Simplified Technique to Change the Endotracheal Tube from Nasal to Oral Cavity

Vivekanand S. Kattimani¹ · Meka Sridhar¹ · Taj Nizam Shakeel Shaik¹

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Abstract We introduce modified nasal to oral tube switch technique for modified alar cinching to prevent alar flare after orthognathic and nasal corrective surgeries. The technique is beneficial to prevent alar flare. Modified alar base cinching is effective in patients with modified tube switch technique. It increased positive results. The technique of tube switch is effective in prevention of alar flare. We suggest multi center randomized studies to know the technical difficulties of tube switch for cinching.

Keywords Alar flare · Alar cinch · Endotracheal tube · Nasal surgery · Modified tube switch · Orthognathic surgery

Introduction

The report describes modified nasal endotracheal tube to oral switch for effective alar base cinching so that unfavorable consequences [1, 2] of maxillary osteotomy can be prevented. It also facilitates alar base cinching.

The technique uses flexo-metallic endotracheal tube (Fig. 1). McIntosh laryngoscope, Babcock abdominal clamp. Babcock abdominal clamp was used to hold tube in place while shifting and modified zygomatic hook

with protective tubing was used for switching the nasal tube into the oral cavity (Fig. 2).

Tube Switch Technique

The technique of tube switch uses protected zygomatic hook. The procedure of switch is as follows: Babcock abdominal clamp was used to stabilize tube in oro-pharynx at the base of tongue to prevent migration of tube into trachea or accidental extubation. Modified zygomatic hook with protective tubing was used for nasal to oral switching by placing it just above the Babcock clamp which was placed between the exposed tube seen in postero inferior part of nasopharynx and oropharyngeal wall at the level of uvula (Video 1). Assistant deflates cuff then detaches connector from the end of endotracheal tube (Fig. 3) and pushes the tube posteriorly into nasopharynx at the same time anesthetist pulls the tube with zygomatic hook to deliver nasal portion of tube into and out of the oral cavity (Fig. 4). The tube and pilot balloon was easily delivered from nasal cavity into oral cavity. The connector was reattached to the ET tube which was secured to the lower lip/chin area with tape (Video 1).

Similar technique had been proposed by Werther et al. [3]. Muto et al. [4] used L shaped rolling retractor. But, we used readily available zygomatic hook in the maxillofacial surgeon's armory with protective modification using rubber tube. We found this to be an easy way to switch without any complications. This technique may be used for esthetic facial surgical procedures where tube switch is required. Modified nasal to oral tube switch using available armamentarium increases the positive results in comparison with non-shift by facilitating the cinching. The tube switch is an effective technique in the prevention of alar flare [3, 4].

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✉ Vivekanand S. Kattimani
drvivekanandsk@gmail.com

¹ Department of Oral and Maxillofacial Surgery, SIBAR
Institute of Dental Sciences, Guntur, Andhra Pradesh 522509,
India

Fig. 1 Flexo-metallic tube used for intubation

Fig. 2 McIntosh laryngoscope, Babcock abdominal clamp and Protected Zygomatic hook used for tube switch

Fig. 3 Nasal tube in place with disconnected connector and deflated cuff

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Compliance with Ethical Standards

Conflict of interest None.

Ethical Standards Informed consent was obtained from all individual participants included in the study.

Fig. 4 Nasal to oral tube shift by pushing nasal tube and pulling oral part using zygomatic hook and Babcock forceps used to stabilize the tube at the base of tongue

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