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Emergency Airway Management In Eclamptic Patient With Facial Trauma

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Introduction

Airway management is of prime importance for an anaesthesiologist. Inappropriate airway management may cause adverse outcomes, more so in an unanticipated difficult airway which can pose a threat to the life of the patient. Obstetric general anaesthesia is associated with a number of adverse effects and airway management can be challenging in such patients due to more vascular and oedematous upper airway mucosa, leading to increased mallampati score as pregnancy progresses. Swelling can be exacerbated by conditions like pre eclampsia, eclampsia, oxytocin infusion, intravenous fluids etc. Failed intubation leading to inadequate ventilation is an important cause of maternal and foetal mortality and morbidity. Decreased functional residual capacity and increased oxygen requirements decreases the apnoea time in such patients. Progesterone reduces lower oesophageal sphincter tone, resulting in gastric reflux and enlarged breasts may make the insertion of the laryngoscope difficult.1 The majority of obstetric difficult and failed intubations occur during emergencies and out of hours. Concerns for rapid delivery of the fetus often leads to mental pressure, which in turn may result in poor planning, preparation, communication and performance of the anaesthesiologist and staff. DAS guidelines have been formulated for management of unanticipated difficult airway in obstetrics where use of laryngeal mask airway (preferably second generation) has been advised as a rescue device in a 'can't ventilate, can't intubate' scenario.2 With the use of first generation LMA, there are chances of gastric insufflation and hence increased chances of aspiration, thus mandating the endotracheal intubation. Classic LMA can be used as a conduit for fibreoptic guided as well as blind endotracheal intubation.3 Eclampsia is one of the most common emergencies encountered by anesthesiologists which involve a safe journey of two lives. We hereby present a case of difficult airway encountered in an obstetric patient with eclampsia where C-LMA was used as a conduit for endotracheal intubation with the help of a suction catheter.

Keyword: Eclampsia, Facial trauma, Airway.

Case Report

A 26 years old primigravida with 39 weeks of gestation presented with diagnosis of eclampsia and foetal distress

due to thick meconium stained liquor. Patient had history of multiple episodes of seizures followed by fall leading to swelling over the forehead and lips. Considering the emergency of the situation patient was directly shifted to OT table. Patient was in a disoriented and irritable state and proper history could not be elicited. Patient had been given 4 gm of IV MgSO4 as loading dose. On examination, the patient had heart rate of 120 beats/min, blood pressure of 160/100 and SpO2 of 96%. On auscultation bilateral crepitations were present in the chest. On cardiac auscultation normal S1 S2 heard. Routine investigations (Hb 8.5 , bleeding and clotting time) were within normal limits. All routine monitors were attached (HR, SpO2, NIBP,ECG). Intravenous (IV) line secured in left hand with 18 G cannula and Ringer's Lactate was connected. Maintenance dose of MgSO4 continued at 1 gm/hour. Patient preoxygenated with 100% O2 for 3 minutes. Induction was done with 100 mg of thiopentone. Cricoid pressure was applied by the anaesthesiologist. On check ventilation, the patient had difficult ventilation. Injection succinylcholine 50 mg was given and rapid sequence induction done while maintaining the cricoids pressure. Endotracheal intubation was tried using cuffed ETT of internal ddiameter 6.5 mm under direct laryngoscopy. The patient had oedema of tongue and laryngopharyngeal tissue making the laryngoscopy difficult. On laryngoscopy patient had Cormack lehane grade 4 of glottic view. Second attempt was taken using a stylet and third attempt was taken by the senior anaesthesiologist. Patient's saturation fell down to 88%. After 3 failed attempts it was decided to ventilate the patient using supraglottic device (SGAD). Classic lma of size 3 was inserted due to non availability of second generation SGAD in the emergency ot. Ventilator circuit was attached after cuff inflation. Placement was confirmed by adequate chest rise and appearance of ETCO2 graph. Adequate tidal volume achieved and device was fixed. Anaesthesia maintained with 50% Nitrous oxide, 50% O2, 1% sevoflurane. 20 mg Atracurium was given. Considering foetal distress, obstetrician was allowed to proceed with the emergency lscs. Patient maintained HR of 110-130 beats per minute, BP 140/90 to 160/100 and an SpO2 of 100 % intraoperatively. Surgery was uneventful and a healthy male baby was delivered. By the end of surgery patient's stomach was distended due to gastric insufflations of air from SGAD. Due to lack of gastric port in C- LMA, it was not possible to drain the gastric contents. As it was decided to electively ventilate the patient, it was necessary to secure the airway with endotracheal tube to prevent gastric aspiration. An ETT of I.D. 6 could not be passed through CLMA for blind intubation through C- LMA. Universal 15 mm connector of ETT of I.D. 8 mm fitted well with suction catheter of size 14 Fr with funnel shape proximal end. This suction catheter was passed through the CLMA easily and distal port with 15 mm connector was connected to the ventilator circuit (Fig1, 2). ETCO2 graph appeared and chest rise was seen on ventilation through the suction catheter. Tidal volume up to 150 ml was delivered with airway pressures up to 35 Cm of H2O. Then ventilator circuit was disconnected,proximal end of the suction catheter cut, cuff of C-LMA deflated and C-LMA removed over the suction catheter while keeping the suction catheter in trachea. A cuffed ETT of I.D. 6.5 mm was rail roaded over the suction catheter. Cuff of ETT inflated, suction catheter removed and ETT was connected to ventilatory circuit(Fig3). ETCO2 graph appeared with bilateral equal air entry. Adequate tidal volume was achieved. Thus the airway was secured and ryles tube inserted.

