

CASE REPORT

Videolaryngoscope is not a luxury, but a necessity

Traoré Ibrahim Alain¹, Kaboré Flavien², Barro Sié Drissa¹, Traoré Idriss³, Ilboudo Serge³, Ouédraogo Nazinigouba²

¹Assistant Professor, Anesthesiology & Reanimation Department, The Polytechnic University of Bobo-Dioulasso, Houet, (Burkina-Faso)

²Professor; ³Anesthesiologist

Anesthesiology & Reanimation Department, University of Ouagadougou (UO), BP 7021, Ouagadougou, (Burkina-Faso)

Correspondence: Dr Traoré Ibrahim Alain, MD, Assistant Professor, Departement of Anesthesiology & Reanimation Department, The Polytechnic University of Bobo-Dioulasso, Houet, (Burkina-Faso); Mobile: 0022671457580; E-mail: itraore80@gmail.com

ABSTRACT

Tracheal intubation is the technique of choice for airway management. Occasionally, it may be difficult and result in severe complications including increased morbidity and even fatal outcome. Sometimes the planned surgical operation may have to be postponed. The videolaryngoscope allows a good exposure of the glottis, thus making tracheal intubation easier as compared with a conventional laryngoscope. The gadget is little found in Sub-Saharan Africa due to its high cost. We report our first experience of successful use of the videolaryngoscope in two cases, which had earlier required postponement of the surgery due to failed intubation.

Key words: Videolaryngoscope; Videolaryngoscopy; Airway management; Intubation, Tracheal

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INTRODUCTION

Tracheal intubation is most frequently done using the conventional Macintosh laryngoscope all over the world. Occasionally it may be found difficult or sometimes impossible in the practice of even experienced anesthesiologists. This situation may result in increased morbidity or a fatal outcome. The planned surgery may have to be postponed.

The videolaryngoscope, developed more than a decade ago, allows a better exposure of the glottis, so making tracheal intubation easier compared with a conventional laryngoscope.¹⁻³ It has found a place in the algorithms of difficult intubation according to international recommendations.⁴ Still, this new technique of indirect laryngoscopy is little found in Sub-Saharan Africa due to its high cost. We here share our first experience of use of the videolaryngoscope in two known cases of failed tracheal intubation. The aim of presenting the case reports is to stress the need to acquire every possible piece of the latest gadgets for airway management even in underdeveloped countries.

CASE REPORT 1

A 50-year-old patient was scheduled for excision of a right maxillary tumor. He had no other comorbid condition. Three weeks earlier, the patient had been scheduled for the same intervention. Consultation in pre-anesthesia clinic revealed the following indicators of difficult intubation; a Mallampati score 4, limited mouth opening of 2.5 cm and toothless jaws just sparing teeth numbers 31, 41 and 42. Thyromental distance was 6.5 cm. In the operating room, after monitoring (electrocardiograph, noninvasive blood pressure, pulse oxygen saturation) and a preoxygenation with a face mask for 3 min, anesthesia was induced with 120 mg of propofol, 30 mg of suxamethonium chloride and sufentanil. The tracheal intubation was tried by a male nurse anesthetist then a junior anesthetist with a size 4 blade of the Macintosh laryngoscope. During laryngoscopy even the epiglottis could not be visualized despite various external laryngeal manipulations and attempt at intubation failed. After oxygenation and a second



Figure 1: video-laryngoscope (Glidescope®)

dose of suxamethonium 30 mg, was tried three times by a senior doctor anesthetist. The surgery had to be postponed.

Three weeks later, when we received a videolaryngoscope, the patient was rescheduled for surgery. The same monitoring and anesthetic protocol was opted. The laryngoscopy was done by means of Glidescope® (Figure 1) by an anesthesiologist who had never used this device before, under supervision by an anesthesiologist familiar with the videolaryngoscope. Tracheal intubation was successful within one minute with a good vision of the epiglottis as well as the laryngeal opening (Cormack-Lehane Grade 1).

