Difficult airway due to inaccessible face in a child- Challenge to anesthesiologist

Dear Editor,

Mask ventilation is an essential component of airway management, which provides anesthesiologists with a rescue technique during unsuccessful attempts at laryngoscopy and unanticipated difficult airway situations.[1] However, sometimes there may be a situation when we do not have even access to the face for mask ventilation. In such a situation, conscious sedation with the preservation of spontaneous ventilation is of utmost importance and serves the purpose before we can achieve access to the face.[2]

A 3-year-old child with her face stuck into a steel tiffin box got admitted to the emergency department [Figure 1a]. On examination, the child was crying. His heart rate was 150/min with normal heart sounds. The chest was clear with normal oxygen saturation. Computed tomography (CT) scan revealed a frontal bone fracture along with a dural rupture.

Airway access was the biggest challenge as there was no access to the face. It was decided to partially remove the steel tiffin box so that access to the face could be achieved for intubation. Oxygen was administered via tubing through a marginal gap between the cheek and the box [Figure 1b]. The difficult airway cart was kept ready. Surgeons were kept ready in case a tracheostomy was needed. Fortunately, the child was nil per oral. The intravenous line was secured. Conscious sedation was given meticulously using ketamine 5 mg intravenously and then in increments of 2.5 mg with a close watch on respiration, oxygen saturation, and heart rate. Surgeons cut it with (Drill bit) cutter using hand piece and micromotor starting from a hole already present in the center of the container very cautiously. Retractor was used to avoid injury to the cheek. After cutting and removing the lower half of the box, which took 30 min, access to the face could be achieved and the face mask was placed very gently [Figure 2a]. Glycopyrrolate was given. Ketamine 10 mg was given and after assessing the adequacy of ventilation, succinylcholine 15 mg and ketamine 10 mg were given and intubation was done successfully [Figure 2b]. Fentanyl 30 μg and vecuronium were

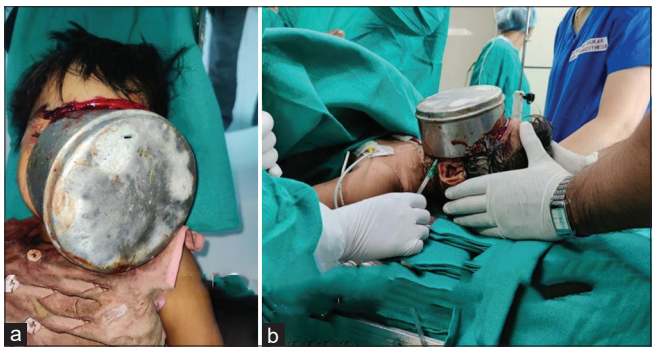

Figure 1: (a) Preoperative image (b) Oxygen administered through marginal gap between cheek and steel box

Figure 2: (a) Showing face mask ventilation (b) Image of the child after intubation

administered. The upper half of the box was removed, and dural repair was done by a neurosurgeon. After surgery, the trachea was extubated. Postoperatively the child was conscious, crying, and reflexes were normal, and shifted to neuro ICU.

Difficult airway as defined by the ASA Task Force on the management of the difficult airway is "the clinical situation in which a conventionally trained anesthesiologist experiences difficulty with face mask ventilation, tracheal intubation, or both.[3] We encountered a difficult airway as there was no access to the face due to a steel box stuck into the face.

We managed the child with conscious sedation using ketamine 5 mg and then in increments of 2.5 mg. Conscious sedation is safe because the patient remains conscious and can maintain a clear airway and adequate breathing. The conscious sedation drug technique has a margin of safety wide enough to make the loss of consciousness unlikely.[4]

Preservation of spontaneous ventilation is key to successful anesthetic management of such patients without airway access.

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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