Management of a Nepalese Parturient with Severe Mitral Regurgitation

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A 26-year-old female, gravida 1, para 0 at 24 weeks presented with a chief complaint of palpitations and multiple syncopal episodes. She was a refugee from Nepal who arrived in the United States two months prior and did not speak English. Translation was obtained via the MARTI system. Past medical history was notable for a severe febrile illness in childhood, otherwise healthy. Due to her symptoms, a Holter monitor was placed and revealed paroxysmal complete atrioventricular block. The patient was admitted for further evaluation with close monitoring of mother and fetus. Workup found moderate to severe mitral regurgitation with preserved left ventricular function. She was advised to terminate her pregnancy, but declined to do so.

Her initial interaction with anesthesia providers was during placement of a dual-chamber pacemaker at 29 weeks. The patient was sedated and the fetus monitored closely by both the cardiology and obstetric teams. Ninety minutes into the case, the OB anesthesia team was called emergently for acute onset of chest pain, dyspnea and fetal bradycardia. The patient was treated with a dose of furosemide for suspected pulmonary edema and improved quickly. Urgent cesarean section was discussed with all teams but deferred given the rapid resolution of the patient's symptoms. She was monitored in the ICU, and discharged home 4 days later. At 38 weeks, the patient presented with ruptured membranes. An epidural was placed and a slowly titrated test dose of medication was given. Blood pressure monitoring revealed mild hypotension, treated with phenylepherine and ephedrine. Multiple episodes of prolonged fetal bradycardia developed, and an emergent cesarean section was called. The language barrier combined with the patient's distress from the urgency of the situation made it difficult to assess her epidural function. She underwent rapid sequence induction of general anesthesia, which she tolerated well. Four months post-partum, she had a mitral valve replacement, complicated post-operatively by acute hepatic and renal injury as well as mildly decreased left ventricular function. She continues to have mildly decreased left ventricular function, but otherwise is doing well.

Mitral regurgitation is typically well-tolerated during pregnancy due to the physiologic decrease in systemic vascular resistance (SVR). (1) Most patients can be managed medically, though rare parturients with severe lesions will benefit from surgical repair prior to conception. (2) The acute rise in SVR during labor from pain, Valsalva maneuver and aortocaval compression by the uterus can precipitate hemodynamic decompensation. Management centers on maintaining adequate heart rate and avoiding increased SVR. (3)

References:
1. NEJM 2003; 349:52-59
3. Chestnut DH; Obstetric Anesthesia, 3rd ed.; p. 719