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## Neonatal oral masses- Do not forget the basics

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## ABSTRACT

Intraoral mass in neonates impose unique anaesthetic challenges especially during induction and thus require careful planning to prevent obstruction, hypoxia and subsequent consequences. The success and safety of various techniques to secure the airway is yet not established in neonates with an intraoral mass<sup>1</sup>. We describe anaesthetic management in a neonate with an intraoral mass scheduled for excision under general anaesthesia.

**Key words:** Airway management, intra oral mass, neonate

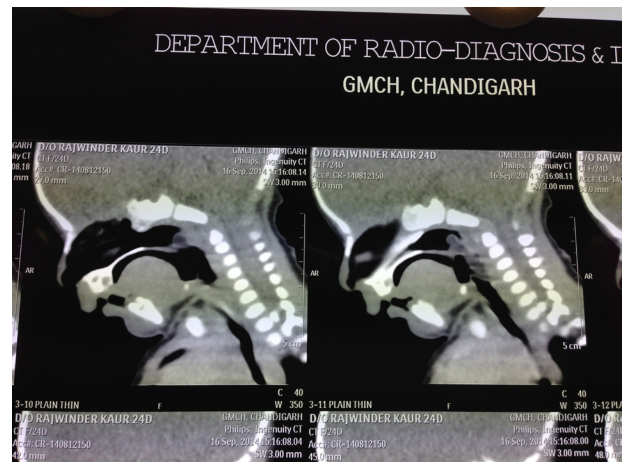
## INTRODUCTION

Intraoral mass in neonates is a nightmare for an anaesthesiologist. It may cause respiratory obstruction and/or feeding problems thus posing difficulties in perioperative period. Being obligate nasal breathers, minimal obstruction may lead to rapid hypoxia in neonates. History is delayed with slow growing masses and airway assessment is practically impossible<sup>2</sup>.

## CASE REPORT

A 24 days old female with birth weight of 2.3 kg presented with difficulty in feeding with regurgitation and breathing difficulty in supine position. Relevant past history was unremarkable. The visible mild rib retractions in supine position were absent in lateral decubitus position. All clinical investigations were normal. Oral cavity examination revealed a 5x2 cm serpentine, firm, non friable, papillary mass arising from the nasopharynx. Non Contrast Computed Tomogram (NCCT) findings revealed a homogenous soft tissue mass arising from nasopharynx to the base of tongue. (Figure 1) Patient was scheduled for surgical excision of the mass.

Adequacy of ventilation was confirmed in lateral decubitus position during the pre anaesthetic check up. The availability of neonatal Fiberoptic Bronchoscope (FOB) 1.4 mm internal diameter (ID) and equipment for surgical tracheostomy was ensured in the Operating Room (OR). Similarly, availability of difficult airway cart comprising oropharyngeal airways (size 000,00,0), endotracheal tubes (size 2-3.5mm ID), RBS mask, Miller's laryngoscope, paediatric stylets was ensured preoperatively.



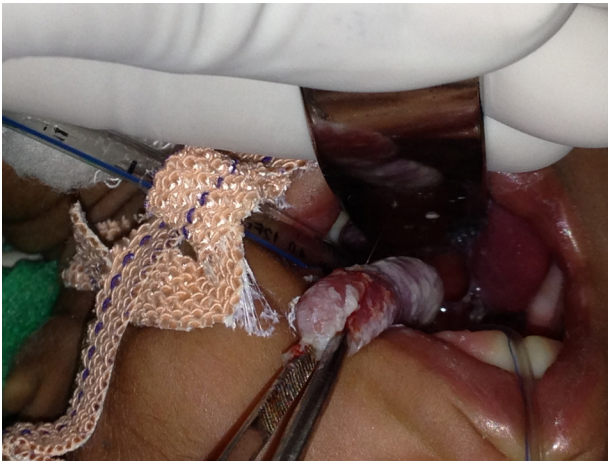
**Figure 1.** Computed Tomogram of the mass.

It was planned to intubate by Direct Laryngoscopy (DL scopy) in lateral decubitus position using inhalational anaesthetics as first line or FOB in case of failure of DL scopy. In case of inability to secure the airway by either way, resection by application of local anesthetic at the base of mass followed by DL scopy was kept as second line option and surgical tracheostomy as the last. A 24 G intravenous cannula was secured on the left dorsum and neonate was kept in the right lateral decubitus position with head-up tilt of the operating table. Atropine was

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administered IV in the dose of  $0.02 \text{ mg}^{-1}\text{kg}^{-1}$ . Inhalational induction was done on spontaneous respiration with sevoflurane 0.5% in air oxygen mixture in ratio of 50:50 and gradually incremented to 5%. For peri-operative monitoring, leads were attached to standard ASA monitors for ECG, NIBP,  $\text{SpO}_2$  and  $\text{EtCO}_2$  (Datex Ohmeda, Finland) and a precordial stethoscope was placed. DL scopy was performed once adequate depth of anaesthesia was achieved. The mass was seen to be lying away from the glottic opening and orotracheal intubation was accomplished with PVC 2.5 mm ID uncuffed endotracheal tube (ETT). Confirmation of placement of ETT was done through capnography and auscultation. Fentanyl in the dose of  $2 \mu\text{g}^{-1} \text{ kg}^{-1}$  was administered after intubation and muscle relaxation was achieved with non depolarising muscle relaxant atracurium ( $0.5 \text{ mg}^{-1} \text{ kg}^{-1}$ ). Anaesthesia was maintained in air and oxygen mixture in the ratio of 50:50 in sevoflurane on pressure control mode of ventilation. Mass was excised and hemostasis was achieved. (Figure 2) Extubation was done after reversing the neuromuscular blockade with atropine and neostigmine. Post operative period was essentially uneventful.



**Figure 2.** Excised mass.

Parents of the child consented for clinical details to be published in a journal.

## DISCUSSION

Intraoral masses are a rare presentation in neonates. Induction and securing the airway is fraught with many difficulties. Since airway is shared by both surgeon and anaesthesiologist, it becomes mandatory to secure it for effective ventilation and prevention of spillage of blood/secretions in the lower airway.

Airway has been secured using tracheal bougie, neonatal fibrescope, rigid bronchoscope and video laryngoscope and tracheostomy in neonates<sup>3</sup>. Video laryngoscope could not be used because of non availability of the neonatal blade in the present case. Since loss of airway on induction was anticipated in supine position, it was decided to accomplish endotracheal intubation in lateral decubitus position on spontaneous respiration. Despite availability of numerous airway equipments to manage such situation, it is important to use the technique that an anesthesiologist is familiar with and confident about.

Failure to achieve the same was also kept in mind and therefore adequate preparation was done beforehand. Failures in such cases have been managed with excision of the growth with use of local anaesthetic with atomizer in lateral decubitus position on spontaneous respiration<sup>4,5</sup>. Tracheostomy is technically difficult in neonates and thus was kept as a last resort.

## CONCLUSION

Neonates with an intraoral mass may present as difficult airway in elective or emergency setup. It is mandatory to formulate an airway management plan preoperatively and execute the same at the time of induction. It is necessary to select a technique that least interferes with surgical exposure while providing maximum ventilation at the same time.

**Conflicts of interest** – None

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