Increasing respiratory distress for 1 month. The child was delivered by normal vaginal delivery at term and had no respiratory problem at birth. The child was diagnosed to have subglottic hemangioma on bronchoscopy. The upper airway examination was normal, and there was no cutaneous hemangioma or any other associated anomaly. Arterial blood gas examination revealed: pH 7.38, pO₂ 30.4, pCO₂ 43.3 mm Hg, HCO₃ 25, SO₂ 56.2, and Hb 8.8 g/dl.

Emergency tracheostomy was done after local anesthetic infiltration, while assisting ventilation using a face mask and administering oxygen and sevoflurane. Post-anesthesia recovery was uneventful. Echocardiography and computerized tomography scan ruled out any associated cardiac or intracranial abnormality. Oral propranolol 3.5 mg and prednisolone 1 mg per day were started to decrease the size of the hemangioma.

A week later, the child was scheduled for laser ablation of the subglottic hemangioma. Oral prednisolone 1 mg was given in the morning. The patient was premedicated with intramuscular glycopyrrolate 0.04 mg. Anesthesia was induced with sevoflurane 8% in oxygen. Intravenous access was secured, following which fentanyl 8 mcg and atracurium 2 mg were given. Anesthesia was maintained with oxygen, isoflurane 1–1.5%, and atracurium. Using a rigid bronchoscope, a small wet gauze pack was placed distal to the hemangioma, so as to completely occlude the tracheal lumen above the tracheostomy tube. Ventilation was discontinued during the intermittent episodes of laser ablation. When the mass was completely ablated, the lungs could not be ventilated. Rigid bronchoscopy revealed the subglottic pack obstructing the tracheal lumen at the level of carina, which was removed. Adequate ventilation could be resumed immediately. The child remained hemodynamically stable, and no episode of oxygen desaturation occurred during the procedure, which lasted for 130 min. Postoperatively, the child was given supplemental oxygen, paracetamol suppository for analgesia, and dexamethasone 0.24 mg for reducing edema and nausea.

Congenital subglottic hemangioma is a rare but potentially life-threatening condition which may compromise the airway. Laser ablation is one of the modalities of treatment. Ignition of the endotracheal and tracheostomy tubes during surgery has been reported.

Self-adhesive, non-reflective aluminum tape may be used to protect endotracheal tubes, but it increases the outer diameter of the tube, compelling the use of smaller inner diameter tubes. Laser-resistant tracheostomy tubes are not available. We used a wet gauze pack which prevented the leak of anesthetic gases into the subglottic area and prevented aspiration of blood, fumes, and debris from the surgical site. The pack can migrate distally and cause airway obstruction, as it happened in our case. The migration of pack may be prevented by tying a thread to the pack and taping it on the cheek.

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AMBU Laryngeal Mask Airway: A useful aid in post-burn contracture of neck

Sir,
We describe a case of post-burn contracture of neck with limited mouth opening, where upside-down technique of
AMBU Laryngeal Mask Airway (ALMA) insertion was successfully used for airway management.

A 60-kg, 40-year-old patient with severe post-burn contracture of face, neck, and chest was scheduled for scar release and split thickness grafting surgery. Preoperative assessment predicted difficult intubation due to fixed flexion deformity of neck and reduced mouth opening of less than 2 cm [Figure 1]. Patient was explained about the same and need for tracheostomy or surgical emergency release of post-burn contracture if required.

Patient was premedicated with intravenous midazolam 0.5 mg, glycopyrollate 0.2 mg, and fentanyl 25+25 mcg. After preoxygenation for 3 min, incremental inhalational induction with halothane (0.53%) in oxygen was done. Fiberoptic-guided intubation was planned, but the equipment malfunctioned. A size 3 ALMA was tried in an attempt to secure the airway, but this failed as the shaft of the ALMA got stuck on to the chest, hindering its passage into the oral cavity [Figures 2 and 3]. It was now decided to put the ALMA with upside-down technique.

The deflated cup of the mask end of the ALMA was inserted, keeping it pressed against the hard and soft palate. Once the mask portion was inside the mouth up to its angulation, it was rotated by 180° [Figure 4]. The ALMA was then slipped comfortably inside the mouth and the cuff inflated [Figure 5]. Adequacy of ventilation was checked. The entire placement took less than 2 min. Oxygen saturation remained 98-99% during this period. Patient was thereafter administered neuromuscular blockade and the surgery done.

Use of standard laryngoscope is not possible in such cases due to nonalignment of oral/pharyngeal axis, making the intubation difficult. Various options available for intubation in these cases are awake fiberoptic intubation, laryngeal mask airway (LMA), intubating laryngeal mask airway (ILMA), blind nasal intubation, retrograde intubation, and tracheostomy. Fiberoptic intubation is the gold standard in such cases. LMA insertion may not be successful if the angle between oral, pharyngeal, and laryngeal axis is less than 90°.[1]
Kumar et al, reported reverse technique of ILMA insertion. \(^{[2]}\) ILMA is available in only adult sizes (size 3, 4, and 5), and thus cannot be used in pediatric patients. The width of an ILMA is more than 2 cm and this can hamper its insertion in cases of limited mouth opening. Styleted LMA has been used by the upside-down insertion technique in a pediatric patient,\(^{[3]}\) but the use of a stylet may cause trauma.

We have used an ALMA which has got a preformed curve replicating human anatomy. The internal ribs built in this curve give flexibility to it. It does not require a stylet and is available in both pediatric and adult sizes (sizes 1-5). It has both reusable and disposable versions, with width at the junction of mask and tube being less than 2 cm (size 3 LMA), and can be used as an intubation conduit. These properties allow an ALMA to safely negotiate the sharp oropharyngeal curve with the upside-down technique and can be used in all age groups.

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