Management of Peripartum Aortic Dissection

Abstract Type: Case Report/Case Series
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Introduction: Fifty percent of all aortic ruptures in women <40 years of age occur during pregnancy. Acute peripartum aortic dissection has a maternal mortality as high as 25%. We describe a case of spontaneous peripartum aortic dissection and its management in pregnancy.

Case: A 15 year old G1P0 at 21.3 weeks presented with back discomfort, attributed initially to pregnancy, two days prior to admission. One day prior to admission, she experienced increasing pain radiating to her upper back. She was found to be severely hypertensive with a mean arterial pressure (MAP) 120-130, requiring nitroglycerin, nitroprusside, esmolol, and nicardipine infusions with intermittent boluses of IV hydralazine and labetalol to maintain a MAP 60-65. Initial laboratory tests demonstrated no evidence of pre-eclampsia. Magnetic resonance angiography demonstrated a type B aortic dissection. Transesophageal echocardiogram demonstrated an intimal dissection flap from the left subclavian artery to the diaphragm. Surgical correction was not warranted. Fetal heart rate tracings were reassuring at that time. She subsequently developed respiratory failure and severe pulmonary edema and was intubated. The obstetric team felt that severe pre-eclampsia could not be ruled out and in light of her deteriorating condition, a dilation and evacuation was performed on hospital day #2. She was diuresed and extubated on hospital day #3, weaned off all antihypertensive infusions, and transitioned to oral antihypertensive medications. This patient's severe hypertension may have been caused by an atypical pre-eclampsia, by an undiagnosed collagen vascular disorder, or alternatively, the physiologic changes of pregnancy alone may have caused her dissection.

Conclusions: The physiologic changes of pregnancy can cause aortic dissection and rupture particularly in women at risk of developing this condition. Aggressive control of maternal blood pressure is vital to maternal and fetal well-being to prevent further dissection and end organ damage in the mother and to avoid fetal compromise. First line antihypertensive agents in the treatment of aortic dissection include beta-adrenergic antagonists and second line agents include nitroprusside and nicardipine. These agents are necessary and can be used safely in the management of aortic dissection in pregnancy. Medical decisions regarding the fetus should be made based on maternal clinical condition and gestational age.