

OB Case Discussion: Cardiac Arrest during Pregnancy

Objectives:

1. Review physiologic changes of pregnancy
2. Elucidate physiologic changes with neuraxial analgesia
3. Review maternal morbidity and mortality
4. Review mechanisms of local anesthetic toxicity
5. Discuss steps and the rationale behind ACLS in the pregnant patient

Case:

28 year old female suffered an intrauterine fetal demise at 32 weeks estimated gestational age. She is admitted to labor and delivery for induction of vaginal delivery. She has had misoprostol placed overnight and was started on pitocin IV augmentation for four hours. She has received morphine patient controlled analgesia (PCA) since the night before. As her contractions intensify, despite her morphine PCA she had breakthrough pain for which a lumbar epidural catheter was placed. After a negative routine test dose with 3 mL of 1.5% lidocaine with 1:200,000 epinephrine, a loading dose was administered with 10 mL of 0.18% ropivacaine with fentanyl 10 mcg/mL in divided doses. The anesthesia provider also began an epidural infusion of 0.125% ropivacaine with fentanyl 2 mcg/mL at 6 mL/h with a patient controlled epidural demand of 4 mL every 10 minutes. After recording blood pressure and heart rate for approximately 10 minutes, the anesthesia provider and RN left the patient to care for other patients. The RN returned to the room to check on the patient approximately 10 minutes later to find her unresponsive.

Questions:

1. Describe this patient's physiological changes.
 - a. Cardiovascular
 - b. Respiratory
 - c. GI
 - d. Hematologic and immune
 - e. As compared to both nonpregnant and not in labor.
2. What are the potential complications of an intrauterine fetal demise?
 - a. Why induce labor in this patient?
 - i. What are the potential complications of labor induction?
 - ii. What are the side effects of commonly used medications for labor induction and augmentation?
3. What are the options for analgesia in this patient?
 - a. What are the potential complications of systemic opioids?
 - i. Are there patients at increased risk of these complications?
 - b. Why start a lumbar epidural in this patient?
 - i. What are the potential complications of lumbar epidural analgesia in this patient?
 - ii. Are there unique considerations in this patient regarding lumbar epidural analgesia?
4. Describe the steps and rationale for each in resuscitation of the parturient.

- a. Describe the incidence of cardiac arrest after neuraxial anesthesia.
- b. List a differential diagnosis for this situation.
- c. Describe the pathophysiology of each differential diagnosis.
- d. Discuss . . .
 - i. The role of lipid emulsions in the treatment of local anesthetic toxicity.
 - ii. Amniotic fluid embolism
 - iii. Septic shock/SIRS
 - iv. Neuraxial cardiac arrest
 - v. Pulmonary embolism
 - vi. Respiratory arrest
 - vii. Other

To supplement your preparation for this activity, I have attached a group of selected articles.