Anesthesiologist led end-to-end management of pediatric stridor presenting to a NORA setting

Dear Editor,

An 18-month-old baby boy presented to the pediatric emergency with an oral cystic mass at the base of his tongue associated with inspiratory stridor [Figure 1]. His parents had noticed the swelling at 6 months of age which increased in size. After an aspiration attempt at a local hospital, it rapidly increased to 4 × 4 cm. Since the child was developing labored noisy breathing, he was referred to our tertiary center.

A diagnosis of ranula was made and radio-imaging was planned. Our anesthetic concerns included managing an anticipated difficult airway in a non-operating room anesthesia (NORA) setting and post-procedure care. Our anesthesia team called for a multidisciplinary meeting with pediatricians, ENT specialists, and radiodiagnosticians to formulate a comprehensive management strategy. A definitive airway was deemed desirable and was planned in the operation theater (OT). After imaging, extubation was undesirable as the airway would be unstable. So, surgical excision was planned after imaging in the same time frame.

After shifting to OT, fiberoptic intubation with preservation of spontaneous respiration was planned. Secondary plans included cyst aspiration followed by laryngoscopy and surgical tracheostomy. After clinically ruling out adenoid hypertrophy; and administering nasal oxymetazoline 0.05% and intravenous glycopyrrolate and dexamethasone, a nasal trumpet (size 4) was introduced. 100% oxygen was administered via face mask, followed by induction with incremental sevoflurane. The nasal trumpet was connected to the circuit via an endotracheal tube (ETT) connector, and oxygen and sevoflurane delivery was continued.

A fiberoptic scope (size 3.6) loaded with a 4.5 mm uncuffed tube was navigated orally. After confirmation of the tracheal tube, atracurium 0.5 mg/kg was administered, and the child was shifted to the computed tomography (CT) suite [Figure 2]. The scan revealed no extension, and excision was done under general anesthesia. Before extubation, a check laryngoscopy was done, and the nasal trumpet was kept postoperatively. The child was monitored for signs of airway edema and discharged on postoperative day 2.

This case posed challenges at several stages of airway management [Table 1].

It illustrates critical points for managing a pediatric anticipated difficult airway. First, such a case should preferably be carried out in a tertiary center with experienced pediatric caregivers, as highlighted by the recent American Society of Anesthesiologists (ASA) guidelines.[1] At our tertiary center, the child received holistic treatment without any adverse events. Second, a definitive plan with backup techniques should be available.[2] We planned the previously described method of controlled aspiration of cyst followed by laryngoscopy to limit the possibility of accidental rupture and aspiration as plan B.[3,4] Third, recovery should be planned, especially in NORA settings. Elective ventilation or pediatric tracheostomy between the diagnosis and management were possible alternatives, but our multidisciplinary team decided an early intervention as the pathway with the least morbidity.

Since anesthesiologists are well-versed in periprocedural management and implications for a child presenting with stridor, they form the keystone for coordination between various departments to ensure successful outcomes in such cases.

Figure 1: Clinical image of the child with ranula

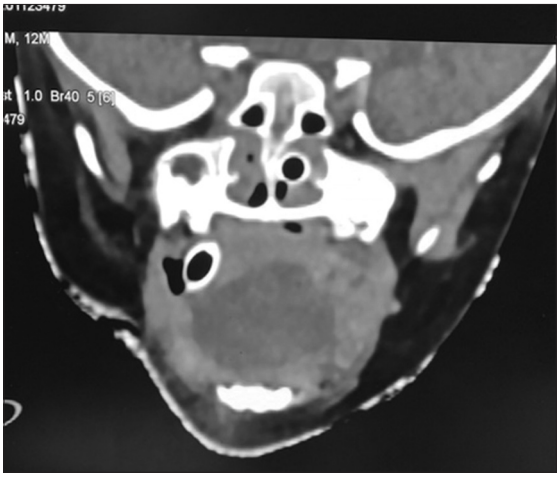

Figure 2: CT image of ranula

Table 1: Anticipated difficulties for pediatric airway management in case of ranula

Airway assessment	Anticipated difficulty	Strategy
Patient cooperation	Pediatric patient with limited cooperation	Airway management under general anesthesia
Bag mask ventilation	Possible difficulty if mass extension present	Nasal airway placement for clear nasopharyngeal passage
Supraglottic placement	Intraoral mass restricting oral cavity size	Controlled aspiration of the cyst if needed for placement
Laryngoscopy and Intubation	Risk of uncontrolled rupture	Fiberoptic intubation
Front of neck access	Not difficult	Pediatric ENT team and OT kept ready for surgical tracheostomy
Extubation	Airway edema	Prophylactic steroid cover, placement of nasopharyngeal airway and watch for s/o obstruction during recovery

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Apfelbaum JL, Hagberg CA, Connis RT, Abdelmalak BB, Agarkar M, Dutton RP, *et al*. American society of anesthesiologists practice guidelines for management of the difficult airway. Anesthesiology 2022;136:31-81.
2. Karsli C. Managing the challenging pediatric airway: Continuing Professional Development. Can J Anesth 2015;62:1000-16.
3. Singh A, Iyer K, Gupta A. Airway management in a case of large congenital ranula. Saudi J Anaesth 2018;12:163-5.
4. Kumar N, Bindra A, Kumar N, Yadav N, Sharma S. Anesthetic concerns in a huge congenital sublingual swelling obscuring airway access. Saudi J Anaesth 2015;9:202-3.

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