Legends

Figure 1

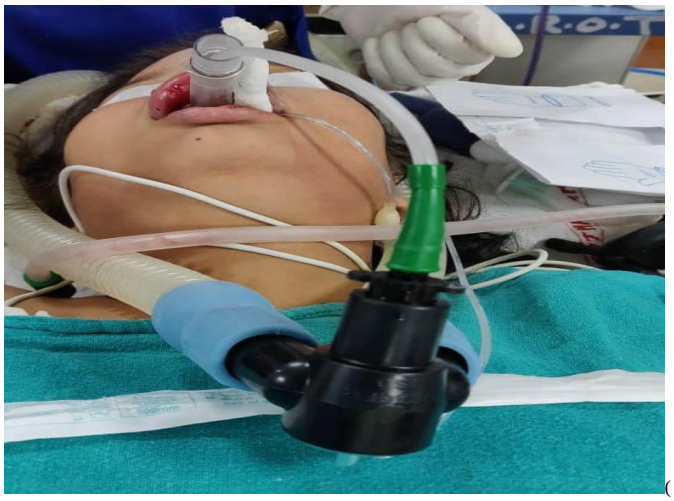

Figure 2

Figure 3

Discussion

A difficult airway is a clinical situation in which a conventionally trained anesthesiologist has difficulty with facemask ventilation, tracheal intubation or both. Common causes for anticipated difficult airway may include syndromes such as Down's, Pierre-Robin, Treacher-Collins, Klippel-Feil, tumors, trauma, and burns, while unanticipated difficult airway may include infections, abscess, Ludwig's angina, rheumatoid arthritis, obesity and acromegaly etc. Many devices and techniques are now available to circumvent the challenges encountered with difficult airway using conventional laryngoscopy e.g. endotracheal tube guides, different types and sizes of laryngoscope blades, supraglottic airway devices, lighted stylets, rigid video laryngoscopes, and indirect fiberoptic laryngoscope. Supraglottic airway devices such as LMA have been a revolution and a first go option in case of an unanticipated difficult airway scenario. The LMA is an important option within the DAS difficult airway algorithm, and has been proved to be a highly useful aid to fiberoptic intubation with ETT. The use of fiberoptic is limited by its limited availability at certain places. In our case the difficult airway was encountered due to swollen tongue, oedematous laryngopharyngeal tissue. The only option we had was to secure the airway with the supraglottic device such as LMA. Airway exchange catheter (AEC), FrovaR Intubating Introducer, AintreeR Intubation Catheter, Eschmann Introducer can be used as a guide for indirect blind intubation through classic LMA. In case of non availability of these guides, LMA can be used as a conduit for direct blind intubation.[4]

In our case, we used a suction catheter as a guide for indirect blind intubation through classic LMA as blind intuation through classic LMA was unsuccessful and other guides were unavailable. The supraglottic airway gadgets offer a rescue option in various difficult airway scenarios. This case shows the importance of good communication and decision making in a difficult case scenario such as ours where resources were limited.

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