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DIFFICULT AIRWAY MANAGEMENT IN A CHILD WITH POST BURN CIRCUMORAL CONTRACTURE & DISTORTED NASAL ANATOMY

Dr. Mohsina Yasmeen Assistant Professor.

Dr. Divyashree R Postgraduate MD Anaesthesia.

ABSTRACT Burn injury in children continues to be a major epidemiological problem. Nearly a fourth of all burn injuries occur in children under age of 16 of whom the majority are under the age of 5. Patient with chronic contracture of neck & face following burns are among the most common patients visiting plastic surgery clinics for reconstruction procedures. Loss of airway control in children, if not resolved quickly will lead to devastating consequences. Securing the airway is a crucial aspect during reconstructive surgeries of patients with extensive post burn circumoral contractures & distorted nasal anatomy. Many airway techniques have been effectively used in burn patients, but the role of Supraglottic airway device stood crucial in the management of difficult airway in post burn contracture especially in children due to lesser failure rates. Here we present a case of successful management of difficult airway in 3year old child with postburn circumoral contractures & distorted nasal anatomy using supraglottic airway device.

KEYWORDS : Pediatric postburn contracture, Supraglottic airway device, I-gel

INTRODUCTION:

● Pediatric burn injuries are most challenging to handle especially when they involve tha face as the airway compromise invariably due to edema & inflammation of the soft tissues of pharynx & larynx.

● Healing of the facial burns causes development of contractures & deformities, such patients when presented for surgery under general anaesthesia poses unique challenges to the Anesthesiologists.

● Here is a similar case of 3year old child with postburn contractures & deformities of the face, neck, upper and lower extremities posted for the correction of contractures of the hands in whom airway was managed.

CASE REPORT:

● A 3year old male child weighing 11kg presented with post burn contractures of the bilateral hand posted for contracture release & k-wiring, gives history of accidental burns & sustained burns over face, neck & extremities one & half year ago.

● No other Comorbidities

● On General examination, child was active & playful. Vitals within noraml limits.

● On airway examination, the child had restricted mouth opening to 2 fingers (of the child) due to circumoral contracture, also had fibrosed nostril, neck movement of Onah's type 1 with mallampati grade 3.

● Systemic examination & routine investigations are normal

● In the OR, Standard ASA monitors were connected, baseline values noted, difficult airway cart was kept ready including flexible fibroptic bronchoscope & tracheostomy.

● Preoxygenated with O_2@ 8L/min for 3mins along with Sevoflurane, mask seal couldn't be achieved due to distorted anatomy & was slipping due to smoothness of scarred skin. Tight Seal achieved by placing gauze pads along the edges of the mask.

● Premedicated the child with inj. Glycopyrrolate 0.04mg, inj. Midazolam 0.5mg, inj. Fentanyl 20mcg iv

● Inhalational induction through Sevoflurane was done, child was kept spontaneous, no relaxant was administered.

● Tried securing airway with I-gel of size 1, we couldn't sweep down the I-gel over palate, oxygenated again, tried again with I-gel laryngeal mask opening facing palate then tried to rotate 180^0 but failed hence contracture at the angle of mouth surgically released then I-gel placed successfully.

● Inj. Propofol 20mg iv & inj. Atracurium 5mg was given child ventilated with IPPV & maintained on Sevoflurane 0.2-2%, O_2:N_2O = 50:50 @ 2L/min.

● Intraoperative period was uneventful. Child extubated after adequate respiratory efforts & shifted to recovery room in lateral position. Postoperative period was uneventful.

CONCLUSION:

● Pediatric airway management is all more challenging as compared to that of the adults because of many anatomical & physiological variables, due to relatively large size of the head, short neck, the large size of the tongue, anterior location of the larynx, small oral aperture, short & stubby epiglottis are few of the anatomical landmarks that causes a difficult airway management in normal pediatric population.

● Above all, if the facial anatomy is disfigured such as in facial fractures, dislocations, injuries, burns etc. as in this case, the degree of difficulty in securing the airway increases manifold for the attending anesthesiologist.

● In the present case, the airway was decided to be secured by supraglottic airway device because restricted mouth opening wouldn't allow direct laryngoscopy & ETT placement & also SGA guides in ETT placement, here nasal intubation wasn't performed due to distorted nasal anatomy & awake fibroptic intubation couldn't be performed since it's a child. Here to finally conclude that adequacy of mouth opening alone couldn't decide the ease of SGA placement.

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