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]

Figure 1: Fixed flexion deformity of neck with limited mouth opening

Figure 2: Shaft of AMBU LMA got stuck on to chest

Figure 3: AMBU LMA inserted with upside-down technique

Figure 4: Once angulation of AMBU LMA was inside the mouth, it was rotated to 180°

Figure 5: Patient well ventilated with AMBU LMA

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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