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Airway Management and Cardiopulmonary Arrest in Obstetric Patients

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Airway management in obstetric patients carries significant risk of complications.

Introduction

The potential need to manipulate the airway is perhaps the leading cause of concern in pregnant patients (Chadwick et al. 1991). Anatomic and physiologic changes, including upper airway mucosal edema, aspiration, preeclampsia, weight gain and morbid obesity, breast enlargement and changes in the respiratory, cardiovascular and gastrointestinal systems, place parturient patients at greater risk for airway-related complications. Failed tracheal intubation is well documented in the obstetric population, with an incidence of 1 in 280–300 in parturient patients, versus 1 in 2,330 in general patients (Munnur and Suresh 2004).

Morbidity and Mortality

According to Chadwick et al., complications leading to death in obstetric patients because of airway management problems include aspiration of gastric contents, problems with intubation, esophageal intubation, inadequate ventilation and respiratory failure (Chadwick et al. 1991). Three mechanisms accounted for nearly threequarters of the cases that were judged to be substandard in claims for adverse respiratory events: inadequate ventilation (38%), esophageal intubations (17%) and difficult intubation (18%) (Caplan et al. 1990). Proper and timely communication between obstetricians and anaesthesiologists can contribute significantly to reducing maternal morbidity and mortality rates.

Predicting a Difficult Airway

Basic knowledge of the practice guidelines and the American Society of Anesthesiologists Difficult Airway Algorithm can minimise airway-related maternal catastrophes. Failure to assess the airway was found to be responsible for death in 10% of the cases in one of the Confidential Enquiries into Preoperative Deaths in 1997 (Her Majesty's Stationery Office 2001). Munnur and Suresh showed that a simple physical examination of the airway may be used to identify indicators of a difficult intubation, such as long upper incisors or a short, thick neck (Munnur and Suresh 2004). Obstetricians' knowledge of difficult airway predictors facilitates the management of difficult airway and reduces the likelihood of adverse outcomes.

The Role of Obstetricians and Gynaecologists

The American College of Obstetricians and Gynecologists (ACOG) recommends that the obstetric watch for factors that place parturient patients at risk for complications from emergency general or regional anaesthesia (ACOG 1992). The obstetric team could be of tremendous help in an emergency situation by alerting anaesthesiologists to airway-related problems. In their assessment of obstetricians' skill in identifying parturient patients with difficult airways, Gaiser et al. found that the attending obstetricians could request prophylactic implementation of early epidural analgesia in patients who were judged to be difficult to intubate (Gaiser et al. 1999).

Cardiopulmonary Arrest

Cardiopulmonary arrest in a pregnant patient could be a crisis for everyone involved, and early involvement of an obstetrician is crucial. New resuscitation guidelines will probably require all healthcare workers (including obstetricians and midwives) to attend appropriate training every year (Clarke and Butt 2005). Obstetricians, anaesthesiologists, neonatologists and nursing staff must work efficiently, using a coordinated team approach to resuscitate these patients. Failed intubation in obstetric patients should seriously be addressed, particularly in light of the recent

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report of the Confidential Enquiries into Maternal Death in the United Kingdom. Multidisciplinary training and fire drills may help medical staff respond to these situations (Scrutton 2005).

Cannot Ventilate, Cannot Intubate Scenario (CVCI)

Gas exchange is a primary concern, and it should be restored as quickly as possible when mask ventilation is not possible and the patient cannot be intubated. In 2003, the practice guidelines for the management of difficult airways were updated. Under these new guidelines, laryngeal mask airway (LMA) is the tool of choice in a CVCI situation. When placing the LMA, cricoid pressure needs to be released transiently. If the LMA fails, other devices, such as Combitube, transtracheal jet ventilation or surgical airway, are the procedure of choice. Since the LMA was introduced, it has gained tremendous popularity as an airway device. Because the LMA is readily available, widely known and highly successful among new and experienced users alike, it should be used as a routine airway technique (American Society of Anesthesiologists 2003).

Summary

Difficult intubation is a common occurrence in obstetric patients. It is imperative that appropriate equipment is immediately at hand in patient areas. Skilled obstetricians' assistance is also a necessity. Therefore, obstetricians should strive to learn the airway management skills that may, one day, save their patients' lives.

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