

FIBEROPTIC INTUBATING LARYNGOSCOPE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an intubating laryngoscope.

More particularly, the present invention relates to a fiberoptic intubating laryngoscope that allows for orotracheal or nasotracheal intubation of patients using a wide variety of standard endotracheal tubes under direct vision.

2. Description of the Prior Art

Current endotracheal intubation is effected in the vast majority of cases by use of a laryngoscope with a straight or curved metal blade. The curved blade is inserted between the epiglottis and the base of the tongue and the straight blade under the epiglottis, with a forward and upward motion required. Landmarks for insertion of the tube are the epiglottis, arytenoid cartilages and the vocal cords which may be only partially or not at all visualized. In the absence of direct visualization of the cords, difficulties in intubation may occur in the following and other circumstances: short muscular neck with full set of teeth; receding lower jaw; tempero-mandibular disease; long high-curved palate; difficulty in posturing of head and neck and opening of jaw (e.g. rheumatoid and osteoarthritis, suspected cervical spine injuries, and trismus); and masses or foreign bodies in the pharynx or larynx.

If a difficult intubation is anticipated, usually in elective and non-emergent situations only, intubation can be effected over a conventional fiberoptic bronchoscope or laryngoscope. These, however, are not widely available and very delicate instruments requiring significant expertise in their use. Their construction makes the intubation extremely awkward particularly when an orotracheal intubation is contemplated.

Numerous innovations for fiberoptic intubating laryngoscope have been provided in the prior art that are adapted to be used. Even though these innovations may be suitable for the specific individual purposes to which they address, they would not be suitable for the purposes of the present invention as heretofore described.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide fiberoptic intubating laryngoscope that avoids the disadvantages of the prior art.

More particularly, it is an object of the present invention to provide a fiberoptic intubating laryngoscope that allows for direct visualization of the cords via a fiberoptic system.

The fiberoptic intubating laryngoscope of the present invention is inserted into a standard endotracheal tube allowing for an initial stable "stylet" like shaping of the tube as well as flexion and extension of the tip of the tube in one plane by a hardy cable system. The endotracheal tube can be fully lubricated without loss of control.

Additionally, oxygen can be flushed through the present invention during the actual intubation. This feature is not found on conventional bronchoscopes or laryngoscopes because of their multipurpose design. The spraying of local anesthetic is also possible through the common suction channel. Additionally, a standard endotracheal tube with or without its universal adapter may be secured to a beveled junction or male universal

adapter. This feature is not found on conventional bronchoscopes because of their multipurpose design. Correct positioning of the tube can be confirmed by direct visualization of the carina, thereby precluding the need of an immediate postintubation radiograph.

The advantages of the present invention over the conventional available laryngoscopes, fiberoptic endoscopes and previous devices include: rapid intubation under direct vision; application of suction simultaneous to insertion of endotracheal tube; complete visualization and, therefore, minimization of damage to the glottis and vocal cords; institution of liquid local anesthetics in advance and during insertion of the endotracheal tube; assurance of proper positioning of endotracheal tube relative to carina precluding need of an immediate post-intubation radiograph; avoidance of right mainstem intubation; selective intubation of right or left mainstem bronchus if medically indicated; allowance for difficult intubation without need of repositioning of neck; obedient steel stylet allows reshaping and support of endotracheal tube unlike conventional and modified fiberoptic scopes facilitating its guidance especially by less experienced operator, while allowing for lubrication of exterior of endotracheal tube along its entire length without loss of control, retaining sufficient flexibility to negotiate bends in the oro and nasopharynx; stylet's position within the soft endotracheal tube minimizes potential for dental and oropharyngeal damage; rugged construction allows for easy cold sterilization as well as gas sterilization; rugged construction as well as stability allows for use by less experienced operators; rugged construction allows the instrument to be utilized in all the same settings of the steel bladed laryngoscope (e.g. crash carts, ER, ICU, etc.).

In keeping with these objects, and with others which will become apparent hereinafter, one feature of the present invention resides, briefly stated, in a fiberoptic intubating laryngoscope comprising a pistol grip, a beveled junction leading to a universal adaptor with vents attachable to a stylet, an oxygen port disposed on the pistol grip to allow for continuous flushing of oxygen via these vents in the universal adaptor, a fiberoptic bundle passing through the stylet, a suction channel passing through the stylet, a suction port disposed on the pistol grip to allow for suction through the suction channel controlled by a trigger disposed on the pistol grip, and a syringe port disposed on top of the pistol grip allowing a syringe to inject a topical anesthetic via the suction channel, a light source disposed within the pistol grip, an optical head connected to the pistol grip for direct visualization by the user.

In accordance with another feature of the present invention, the pistol grip is approximately 6 inches long.

Another feature of the present invention is that it further comprises a lever pivotally attached to the pistol grip for controlling the distal end of the stylet.

Yet another feature of the present invention is that it further comprises batteries for the power source and being disposed in the pistol grip.

Still another feature of the present invention is that it further comprises a stem which is approximately 5 inches long and connects the optical head to the pistol grip.

Yet still another feature of the present invention is that the optical head is equipped with a focus ring.

Still yet another feature of the present invention is that it further comprises a suction trigger, a suction