CASE REPORT 2

An 18-year-old patient, ASA PS-I was rescheduled for release of burn scars at his neck and face. The patient weighed 50 kg and was 160 cm tall. The patient had reported for surgery two months back. Preanesthetic evaluation revealed features of difficult intubation; a thyromental distance of 5 cm, an oral opening of 2.5 cm and Mallampati score of 3. After routine monitoring, the anesthesia was induced by propofol 100 mg and suxamethonium

50 mg. The intubation was tried thrice by a senior anesthesiologist using a Macintosh blade 4 with no visualization of the glottis. SpO₂ dropped to < 90%, so a laryngeal mask airway size 4 was inserted and the surgery postponed. Two months later, the patient was rescheduled for the same surgical operation. A protocol of induction similar to the first intervention was followed. Tracheal intubation was tried by another senior anesthesiologist with a Macintosh blade 4. In spite of 2 attempts and external laryngeal manipulation (BURP maneuver), the laryngoscopy remained Cormack-Léthane grade 4. After oxygenation and reinjection of 50 mg of suxamethonium chlorid, the intubation was easily done within 2 min by the same anesthesiologist by using Glidescope®. With the new device the laryngoscopic view was Cormack-Léthane grade 1.

DISCUSSION

Secure airway during general anesthesia is a major priority for all anesthesiologists, and tracheal intubation with direct laryngoscopy remains the method of choice in most of the cases. However, intubation can be difficult in 1 to 4% of the cases and it may fail in 0.05 to 35% of the patients of the general population.⁵ In case of difficult or failed intubation, may lead to severe complications such as hypoxic brain damage or even death.⁶

Several alternative techniques in case of difficult intubation have been suggested. Among these techniques, the gold standard is the use of flexible bronchoscope, which is, however, expensive and needs considerable experience before one could attempt it in patients.⁷ The videolaryngoscopes including Glidescope®, have now become a reliable alternative in case of difficult or impossible intubation. These allow better view of the glottis as compared to conventional laryngoscopy.^{1,2} In our patients, conventional laryngoscopy showed only Cormack-Léthane grade 4 view, whereas Glidescope® allowed an excellent view of the glottis with a Grade 1. Glidescope®, because of its configuration, does not require a compulsory alignment of the buccopharyngeal axis for the laryngoscopy.⁸⁻¹² Indeed, the blade of Glidescope®, contrary to that of the Macintosh laryngoscope blade, possesses an additional angulation of 60° upward in distal half. This enables to insert the blade along the median line of the tongue, to follow the airway contour without any tongue movement or necessity of aligning the visual axes. Other studies also demonstrated that Glidescope® reduced the difficulty of tracheal intubation

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compared with the Macintosh laryngoscope when used by experienced anesthesiologists as well as by beginners.^{10,11} In our first patient, Glidescope[®], was used by a postgraduate resident. Glidescope[®] reduced the time required to intubate as well as the risk of dental trauma. The videolaryngoscope is thus a necessity so that tracheal intubation can be done successfully and atraumatically even by less experienced nurse anesthetists or anesthesiologists. The videolaryngoscope also allows to teach laryngoscopy to nurse anaesthetists, doctors and students in a more effective way. In the coming years, videolaryngoscopes will probably be used as first option for tracheal intubation.

The high cost on procurement and maintenance

limit their wide spread use. However, due to their positive role in management of difficult airway, all university teaching hospitals need to purchase different videolaryngoscopes.

CONCLUSION

Videolaryngoscopes make tracheal intubation easier even in the hands of less experienced anesthesiologists, in cases with previously failed intubation. At times these may prove to be lifesaving. It is, thus, not a luxury to have one or more of these in our arsenal, but a necessity.

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Author contribution: All of the authors took part in the management of this patient and in manuscript preparation.

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The quality of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor.

Vince Lombardi