# Video Laryngoscope: To Be or Not (Yet) To Be Used?

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In the June/July issue of MACC magazine, an article titled "Comparison of C-MAC® video laryngoscope and Macintosh conventional laryngoscope for nasotracheal intubation convenience in adult Malay race population", wishes to present to readers, specifically anaesthesiologists, three main points. First, the authors show their outstanding contribution to anaesthesiology research and intensive therapy in Indonesia, particularly regarding airway management. On this occasion, the authors explicitly want to show a comparison of convenience between video laryngoscopes and conventional laryngoscopes in adults, which in reality has not been widely studied.

Secondly, in the Malay population, which is the main race in Indonesia, the authors certify that the video laryngoscope can provide a more comfortable tracheal intubation experience, much better visualization, and most importantly a reduced incidence of failed intubation, compared to traditional methods with Macintosh.

Lastly, apart from the prior points, the revelation of a significant difference in performance between video laryngoscope and nasotracheal intubation using a conventional laryngoscope may raise questions which are thought to be important and should be addressed. Is now the time for the video laryngoscope to be more popular and ready to become the standard of airway management in the anaesthesiology field in Indonesia?

Airway management is one of the routine procedures performed by an anaesthesiologist. Generally speaking, the success rate of intubation in patients who are about to undergo elective surgery is very high. However, in the case of difficult airways or emergency conditions, this procedure has become a challenge and provides a different perspective. There are several complications of intubation in the emergency department, including cardiac arrest, hypotension, hypoxemia, regurgitation, and some non-major complications such as bronchial intubation, dental or lip trauma, airway trauma, and allergic reactions. Research showed that 97% of patients who were intubated with direct laryngoscope experienced complications including esophageal intubation (5%), followed by dental and lip trauma (4%), regurgitation (2%), and hypotension (2%).[1]

Nasotracheal intubation (NTI) is one of the techniques of choice in airway management that is often utilized. This technique was first introduced by Kuhn in 1902 and popularized by Magill in the 1920s.[2] In oral surgical procedures, NTI is preferred because of better visualization for the operator.[3] To perform an NTI, a simple laryngoscope is needed to make intubation easier and safer. Traditionally, NTI procedures are performed using a direct laryngoscope with a Macintosh blade. However, the latest technology in the form of a video laryngoscope has been shown to provide better glottic visualization and less external manipulation of the larynx in both normal and difficult airway management.[4,5]

Assessment of the device efficiency when performing airway management showed

high intubation success ratio in the first trial. With advances in technology, the chances of successful intubation are greater. Studies have shown that the success rate of the first trial using the Glidescope and Pentax video laryngoscopes is higher than the conventional Macintosh laryngoscope.[5] Other studies have shown that C-MAC® provides better glottic visualization and increases intubation success rates.[6] However, there has been no research on the effect of using a video laryngoscope on the success of NTI.

The conventional laryngoscope is the instrument most commonly used by anaesthesiologists in Indonesia in performing airway management. The largest population of the community is the Malay race. In a research by Tantri, et al., it was found that the Malay race population have narrower airway structures that contributed to the difficulty of intubation, in this case, the more difficult visualization of the larynx.[7] Technological developments with video laryngoscopes can make intubation easier because of better angulation and clearer visualization.

However, there are several shortcomings that need to be highlighted in the article regarding the use and success of the video laryngoscope including: (1) the need for further research on more detailed patient characteristics in both the Malay and other racial populations that might affect the likelihood of the success of the video laryngoscope; (2) the need for consideration of comparison with other video laryngoscopes designs; (3) the availability of the video laryngoscope itself in the clinical fields; and (4) lack of anaesthesiologist experience with the video laryngoscope.

Currently, there are approximately 14 different video laryngoscope designs on the market. Video laryngoscope classification is broadly differentiated based on the blade geometry (shape, dimensions, curvature, and camera position), and the presence of fused channels (channel vs non-channel), which further impact the success of both endotracheal and nasotracheal intubation. Each design has different benefits and drawbacks, for example, blades such as the Macintosh have proven to be effective for the more versatile learning process of anaesthesiologist residents (direct vs indirect laryngoscopy view).[8] The lack of video laryngoscope's standardization or design variation in this article may potentially results in the explicit misassumptions from some of the readers that any video laryngoscope used for nasotracheal intubation that fails by conventional methods will certainly work, leading to unexpected difficulties when using different devices in its implementation.

The availability of this sophisticated video laryngoscope in the Indonesian market is still scarce, both in terms of design variations and in number, perhaps because the price is quite expensive. This can be a challenge in the future if the video laryngoscope is set to become a mandatory device in anaesthesia and intensive therapy facilities. Furthermore, another drawback is the skill of using this video laryngoscope. Kelly et al said that anesthesiologists who are proficient in conventional laryngoscopy may not necessarily be proficient in the use of a video laryngoscope, and anaesthesiologists who are proficient in the use of one video laryngoscope design may not necessarily proficient in the use of another.[9] Hence, this steep learning curve will certainly be a call for the local collegium to provide sufficient training on video laryngoscopes for anaesthesiology residents.

In conclusion, video laryngoscope is one of the airway management methods that has been proven to be effective in airway management, especially in difficult scenarios, and in this study, on nasotracheal intubation. This research deserves to be called as one of the promoters in the process of adapting and learning about video laryngoscopes in Indonesia. Hopefully, this research may motivate the readers to prepare for the technological leap from the conventional to the digital era, as we are adapting for the potential rising of video laryngoscope use. Because, to quote one of my teachers, that "To adapt to a change, we have to keep learning. Because if we stop (the process of) learning, then we will be overwhelmed by the change itself."

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