



## EDITORIAL

### Will videolaryngoscopy replace the laryngoscope in the Intensive Care Unit? ☆



### ¿Sustituirá el uso del videolaringoscopio al laringoscopio en la unidad de cuidados intensivos?

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The clinical practice guidelines for the management of the critically ill patient's difficult airway was published by the Difficult Airway Society (DAS) back in 2018.<sup>1</sup> These guidelines suggest the use of videolaryngoscopes (VL) in the presence of a difficult airway (DAW) or as a bailout strategy when the direct laryngoscope (DL) has failed. After this publication we ask ourselves: will the VL replace the DL for the management of the critically ill patient's difficult airway? Until now, the level of evidence of these statements in the anesthesia setting was good.<sup>2</sup> However, the attempt to extrapolate these results to the critically ill patient had very different outcomes.<sup>3</sup> Studies agree that they improve the level of glottic visualization, but they are not conclusive regarding less hypoxia or mortality.

In this issue of *Medicina Intensiva* we publish a study that compares the use of DL with a conventional Macintosh blade using the C-MAC<sup>®</sup> VL (Karl-Storz).<sup>4</sup> For one full

year 218 patients intubated electively in a level III polyvalent ICU were included in the study. Minor patients, those with a clear indication of VL or without time for randomization were excluded. Laryngoscopists were classified into 3 groups based on the years of clinical experience, but they all had performed, at least, 50 intubations in clinical simulation with the VL. In the VL group there was a higher first-attempt intubation rate and a lower detection of DAW, although this difference was compensated by the greater experience of health providers. However, it is relevant that the group that used the C-MAC<sup>®</sup> also more often required the steel guidewire for intubation purposes. The authors confirm that the greater use of the stylet can be indicative that the VL improves visualization, yet it can be difficult to direct the tip of the tube toward the larynx, a phenomenon that has already been reported with other VLs.

Other studies confirm that in patients with known DAW, the use of C-MAC<sup>®</sup> improves visualization<sup>5</sup> and facilitates optical access in patients with an anticipated difficult.<sup>6</sup> These data are different from those obtained in the randomized, multicenter, recent MACMAN clinical trial conducted in 7 French ICUs<sup>7</sup> where the rate of first-attempt intubation did not improve with the VL compared to the DL.

Some of the limitations of the study conducted by Dey et al. are the use of one single VL and the type of blade with the C-MAC<sup>®</sup> (hyperangulated D-Blade tip available). This makes extrapolation to other devices difficult (each

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with its particular peculiarities). The predictors of DAW were not taken into consideration either, muscle relaxation was not monitored, and the time required for intubation, number of attempts or the associated complications (such as hypoxemia or hemodynamic impairment) were not included. It is remarkable that the intubations studied were elective taking into account that, regarding the critically ill patient, this type of intubations are not associated to greater morbimortality.

Yet despite the study limitations and the different results obtained in other studies that compared both techniques, the expert guides on intubation and extubation in intensive care from the Société Française d'Anesthésie et de Réanimation (SFAR) and the Société de Réanimation de Langue Française (SRLF) published back in 2019<sup>8</sup> have included the VL in the algorithm for the management of the DAW as the first option in the intubation of patients who score >3 in the MACOCHA score,<sup>9</sup> and as the bailout strategy when intubation with the DL fails. The inclusion of the VL in the management of the airway in the recent intubation guidelines at the ICU comes from the good results obtained in the anesthesia setting, but they are not based on conclusive results in critically ill patients like the case presented in this issue.<sup>1,8</sup>

Truth is that, in Spain, and based on a national survey on the management of the airway in the intensive care unit conducted in 2017 by Gómez-Prieto et al.,<sup>10</sup> up to 53% of the participant ICUs had some model of VL available for the management of the DAW (taking into account that optical laryngoscopies were included too). At this time, only 50% of the ICUs had a written protocol on the management of the DAW. Has this reality changed with the publication of the aforementioned clinical practice guidelines or with studies like the one under discussion here?

In the study analyzed, the intubators included a prior training program with the VL, which adds to the importance of ongoing education on airway issues on top of the existence of specific evidence-based protocols and clinical practice guidelines. That is why it is interesting to promote clinical simulation and practice with cadaveric specimens to secure the implementation of these new techniques in patients.

The INTUPROS (<https://clinicaltrials.gov/ct2/show/NCT03916224>) is an ongoing trial in the Spanish intensive medicine setting. It is an observational, multicenter, prospective clinical trial on intubations at the ICU setting. Its main objective is to set the record straight on the risk factors of complications in the management of the airway, the frequency of use of the VL, and its impact on the appearance of complications compared to the DL. It will be the first airway study at the ICU setting ever conducted by intensivists.

It is reasonable to believe that the appearance of these new facilitating devices like the VL for the management of

the airway in the intensive care setting will lead to using these devices even more. However, this area of development requires making sure that the patient is safety through updated guidelines and the appropriate training. That is why the implementation of these technical advances requires studies to widen the evidence available.

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