotension or hypovolemia and do not have an immediate increase in heart rate from sympathetic stimulation. Many of these patients will have pacemakers secondary to bradydysrhythmias. The transplanted heart does have a normal amount of adrenergic receptors. Direct acting medications such as epinephrine, isoproterenol, and dopamine work to increase heart rate and contractility whereas indirect acting agents such as ephedrine will be ineffective.

Post allograft coronary artery disease is progressive and present in 30% of survivors at 3 years post procedure and 50% at 5 years post procedure.(2) Given the increased intravascular volume, increased stroke work and increased oxygen consumption during pregnancy and labor we must be conscientious of “silent” myocardial ischemia due to denervation of the heart. When considering invasive monitoring and central access the anesthesiologist must be cognisant of the patients immunocompromised state.

References:
1) Chestnut D, Polley L, Tsen L, Wong C; Chestnut’s Obstetric Anesthesia: Principles and Practice Chapter 41