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Anaesthetic Management of Tongue Tie Release in a 2 Year Old Child with Peirre Robin Syndrome

KEYWORDS: Pierre Robin syndrome, Blind Nasal Intubation

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ABSTRACT *Airway management of a child with Pierre Robin Syndrome has always been a challenge for the anaesthesiologists. The micrognathia , macroglossia , ankylosis associated with high arched palate and Microstomia pose difficulty in intubating these patients.We report a case in which technique of blind nasal intubation was used to intubate a 2 year old child posted for tongue tie release after failed direct laryngoscopic intubation attempts.*

Introduction :
Congenital micrognathia , macroglossia with high arched cleft palate reffered to as Pierre Robin Syndrome as described by Pierre Robin in 1923[1]

However similar cases were recognized as early as 1902 by Shukovsky [2]

Relatively rare condition 1 in 5o,ooo births. More than 50% of cases are associated with a cleft palate[4-6] In 25 to 30 % of cases congenital cardiac and skeletal defects may be present.[7]

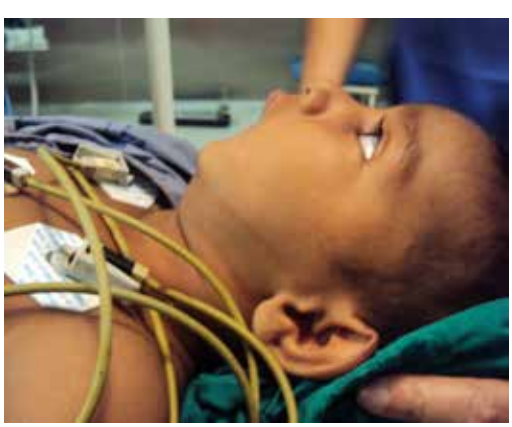
A 18 months old male child , weight 11 kg., diagnosed as a case of Pierre – Robin syndrome , admitted for tongue tie release (fig. 1) with H/O snoring during sleep suggestive of upper airway obstruction.

His systemic examinations showed normal temperature, pulse and blood pressure. His respiratory and cardiovascular systems showed normal features. Mouth opening was Mallampatti"s grade III. Hence difficult intubation was anticipated.

Physical findings :
Micrognathia , Macroglossia , Ankylosis associated with high arched palate with Microstomia. Tongue was attached to base.

Investigations revealed normal haemogram,blood sugar levels,X-ray chest.

Figure 1 Child with pierre Robin syndrome



Anaesthesia :
All preriquisits for paediatric general anaesthesia were confirmed.

I/V access secured. Multipara monitor attached including NIBP, SPO2 and ECG.

Premedication done with I/M Glycopyrrolate 0.08 mg 30 min prior to induction of anaesthesia.

Surface anaesthesia of airway achieved by nebulisation with 1 ml of 4 % lignocaine using a nebulizer of an oxygen flow of 6 lit./min prior to induction. Induction done with graded increase of Sevoflurane in Oxygen while maintaining spontaneous respiration. Oropharyngeal airway inserted to avoid airway obstruction. Superior laryngeal and transtracheal nerve blocks given with 2cc of 1% lignocaine with adrenaline by anticipating difficult laryngoscopy.

Direct laryngo scopy attempted three times using size 1 miller blade after achieving sufficient depth of anaesthesia but epiglottis could not be visualized. Blind nasal intubation attempted by using North pole tube no. 3.5 but was unsuccessful. Again blind nasal intubation was done with 3.5 mm Portex tube and correct placement of tube was confirmed by capnography. Iv scoline 20 mg given

Inj. Hydrocortisone 20 mg and Inj. Dexamethasone 1 mg given by intravenous route.

Throat packing done and surgery started. Patient maintained on Sevoflurane alongwith Oxygen and Nitrous Oxide (50%-50%). Throughout the procedure Oxygen saturation was maintained between 97 to 98 %. At the end of surgery patient was extubated when fully conscious. Post-operatively baby nursed in left lateral position.

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Discussion :

The children born with craniofacial anomalies like Pierre – Robin syndrome often prove to be difficult candidates for airway management during anaesthesia. A remarkably receded mandible in these children may cause difficulty in obtaining a satisfactory fit mask. In addition these patients may be very difficult for intubation. Awake intubation would perhaps be the safest method of securing the airway in the smaller infants but it may be difficult in the older infants in whom inhalational induction is preffered. With the child breathing spontaneously breath sounds could be useful guide for intubation. Use of muscle relaxants is best avoided as airway obstruction is more likely to occure when soft tissues are relax. Prior to induction of anaesthesia use of 4 % nebulised Lignocaine to provide surface anaesthesia of the airway could be beneficial in preventing breathe holding and laryngeal spasm in response to intubation. Vuckovic[12] et al have described the technique of aerosol anaesthesia of the the airway by using a small desposable nebuliser and have advocated use of this technique for providing topical anaesthesia of the airway for awake endotracheal intubation prior to general anaesthesia. This technique is simple , noninvasive and provides pre oxygenation simultaneously with nebulisation.

In this case because of ankyloglossia (root of epiglottis ankylosed) epiglottis was not visualized hence direct laryngoscopic intubation was difficult. Right Molar approach was not possible in this patient due to microstomia . Hence the option left was blind nasal intubation which was achieved with plain Portex tube no. 3.5 mm after giving superior and transtracheal laryngeal nerve blocks,which facilitate smooth blind nasal intubation without laryngeal spam when patients are in light planes of anaesthesia. We lift the head of child to 45 degree by putting towel drapes below his shoulder before attempting blind nasal intubation.

In adults an intubating LMA " Fast trach " has been used to fascilitate difficult airway intubation . However to manage difficult intubation in children paediatric size intubating LMA are not yet available . A new generation of ultra thin flexible bronchoscopes that allows direct fibro optic intubation in neonates and infants is not available in at our institute present.

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