Difficult Airway Stat Cesarian Section for Patient with Preeclampsia with Severe Features and Footling Breech Presentation

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Introduction

Anesthesia related complications are a significant cause of maternal morbidity and are the sixth leading cause of pregnancy mortality in the United States. Of these complications, airway management problems remain the leading cause of mortality (1). Despite this, there is no clear consensus on managing difficult airways during delivery and obstetric emergencies. Obstetric airways are often unexpectedly difficult which can lead to adverse outcomes and poor patient care during delivery. In fact, failed intubations are 10 times more common in obstetric patients when compared to the general population (2). Compounding this problem is the increasing use of regional anesthesia during delivery as opposed to endotracheal intubation (3). As a result, residents are receiving less experience in instrumenting obstetric airways. Consequently, knowledge of obstetric anatomy and physiology as well as use of clinically beneficial algorithms is critical in managing difficult airways in obstetric patients. We present a case of an emergent obstetric patient with an unexpectedly difficult airway that was successfully managed according to a practical airway management algorithm (Figure 1).

Case Presentation

Preoperative Course
- A 39 yo G3P2002 at unknown gestational age with past medical history of chronic hypertension, tobacco use and class III obesity (140kg BMI 50) presented to triage in labor with grossly ruptured membranes with thick meconium and a fetus noted to be in footling breech presentation with fetal leg in the vagina in early May 2021.
- The patient was unaware that she was pregnant and had not received any prenatal care.

Intraoperative Course
- She was taken emergently to the OR for cesarean section. First BP measurement showed 203/102 and there was no time to place regional anesthesia.
- The patient was induced with 170 mg of propofol and 140mg succinylcholine. First attempt with McGrath videoscope was unsuccessful.
- We subsequently tried bag mask ventilation which was also unsuccessful. Following this, an I-gel 4 was placed which allowed for adequate ventilation.
- Once the baby was delivered a second attempt was made at endotracheal intubation in order to secure a more reliable airway for ventilation.
- The patient was then started on magnesium for preeclampsia with severe features.

Post Operative Course
- She was extubated safely and transported to PACU. Further blood pressure control with Procardia was started in PACU.
- No significant complications from the anesthesia were noted and the patient was discharged from the hospital three days later.

Figure 1.

Figure 2. (World Health Organization 2007)

Discussion

This case is clinically significant for a multitude of reasons. This patient had many risk factors for airway complications including morbid obesity, maternal age >35, and preeclampsia (4,5). The successful management of a difficult airway in this patient's scenario provides further evidence for the utilization of an algorithm based methodology when dealing with obstetric airways. As seen in our case, while initial intubation and bag mask ventilation was not possible following induction, quick transition to insertion of an LMA as per the algorithm (Figure 1) protocol led to adequate ventilation and stabilization of the patient for the emergent cesarian section. The positive outcome in this case is attributed to fast and accurate decision making and suggests that knowledge of obstetric anatomy, physiology, and consensus algorithms for managing difficult airways is imperative for reducing anesthesia related morbidity associated with obstetric patients.

Conclusion

Our patient had many risk factors for anesthetic complications but was efficiently managed using a defined algorithm leading to a successful outcome. Understanding and implementing an obstetric difficult airway algorithm is critical for reducing anesthesia related complications in clinically complicated patients during obstetric emergencies such as stat cesarean deliveries.

References

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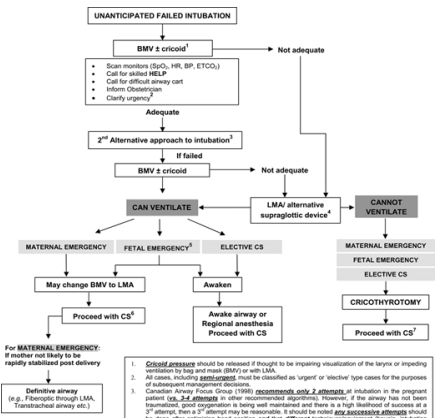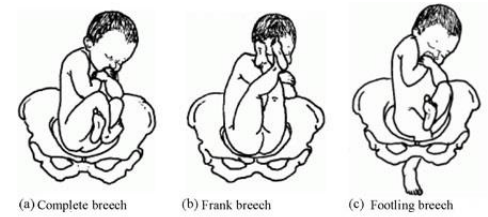6. World Health Organisation, 2007. Managing complications in pregnancy and childbirth: A guide for midwives and doctors. 2 ed. China: World Health Organisation Press.