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Case Report

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Airway Management in a Case of Facial Injury by Dog Bite in a 4 Years Old Child

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ABSTRACT

Facial injuries due to dog bite causes severe facial disfigurement which may require meticulous surgical reconstruction. There is distorted facial anatomy and this poses a challenge for mask ventilation. Moreover, there is shared airway with the surgeon. The patient was posted for surgical repair under anaesthesia. Anatomical distortion including lacerated wound of face, destruction of lips, nose and jaw making mask ventilation difficult.

Key Words: *Difficult mask ventilation, Airway management, Direct laryngoscopy*

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INTRODUCTION:

Dog bite injury over face causes extensive soft tissue and bony injuries and lacerations over eyes, nose and lips. Majority of these injuries needs meticulous surgical management. Airway management in these cases poses a challenge to the anesthesiologists because of difficult mask ventilation, difficult airway due to distorted anatomy, tissue oedema and facial bone fracture.

CASE

4-year-old 12kg female child presented to emergency surgery OT with history of facial injuries following dog bite. She had multiple lacerated wounds over nose, upper lip, cheek and upper jaw. Mouth opening and nostril patency could not be assessed as the child was un-cooperative. Patient received antibiotics, Tetanus toxoid and anti-rabies prophylaxis. Blood investigation done and was within normal limits. Chest X-ray done and was within normal limits. Pre anaesthetic evaluation done and patient accepted for emergency anaesthesia under ASA grade III.

MANAGEMENT

Anaesthesia procedures and its risks were explained to child's parents. Informed consent obtained. Routine monitors like pulseoxymeter, ECG, NIBP and capnograph were attached. Difficult airway trolley kept ready pre-medications given with Inj. Glycopyrrolate 40mcg i.v, Inj. Midaz 0.2mg i.v, Inj. Fentanyl 20 mcg i.v, Inj. Emest 1 mg i.v. After giving premedication,airway rent sealed with cotton pad and patient was induced with sevoflurane mask and Inj. Propofol 20mg i.v, so that her spontaneous respiration would be maintained. Perioperative oxygenation was done. Direct laryngoscopy done. Endotracheal tube 4.5 mm cuffed inserted between vocal cords under vision. Intubation confirmed with auscultation and capnography. Throat packing done. Patient maintained on oxygen, nitrous oxide and sevoflurane. Inj. Dexamethasone 1.2 mg i.v was given intraoperatively. Intraoperative period uneventful. Surgical repair done. Patient was reversed with Inj. Neostigmine 0.6 mg i.v and Inj. Glycopyrrolate 46 mcg i.v.For this child further surgical dressings in different settings was done under intravenous sedation using Inj. Ketamine 10 mg i.v.

DISCUSSION

Dog bite injuries are usually on head and neck region involving ear, nose, cheek and scalp. Difficult mask ventilation can occur before attempting intubation or after intubation failure. Difficult mask ventilation can be due to inadequate mask seal or excessive gas leak. Signs of inadequate mask ventilation include absent or inadequate chest movement, signs of severe obstruction on auscultation, cyanosis, gastric air dilation [1,2,3,4]. In patients with maxillofacial trauma airway can be secured by nasal intubation with direct visualization of cords, oral intubation, fiberoptic bronchoscopic intubation or surgical airway[5,6]. Unanticipated incidence of difficult mask ventilation and intubation can be dealt with LMA. In our case, to preserve spontaneous ventilation muscle relaxants were avoided [2,6].

Given the inability of children to cooperate, the potential to use awake airway techniques is limited. Multiple alternative strategies have been used to create a humane, but safe environment to secure the airway including the use of a sedated or anesthetized fibreopticintubation[4,7]. A light plane of anaesthesia, turbulent air flow, airway secretions, aspiration, stimulation, instrumentation of the airway, a recent respiratory tract infection and/or passive smoke exposure can increase the risk of laryngospasm [2,6,3]. The incidence of laryngospasm is higher in younger than in older children and adults, with the highest incidence among preschool aged children. Even despite careful airway assessment some patients with difficult airway remain undetected[1,4,7].

CONCLUSION

Difficult mask ventilation in facial injuries can be due to soft tissue lacerations, edemain those circumstances preserving spontaneous respiration and doing endotracheal intubation by DL scopy can be effective alternative.

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