

A Modified Technique for Direct Laryngoscopy and Tracheal Intubation

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On occasion considerable technical difficulty is encountered when orotracheal intubation is attempted under direct vision by orthodox methods. Unusual anatomical configurations may be encountered as mechanical obstacles requiring circumvention by extemporaneous maneuvers. One modified technique, discovered by trial and error, has proven helpful on numerous occasions and appears to warrant description so that others may test its usefulness when more orthodox methods of orotracheal intubation fail.

When the patient is ready to be intubated, a laryngoscope fitted with an *infant* size blade (we prefer the Wis-Wipple Foregger Type) is introduced through the *left* corner of the mouth at a point posterior to the molar teeth.

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Then, under direct vision, the tip of the blade is directed postero-medially under the base of the tongue until the epiglottis and rima glottidis come into sight. At this time an endotracheal tube (properly fitted with a maleable stilet adjusted to suit the particular configuration of the patient's oropharyngeal anatomy) is introduced and advanced in much the same manner through the *right* corner of the mouth from a point also behind the molar teeth on this side. When the tip of the endotracheal tube appears in the field of the laryngoscope, it is advanced through the glottic chink into the trachea under direct vision.

This modified technique of direct laryngoscopy has been used with considerable success to facilitate tracheal intubation, either through the mouth or the nose, also in emergency situations involving semicomatose or convulsing patients with tight jaws.

A Method for Assessing Postoperative Ventilatory Sufficiency

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Evaluating a patient's ventilatory ability following cessation of anesthetic administration is uncertain because residual muscle weakness after anesthesia is difficult to assess objectively. The anesthesiologist usually relies on his observation of the movements of the rebreathing bag as an indication of adequate respiratory exchange. Tidal volume may be measured with ease in

an intubated patient, but this only gives an approximation of his ventilatory capacity after extubation, after which many patients may not be able to muster sufficient force to overcome airway obstruction or to clear their airways of secretions. The method to be described identifies this type of patient.

Bendixen¹ described a facemask manometer to produce respiratory obstruction and to measure the negative pressure a patient is able to create in an effort to overcome it. A patient's ability to create 20–25 cm. of water subatmospheric pressure is deemed indicative of a satisfactory

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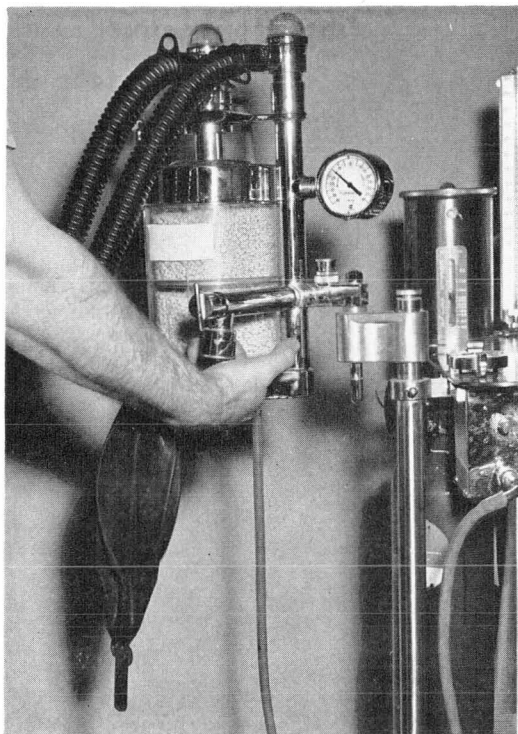


FIGURE 1.

inspiratory force in the immediate postoperative period.

The same information can be gained from any anesthesia machine equipped with a gauge

for indicating rebreathing bag pressure. The patient is permitted to breathe 100 per cent oxygen for 2 to 5 minutes, either through an endotracheal tube or a tight-fitting facemask. Thereafter the inflow of all gas is stopped and the rebreathing bag aperture is occluded with the palm at the end of expiration (fig. 1). Alternatively, if preferred, one may remove the bag from the machine and occlude the inflow duct. If the patient has satisfactory muscular power, he will demonstrate increasingly negative pressure on the rebreathing bag pressure gauge with each succeeding inspiratory attempt. Bendixen's figures are taken as the criterion for satisfactory inspiratory force with the realization that the elasticity of the corrugated breathing tubes causes the sub-atmospheric pressure to be less at the anesthesia machine than at the patient's upper airway. Practice with one or two patients demonstrates the ease of application of the technique, which also lends itself to preoperative evaluation for comparison with postoperative results.

REFERENCE

1. Bendixen, H. H., Surtees, A. D., Oyama, T., and Bunker, J. P.: Postoperative disturbances in ventilation following the use of muscle relaxants in anesthesia, *ANESTHESIOLOGY* 20: 121, 1959.