

## ENDOTRACHEAL TUBE GUIDE INTRODUCER AND METHOD OF INTUBATION

### CROSS REFERENCE TO RELATED APPLICATION

The present application is a continuation-in-part of co-pending application Ser. No. 08/871,369, filed Jun. 9, 1997, entitled "Endotracheal Tube Guide Introducer", abandoned.

### FIELD OF THE INVENTION

The present invention relates to a medical instrument used to facilitate insertion of an endotracheal tube into a patient's larynx and to a method of inserting an endotracheal tube into a patient's larynx. The instrument is of a type utilized by anaesthesiologists, paramedics and other emergency medical personnel.

### BACKGROUND OF THE INVENTION

Endotracheal intubation is a medical procedure which involves the placement of a tube in the trachea of a patient to facilitate breathing or to permit controlled introduction of medical gases such as oxygen or anaesthesia through the tube.

Ordinarily endotracheal tubes are inserted into the patient's larynx by the use of a laryngoscope once the patient is sedated or anaesthetized. The laryngoscope consists of a handle generally held in the left hand of the attending physician having a blade which pushes the tongue and epiglottis out of the way to expose the vocal cords and the laryngeal opening.

In some instances, due to anatomical differences, the physician is unable to expose the opening. In such circumstances, the attending physician will have to resort to other means of insertion such as:

- (1) Use of different kinds of blades including double angled blades, Jackson, Hollinger Jacks, Dido, Pilling and Tubular laryngoscopes. Other types of laryngoscopes may also be used such as Bellscope, bullards and others.
- (2) Use of lighted wands may be required.
- (3) In some instances, intubation may be by blind, oral or nasal procedures.
- (4) Guides such as Bougies guides are also available.
- (5) Surgical endoscopes which provide illumination means such as fiberoptic bronchoscopes may also be used.
- (6) Retrograde intubation kits may also be used.

While these various other means and procedures are available, they have various disadvantages. For example, the blind insertion of a tube in the absence of visualization may lead to complications and may interfere with proper ventilation. Other types of devices require extreme dexterity and multi-handed operation on the part of the physician.

The prior patent literature also suggests various other intubation devices including the following:

U.S. Pat. No. 5,235,970 entitled "Tracheal Intubation With a Stylet Guide" shows a flexible stylet guide which has a curved tracheal seeking forward end shaped to follow the curvature of the back of the tongue and the anterior surface of the throat and a rear end projecting out of the mouth. The guide is inserted into the larynx blindly and requires use of an endotracheal tube and a tracheal intubation guide.

U.S. Pat. No. 5,016,614 entitled "Endotracheal Intubation Apparatus" consists of a handle and an elongated obturator element. An endotracheal tube is selectively ejected from the extended portion and visualization is provided by means of an endoscope. Also, the device may be provided with a suctioning element. The apparatus provides visualization and serves to inject an endotracheal tube directly into the larynx.

U.S. Pat. No. 5,352,237 shows an endoscope instrument including a handle having a flywheel mechanism which is used for retraction and better visualization of endoscopic procedures. A flexible member is secured about the flywheel spool and extends to a tool mechanism at the distal end of the instrument.

U.S. Pat. No. 5,058,577 discloses a flexible tip stylet for use with an endotracheal intubation device. The intubation tube stylet is within an intubation tube. The stylet tip is Z-shaped and is deformable to facilitate insertion into the larynx despite an obstruction. This endotracheal tube is then slipped along into the larynx.

U.S. Pat. No. 4,529,400 entitled "Apparatus For Naso and Oro Endotracheal Intubation" discloses a directable stylet for nasal or oral intubation. The stylet is directed by a hand-operated lever bar and grips support into an articulating wire with a curvature to facilitate intubation.

U.S. Pat. No. 4,329,983 entitled "Guide Device for Endotracheal Tube" includes a flexible bar inserted through an endotracheal tube. Flexible line extends along the bar. When the line is pulled, the length shortens and causes the inner portion of the bar to flex and causes the tip of the tube to be directed forward toward the trachea.

U.S. Pat. No. 4,949,716 entitled "Nasal Intubation Adjunct" shows a device with a stylet in a handle to control direction of the stylet within a nasal tracheal tube. No visualization is provided and the device requires use of a stethoscope to confirm proper placement.

U.S. Pat. No. 5,363,838 shows a fiber intubation scope with camera and light weight portable screen and a method of using the same. The fiber optic is inserted through an endotracheal tube to visualize the trachea through the camera and screen and the tube is inserted.

U.S. Pat. No. 5,507,279 shows a retrograde endotracheal intubation kit. The kit is used as a guide to introduce transtracheally and upward (cephalad) directed through the mouth wherein the guide is inserted through an endotracheal tube which is pushed down the trachea and the guide pulled out.

U.S. Pat. No. 5,498,231 discloses an intubating laryngoscope. This device consists of a handle with a battery and lighting device. The device has a hollow tube for an endotracheal tube. The hollow tube terminates at a pair of opposed blades perpendicular to the hollow body. The blades are provided with a hand-controlled lever to open and close the blades.

U.S. Pat. No. 5,323,771 shows an endotracheal tube introducer which consists of a curved tube inserted into the mouth and the tracheal tube is directed down into the trachea through an opening in the tube.

U.S. Pat. No. 5,394,865 shows a lighted stylet which is insertable into an endotracheal tube and is directed through the trachea by direct visualization through fiber optic scope.

U.S. Pat. No. 5,287,848 discloses a compact instrument which includes a handle with a curved lower blade. The instrument has pre-positioned endotracheal tube, fiberoptic visualization device and sectioned openings.

In spite of the various intubation devices available in the prior art, there nevertheless exists a need for an improved