A NEW BLADE FOR BLIND ENDOTRACHEAL INTUBATION

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SUMMARY

A newly designed instrument for effecting blind endotracheal intubation is described.

In patients with various anatomical features, difficulty in performing endotracheal intubation occurs approximately once in 65 direct laryngoscopies (White and Kander, 1975). The anatomical abnormalities include a short muscular neck with a full set of teeth; a receding lower jaw with an obtuse mandibular angle, protruding upper incisors from relative overgrowth of the premaxilla, a long, high, arched palate associated with a narrow mouth and increased alveolar-mental distance (Cass, James and Lines, 1956; Wylie and Churchill-Davidson, 1972; Thornton, 1974; White and Kander, 1975). Several pathological conditions of the soft and bony tissues also may render endotracheal intubation difficult or impossible. These include cervical spondylosis, contractures of the neck and face as a result of burns, scleroderma, achondroplasia in dwarfism and radiation fibrosis of the tongue (Mather, 1966). In children, difficult endotracheal intubation is encountered frequently in patients with micrognathia, Still's disease or cleft palate (d'Arcy et al., 1976). In most of these conditions one is unable to visualize the larynx with a laryngoscope.

Attempts have been made to improve laryngoscopy by the use of the Bowen-Jackson blade (Bowen, 1952), the Galasso blade (Gillespie, 1963), blades with incorporated prisms, a bronchoscope as a guide and introducer (Bowen, 1967) or by fiberoptic techniques introduced recently. Threading an endotracheal tube over a long gum-elastic catheter introduced under direct vision (Macintosh, 1949) or the use of a laryngoscope with a bridge at the tip of the blade to guide an armoured tube (Larsen, 1966) have been described also. Blind oral or nasal techniques have been used and these include the tactile method, use of the divided airway (Sykes, 1937; Hewer, 1946; Thornton, 1974) or Hewitt's airway (Thornton, 1974). These methods are used usually without neuromuscular blocking drugs and the sound of gas flow acts as a guide for directing the position of the tube.

The technique of introducing a plastic catheter through the cricothyroid membrane and then threading an endotracheal tube over it may be used in the presence of trismus (Waters, 1963).

As an alternative to all these techniques a new blade has been designed which enables the operator to introduce an orotracheal tube without the necessity of seeing the larynx.

The instrument (fig. 1) consists of a handle and a blade which is a curved guide in the shape of a laterally open pipe. The upper wall ends in a tip with a bifid shape corresponding to that of the vallecula.

handle of the instrument, the epiglottis is lifted clear (fig. 2), producing free passage into the trachea. The curvature and the shape of the inferior wall of the blade guides the endotracheal tube (inserted in the blade) directly into the trachea.

The lateral opening of the blade enables easy withdrawal of the instrument without dislodging the endotracheal tube from the trachea.

In practice, the technique of intubation described above is very simple.

As the curve of the instrument corresponds to that of the anatomical airway, minimal opening of the mouth, just sufficient to allow the insertion of the blade, is required. It is possible to pass the blade along the tongue without touching the teeth and, in addition, its round shape minimizes the possibility of damage to the patient's gums and teeth.

This instrument has been used successfully on a large number of patients, including patients with anatomical features suggestive of potential difficulty with endotracheal intubation.

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Application has been made for a patent in respect of the design of this instrument.

REFERENCES


NOUVELLE LAME POUR EFFECTUER LES INTUBATIONS ENDOTRACHEALES MASQUEES

RESUME
On décrit dans cet article un instrument de conception nouvelle permettant d'effectuer les intubations endotrachéales masquées.

EINE NEUE KLINGE FUR BLINDE ENDOTRACHEALINTUBATION

ZUSAMMENFASSUNG
Ein neuentworfenes Instrument für die blinde Endotrachealintubation wird beschrieben.

UNA NUEVA CUCHILLA PARA INTUBACION ENDOTRAQUIAL CIEGA

SUMARIO
Se describe un instrumento recién diseñado para la realización de intubación endotraqueal ciega.