Acute myocardial infarction (AMI) is rare during pregnancy, occurring in roughly 1 in 10,000 live births. Multiple etiologies have been recognized with the most common cause of AMI found to be atherosclerosis. Other recognized etiologies include: coronary artery thrombosis, coronary artery spasm, coronary artery dissection, pheochromocytoma, and sepsis. Furthermore, it has been shown that pregnancy increases the risk of AMI 3- to 4-fold. It has been proposed that along with the more widely accepted risk factors in young women (hypertension, diabetes mellitus, dyslipidemia, cigarette smoking, and family history of coronary artery disease), parturients possess additional risk factors exclusive to their physiological state. Maternal age, maternal gravidity, stage of pregnancy, in addition to progesterone to their physiological state. Maternal age, maternal gravidity, stage of pregnancy, in addition to progesterone

Discussion

It has been reported that coronary dissection has been identified as the primary cause of AMI during the early gestation period. In a study by Roth et al., the left Anterior Descending artery (LAD) was found to be the culprit vessel in 4 of 9 cases which had only 1 vessel involvement. Spontaneous coronary artery dissection (SCAD) was thought to be mediated by progesterone-induced biochemical and structural changes to the vessel wall, while other hypotheses entertained associations with enhanced released proteases and a lack of prostacyclin synthesis.

Although studies have shown better outcomes with deliveries performed 2 to 3 weeks post-AMI to allow for sufficient healing post-infarction, this patient was noted to have irregular contractions coupled with mild episodes of hypertension which led to an urgent cesarean delivery. Hemodynamic changes, anxiety, pain and uterine contractions have been associated with a 3-fold increase in oxygen consumption during labor. Mindful of these facts and the patient’s clinical findings, a General Anesthetic was chosen as the obstetric anesthetic management of the parturient with SCAD.

Management of patients with SCAD mirrors that of patients with acute ST-segment elevation myocardial infarction. Medical management includes anticoagulation with heparin or low molecular weight heparin, aspirin, Clopidogrel (Plavix), beta-blockers, and nitrates which have all been deemed safe during pregnancy. Our patient was started on medical management at time of catherization but did not have sufficient time to complete ideal therapeutic time course of 48-72 hours as she was in need of urgent cesarean delivery. Similarly, the non-medical treatment options for SCAD parallel these modalities critical to manage STSTEMI which include percutaneous coronary intervention or CABG, with the decision made on the basis of the individual patient's clinical findings and history.

Conclusions

In conclusion, Spontaneous Coronary Artery Dissection (SCAD) should be of extremely high consideration in the parturient who presents with signs and symptoms consistent with unstable angina, particularly those in the third trimester. Patients who have experienced past partum SCAD should be extensively counseled as to the severity of the diagnosis and potential untoward outcomes associated with future pregnancies.

References


