Coronary Artery Dissection in Pregnancy

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Introduction: Acute myocardial infarction (AMI) is a rare occurrence in women of reproductive age. Studies have shown a three to four fold increase in AMI during pregnancy, with coronary artery dissection being the largest cause in the peripartum period. Here we present a case of AMI in the setting of pregnancy.

Case Presentation: Our patient was a previously healthy 31 year old G2P1 woman at 36 weeks gestation who had initially presented to a local emergency room with acute onset of chest pain. Her EKG revealed ST elevations signifying an acute anterolateral myocardial infarction. The patient was immediately transferred to us at University Hospitals Case Medical Center for emergent cardiac catheterization. The patient had stable vital signs and reassuring fetal heart tones prior to the cardiac catheterization. Cardiac catheterization revealed 100% occlusion of the left anterior descending coronary artery with dissection and progression to the circumflex and left main coronary arteries. The attempt at percutaneous coronary intervention was aborted and a plan was made to take the patient immediately to the operating room for emergency cesarean section and coronary artery bypass grafting (CABG). Within minutes, the patient became tachypneic, tachycardic, and hypotensive. The anesthesia team responded to the emergency call and performed a rapid sequence intubation using a glidescope. The patient was in cardiogenic shock with flash pulmonary edema and required suctioning of her ETT for pink frothy secretions and a dopamine infusion for blood pressure maintenance. A doppler was used to check fetal heart tones which revealed profound fetal bradycardia. An emergency cesarean section was performed on the cardiac catheterization table. The cesarean section was complicated by heavy bleeding secondary to uterine atony and the patient being heparinized during the cardiac catheterization. The patient was given IV pitocin and gentle uterine massage to alleviate the uterine atony. The neonate's APGARS were 8 and 9. After closure of the abdominal incision, an intra-aortic balloon pump was placed and the patient was emergently transferred to the operating room for a two vessel CABG. The patient's intra-operative course was uncomplicated and she was brought to the intensive care unit on vasoactive agents for blood pressure control which were subsequently weaned over four days. Her intra-operative and postoperative echocardiograms revealed severe left ventricular myocardial dysfunction with an ejection fraction of 10-15%. She was discharged to home on hospital day fourteen.

Discussion: An AMI is a rare complication during pregnancy. Spontaneous coronary artery dissection during pregnancy is thought to be related to increased progesterone and physiologic increases in blood volume and cardiac output. Early recognition and intervention is crucial as there are high fetal and maternal mortality rates when this condition is left untreated.