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(Accepted for publication October 12, 1984.)

Anesthesiology
62:374, 1985

Decreasing the Incidence of Upper Airway Bleeding when Using a Large-size Nasotracheal Tube

To the Editor:—Some groups advocate nasotracheal intubation as the technique of choice when prolonged ventilatory support is anticipated after open heart surgery. However, mucosal trauma resulting in severe bleeding due to anticoagulation during cardiopulmonary bypass limits its use. While a small-size endotracheal tube (ETT 7.0 mm ID) would decrease the risk of bleeding and mucosal trauma, it is likely to increase airway resistance¹ and thus the work of breathing during weaning from mechanical ventilation.

Modifying the nasotracheal intubation sequence, with equipment available in all operating suites, has permitted insertion of larger ETT (8.0 or 8.5 mm ID), while decreasing dramatically the incidence of these complications over the last 2 years, in our practice.

Suitable low-pressure cuff ETT are placed in an oven (50° C) next to the OR to soften the plastic of the ETT 15 min before expected intubation time. The cuff generously is lubricated with liquid sterile petroleum jelly. After induction, the selected nasal airway may be cleaned with an appropriate solution, which afterwards is suctioned. Then 5 ml liquid sterile petroleum jelly is poured down the selected nostril. The laryngoscope is positioned in the glosso-epiglottic fold to expose the vocal cords and to allow suctioning of the excess lubricant. The combined effect of temperature-induced softening and lubrication greatly facilitate the introduction of the ETT without any crunching feeling! Flexion of the head and cricoid compression allow axial alignment of tracheal and the nasal airway so that the tube easily can be introduced past the laryngeal inlet into the trachea.

Should the ETT tip impinge on the anterior laryngeal wall, 90-degree rotation counter clockwise usually will permit tracheal placement without resorting to a Magill forceps and the attending risk of cuff damage. If the

left nostril is selected, the ETT should be introduced with its concavity facing the anesthetist, that is, with its curvature in the opposite direction of the natural curvature of the nasal airway. This maneuver permits the sharp bevel of the ETT to slide along the septum, avoiding trauma to the richly vascular mucosa of the turbinates. Subsequently, the ETT is rotated 180 degrees clockwise and advanced in the trachea as previously described. This modified sequence can be used either with muscle relaxation or with topical anesthesia for awake intubation.

The introduction of a softened endotracheal tube via a generously lubricated nostril has made possible placement of larger endotracheal tubes, offering potential advantages of decreased upper airway bleeding incidence, decreased work of breathing during weaning, and easier tracheobronchial cares.

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(Accepted for publication October 12, 1984.)