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CASE REPORT

ENDOTRACHEAL INTUBATION IN A CHILD HAVING OCCIPITAL ENCEPHALOCELE WITH BILATERAL CLEFT LIP AND CLEFT PALATE: A CASE REPORT

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ABSTRACT: Basically endotracheal intubation in pediatric age group especially in infants is difficult due to large head, relatively large tongue, anteriorly placed larynx, longer and stiffer epiglottis which protrudes at 45^0 angle and short neck. When such pediatric patient comes with craniofacial congenital malformations, the management of airway becomes more challenging. Here we report a case of occipital encephalocele associated with bilateral cleft lip and cleft palate coming for V P shunt procedure.

KEYWORDS: Endotracheal intubation, occipital encephalocele, cleft lip, cleft palate

INTRODUCTION: Difficult or failed endotracheal intubation is feared by all anesthesiologists.[1] Therefore every anesthesiologist attempts to assess the airway by various methods like Mallampati score, LEMON score and Cormack-Lehane classification etc. for ease of intubation before induction.[2] But such assessment is difficult to perform in pediatric patients. Basically, tracheal intubation in pediatric age group is difficult because of their peculiar airway anatomy.[3] When such patient comes with craniofacial malformations, management of the airway becomes much more complicated. Malformation like occipital encephalocele can cause difficulty in positioning and stabilization of head. Whereas associated anatomical abnormalities of face like cleft lip and palate makes laryngoscopy and subsequent visualization of glottic opening difficult. Here we are reporting a case of occipital encephalocele associated with bilateral cleft lip and cleft palate coming for V P shunt procedure.

CASE REPORT: A 15 days old child weighing 2.7 kgs was posted for V P shunt procedure to relieve intracranial tension produced by encephalocele associated with hydrocephalus. The child was being treated with antibiotics for respiratory tract infection secondary to the bilateral cleft lip and palate deformity. The child was anaemic and was found to have bilateral ronchi on auscultation of chest. The child was treated preoperatively with nebulisation and was taken up for the surgery. The child had no other comorbid conditions.

On O T table, while being connected to the multi parameter monitor, child was pre oxygenated and pre medicated with I V inj. Atropine 0.02mg/kg and inj. Ondensetron 0.2mg/kg and inj. Hydrocortisone 2mg/kg. In this case, the problems anticipated were mainly that of difficult endotracheal intubation secondary to Cleft lip and Cleft palate deformity as well as huge encephalocele which prevents proper positioning of head. Therefore the arrangements in the form of correct sized face mask, adequate sized oropharyngeal airway, a wad of gauge, correct sized laryngoscope blade etc. were made to deal with difficult airway. Positioning difficulty due to encephalocele can be overcome by either bringing the head beyond the edge of the table with one person supporting the sac and other one holding the head and supporting the body, or, by placing the

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baby supine on platform made by silicon supports kept one above other till the height matches with encephalocele sac and the head supported in hollow cushion protecting sac.[4] In our case the child was intubated using the first method after induction with sevoflurane as I V Inj. thiopentone sodium and inj. Succinyl choline were avoided due to difficult airway and spontaneous respiration was maintained during intubation. A wad of gauge was inserted in cleft of the palate and laryngoscopy was performed with the head extended.

At the first attempt, glottic opening could not be visualized. Laryngoscopy was repeated and endotracheal intubation was done with no.3 size ET Tube after adequate extension of head and external manipulation of the larynx manually. The child was repositioned on the O T table and ET Tube was secured after confirming the adequate bilateral air entry. Anaesthesia was maintained with N_2O, O_2, sevoflurane 0.5% to 1%, inj. Atracurium and IPPV using pediatric circle system. Anamol 80mg suppository was inserted per rectally. Inj. Midazolam 0.05mg/kg and inj. Tramadol 2mg/kg were administered intravenously.

After proper positioning of the child, surgery was commenced. Patient was hemodynamically stable throughout the surgery. At the end of the surgery, N_2O discontinued and patient was reversed using inj. Neostigmin 0.05mg/kg and inj Atropine 0.02mg/kg when spontaneous respiratory efforts were noticed. The patient was extubated when adequate spontaneous respiratory efforts were returned and child became conscious. The child started crying after extubation and was shifted to PICU with O_2 for further monitoring. Post operatively, child was observed for respiratory complications.

DISCUSSION: Encephalocele is a type of neural tube defect (NTD) that occurs 1 in 5000 live births. It is described as a sac-like protrusion or projection of the brain and accompanying membranes through an opening in the skull. The protruding tissue may be located on any part of the head but is usually in the middle at the back of the head (midline occipital area). Sometimes it may be associated with other malformations like dandy walker malformations, Arnold chiari malformation, cleft lip and cleft palate. In our case baby had giant occipital encephalocele associated with bilateral cleft lip and cleft palate.

A baby with occipital encephalocele is difficult to intubate due to difficulty in positioning the child. For successful endotracheal intubation, proper positioning is required. On O T Table we could not place the baby in supine position. We had to lift the baby and place its head beyond the edge of the table with an assistant supporting it. Associated anatomical abnormalities like cleft lip and palate makes airway management more complicated. Children especially infants have a higher incidence of difficult intubation due to their peculiar paediatric airway. The anatomical defects further increase the risk of difficult laryngoscopy and intubation. Furthermore, paediatric patients have a low functional reserve volume, and are very much prone for hypoxaemia, bradycardia and even cardiac arrest.

Therefore, an alternative airway management plan like suitable size LMA, stylet, bougie, high frequency jet ventilation, cricothyroid cannula and preparation for tracheostomy should be ready beforehand. The use of fiber optic bronchoscope would not be beneficial in our present case due to smaller size of ET Tube. All preparations for resuscitation should also be made. In our case difficult intubation was anticipated, and so the patient's respiratory efforts were preserved during intubation. Intra operatively, accidental extubation of the endotracheal tube or endobronchial intubation is

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common and this mandates vigilance. And also decision of timing of extubation and postoperative care are crucial events.

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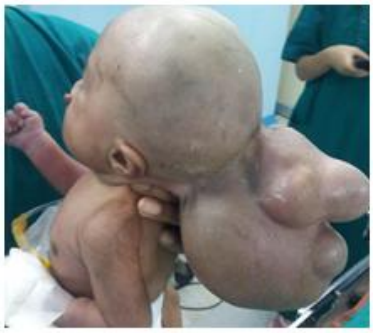

Fig. 1: Giant encephalocele

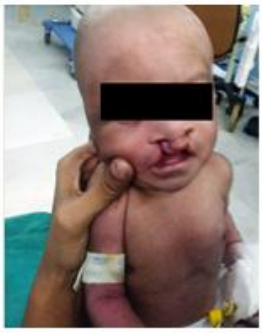

Fig. 2: Cleft lip and palat

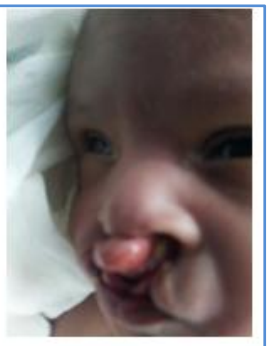

Fig. 3: closer view of CLCP

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