Multidisciplinary Care for the Parturient with Severe Rheumatic Heart Disease (RHD)

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Introduction: Our hospital has become a referral center for high risk obstetric patients with complex cardiac conditions. Clinical plans for these patients include input from cardiology, maternal-fetal medicine, obstetric anesthesia, and nursing. We outline our management of a woman who presented at 28 weeks in NYHA Class IV heart failure secondary to underlying RHD.

Case Report: The parturient was a 33 year old, 54 inch, 43.2 kg, G6P2032 admitted in NYHA class IV congestive heart failure (CHF) at 28 wk gestation. She was found to have RHD complicated by severe mitral stenosis (MS) and pulmonary hypertension. Initial management was directed at managing her CHF with diuretics, β-blockers, and inotropes. Thromboprophylaxis was initiated with enoxaparin. Although initial plans included emergency valvuloplasty, her condition improved with therapy, and she was able to continue the pregnancy for another 3 wk. A repeat TTE at this time showed severe left atrial enlargement, moderate to severe MS (mean gradient of 10-12 mm Hg; MVA of 0.9 - 1.1 cm2) with an LV EF of 55%. While she and the fetus had done well, she began to have short runs of SVT (6-8 beats) and it was decided to proceed to C-section within 24 hr. Betamethasone had been given following admission, and a further dose was administered. Enoxaparin was switched to iv heparin which was maintained until early the morning of surgery. Laboratory results obtained 2 hr after heparin was stopped showed a normal platelet count and coagulation panel. Monitoring included ASA standard monitors, a 20 G right radial arterial line, and a urinary catheter. Access included a PICC line in the right arm, along with an 18 G iv line in the left forearm. Tight control of all iv fluids (IVF) was planned, and no iv bolus was given. A sequential low dose combined spinal epidural was placed using a saline LOR technique, and the spinal was dosed with 4.5 mg hyperbaric bupivacaine, 20 mcg fentanyl, and 50 mcg epinephrine resulting in a T6 level bilaterally. Epidural administration of 6 ml 0.5% bupivacaine with 50 mcg fentanyl in divided doses raised the level to T4 bilaterally. An esmolol infusion was started to maintain the heart rate at 70-80 bpm. Phenylephrine (bolus and infusion) was used to support blood pressure within 15% of her baseline. A female infant was delivered (Apgars 7/9), and oxytocin (20 units) was added to the remainder of the Ringers Lactate. The uterus was repaired in situ, and the Fallopian tubes ligated with Filshie clips. Epidural extended-release morphine (6 mg) was given for post-operative pain management. Blood loss was estimated at 400ml, urine output at 150 ml, and total IVF at 720 ml. Recovery was uneventful, and the patient was transferred with full monitoring and oxygen (nasal cannula) to the Cardiac ICU.

Discussion: Full cooperation of all services, along with fastidious attention to details of physiology, pharmacology, and fluid therapy, allowed a seamless C-sect.