

## **C-60 Management of an Unanticipated Difficult Airway on Labor and Delivery**

**Moderator(s)/Facilitator(s):** Benjamin Hyers, M.D., Sigal Israilov, M.D.

### **Objective**

After completion of this session, the participant will be able to:

- Evaluate two common airway changes related to pregnancy.

### **Case Stem Question**

A 32 year old female G1P0 presents to the labor and delivery unit at 39 weeks gestation in active labor. She had a straightforward pregnancy and is now contracting every 3-5 minutes. The patient may want an epidural for labor analgesia and requests to speak to the anesthesiologist on duty.

### **Guiding Questions for Discussion**

1. What other information would you like to obtain about this patient?

Case continued: The patient is morbidly obese with a BMI of 45, with no medical or surgical history and no known allergies. She last ate 4 hours ago. Her HR is 95 bpm, BP is 125/80 mm Hg, and oxygen saturation is 98% on room air. She has a pain score of 6/10. After hearing the risks and benefits of epidural analgesia, the patient declines because she is worried about the risks of epidural placement.

Her height is 5'2" (157 cm) and her weight is 246 lbs (112 kg). She is a Mallampati 2, and has normal mouth opening and thyromental distance >6.5 cm.

Over the past hour, the fetal heart tracing has been category 2 with minimal variability.

2. What are the risks with epidural placement? What are the relative and absolute contraindications to neuraxial anesthesia?

3. What does a category two tracing mean?

Case continued: You are called into the patient's labor and delivery room for a late deceleration. On arrival, you note the fetal heart rate (FHR) is 60 bpm. The mother's vitals are: HR 95 bpm, BP 105/75 mm Hg and her oxygen saturation is 100%. The obstetrician places her in left lateral uterine displacement and is requesting you administer intravenous (IV) nitroglycerin. You administer 150 mcg nitroglycerin IV along with 10 mg ephedrine IV and reassure the patient.

4. What is the clinical significance of early, variable, and late decelerations, and how are they treated?

Case continued: The obstetrician notes persistent fetal bradycardia with uterine

tachysystole. You note the fetal heart rate is still 60 bpm. The mother's vitals are: HR 105 bpm, BP 115/70 mm Hg and her oxygen saturation is 100%. Per the obstetrician's request, you administer a second dose of nitroglycerin and ephedrine IV. Additionally, the nurse administers subcutaneous terbutaline. However, the fetal bradycardia is sustained and the obstetrician calls a stat cesarean delivery.

5. What is your anesthetic plan for this patient's cesarean delivery?

6. Which equipment would you like to have available?

7. What are the normal respiratory and gastric physiological changes that occur during pregnancy?

Case continued: The patient is rushed to the operating room, and the fetal heart rate remains 60 bpm. You perform an abbreviated consent for general anesthesia, and the obstetrician preps and drapes the patient.

8. How would you induce this patient?

Case continued: After adequate preoxygenation in the ramp position, you perform rapid sequence induction with propofol, succinylcholine and cricoid pressure. However, the view on direct laryngoscopy is grade 3 and the patient desaturates to 60% during the first intubation attempt. You perform bag-mask ventilation, call for help and request a videoscope. A different anesthesiologist performs the second intubation attempt, this time with a video laryngoscope and cricoid pressure. The second attempt is also unsuccessful. While bag-mask ventilation was initially adequate, it is becoming increasingly difficult.

9. Why is airway management potentially challenging in an obstetric patient?

10. What are the components of the difficult airway algorithm for obstetric patients?

11. What are the next steps in managing this patient?

Case continued: You place a laryngeal mask airway resulting in adequate ventilation. The obstetrician is eager to start the cesarean section. You explain the situation to them, and the two of you discuss whether to proceed with the case without a protected airway or wake the patient up. The obstetrician checks the fetal heart rate again, and it has now improved to 105 bpm. The mother's vitals are HR 120 bpm, BP 110/86 mm Hg, respiratory rate 20/min and oxygen saturation is 98%. The decision is made to wake the patient up. Once awake, the situation is explained to her, and she agrees to receive neuraxial anesthesia in the operating room. You place a combined spinal-epidural (CSE) uneventfully and the cesarean delivery commences. Minutes later, the neonate is born. The NICU team successfully resuscitates him, and there are no complications during the

cesarean delivery.

12. What would have been your intraoperative plan had the neonate's FHR remained low?

13. What are some postoperative considerations for this patient? How should her pain be managed?

### **References**

Kheterpal S, Martin L, Shanks AM, Tremper KK. Prediction and outcomes of impossible mask ventilation: a review of 50,000 anesthetics. *Anesthesiology*. 2009;110:891-897

Russell, R. (2020). 'The Difficult Airway: Risk, Assessment, Prophylaxis, and Management', in Chestnut, D.H. (ed.) *Chestnut's Obstetric Anesthesia Principles and Practice*, Sixth Edition. Philadelphia: Elsevier, pp. 692-723

Balki M, Cooke ME, Dunington S, Salman A, Goldszmidt E. Unanticipated Difficult Airway in Obstetric Patients: Development of a New Algorithm for Formative Assessment in High-fidelity Simulation. *Anesthesiology*. 2012;117:883–97

Mushambi MC, Kinsella SM, Popat M, et al. Obstetric Anaesthetists' Association and Difficult Airway Society guidelines for the management of difficult and failed tracheal intubation in obstetrics. *Anaesthesia*. 2015;70:1286-1306