

## **Inverted mask ventilation in a postrhinoplasty patient: Our experience**

Sir,

We would like to share our experience of inverted mask application for airway management in patients posted for rhinoplasty surgery. After reversal of anesthesia, occasionally, application of mask is required for assisted ventilation in the postoperative period.

The surgeons often forbid us from applying excessive pressure on the newly reconstructed nose, but a good mask seal is essential for proper ventilation. So, thinking out of the box, we formulated an alternative plan. The standard silicon anatomical size of 3 face mask [Figure 1] was rotated 180°, placed upside down with the nasal end resting over the neck and the opposite lower end of the mask placed over the upper lip [Figure 2]. The EC hand position was used, and the lateral edges fitted snugly over the side of the neck. This modified mask holding technique provided a good seal and avoided the nose altogether. Adequacy of ventilation was confirmed with bag movements, maintenance of oxygenation, and chest rise.

Mask ventilation is one of the most vital steps in the practice of anesthesiology. It is a basic airway management technique that



**Figure 1:** Patient being ventilated with the mask in inverted position — side view



**Figure 2:** Patient being ventilated with the mask in inverted position — front view

bails out the anesthesiologist in most difficult airway situations and is considered to improve survival even over endotracheal intubation in trauma patients.<sup>[1]</sup> Difficult mask ventilation is frequently encountered by anesthesiologists during the emergence after reversal and extubation due to a variety of reasons.<sup>[2]</sup>

In postrhinoplasty patients, postoperative mask ventilation is difficult as the dressings and plaster over the nose leads to a poor mask seal. Moreover, application of a face mask onto the nasal bridge may put undue pressure on the nose that could damage the surgical results. Since the nostrils are packed postoperatively, the patient breathes through the mouth and placing the mask over the nose bridge is really not required.

Various techniques for supplemental oxygenation have been described for rhinoplasty patients in the postoperative period like the use of nasal cannula, face tent or modification of the face mask by cutting off the top portion.<sup>[3]</sup>

Traditionally, the EC hand position is used to hold the mask and provide a good seal. In our patient, the EC position of the hand was maintained, however, the size of 3 mask was placed in an upside down manner with the web space of the thumb and index finger against the mask connector and pushing downward with gentle pressure. The nasal end was placed downward pointing toward the neck, and the lower curved edge was placed firmly over the upper lip. The lateral sides of the mask closed snugly over the neck. This avoided the nose altogether. A good seal was achieved, and the airway was well maintained.

A similar technique was used by Tong *et al.* for patients with a rigid external distraction system (RED) frame.<sup>[4]</sup> They positioned an inverted (rotated through 180°) air-cushioned anatomical facemask over the mouth to provide a seal while the nostrils were occluded by an assistant. Occluding the nostrils allowed effective preoxygenation, mask ventilation,

and maintenance of inhalation anesthesia. This inverted facemask technique also provided an effective emergency method of airway management in RED frame patients, without the need to remove components of the frame.<sup>[5]</sup>

Another method for mask ventilation in postrhinoplasty patients is the use of silicon child's facemask for mouth mask ventilation.<sup>[6]</sup> However, it can be cumbersome, and the pediatric mask may not always be readily available in the operating room where routine adult plastic surgery is being performed.

We found the technique of inverted mask holding very simple to perform and an effective method of mask ventilation. This alternative method of holding the mask can be especially useful in patients undergoing surgeries on the nose, facial tumors and trauma where conventional mask ventilation is sometimes impossible.

### 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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