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Videolaryngoscopy allows a better view of the pharynx and larynx than classic laryngoscopy

Editor—Videolaryngoscopy plays an increasingly more important role in airway management, a ‘core’ business of all anaesthetists.¹ During direct laryngoscopy, the larynx is viewed from outside the oral cavity. The distance between the vocal cords and the laryngoscopist’s eye is substantial

(30–40 cm). This reduces the angle of view to 15° with a classic laryngoscope. During videolaryngoscopy, the digital camera and light source are mounted very close (2–3 cm) to the tip of the videolaryngoscope and close to the larynx. The laryngoscopist obtains a much wider angle of view as captured on the camera monitor. In Figure 1, a blade size 4 of the C-MAC™ Storz® videolaryngoscope (Karl Storz, Tuttlingen, Germany) is shown with an angle of view of 80°. However, the 80° view angle provided by the lens is not visible in total because the anterior view is restricted by the tip of the blade itself, resulting in a visual angle of 60°. The anterior view angle is enhanced by using the more curved Mac 4 blade compared with Mac 2 and 3 blades. In contrast to most Europeans, Americans prefer to use the Mac 4 blade in daily routine practice, especially in obese patients.

The success of the Macintosh Classic laryngoscope is attributable to the versatility of the human head and eyes’ ability to travel rapidly across three-dimensional space such that the 15° angle of view can be applied from a variety of vantage points. The D-blade was designed for the remaining 2–5% ‘most difficult’ cases. It allows only indirect visualization of the glottis, because the D-blade is much more curved compared with all Mac blades. It is recommended for use in difficult airways with a more anteriorly placed glottis (with reference to the line of vision from the top incisors to the laryngeal cords).^{2,3} Additionally, much less force is needed for glottis visualization with both the D-blade and the videoscopes when compared with other Mac blades.

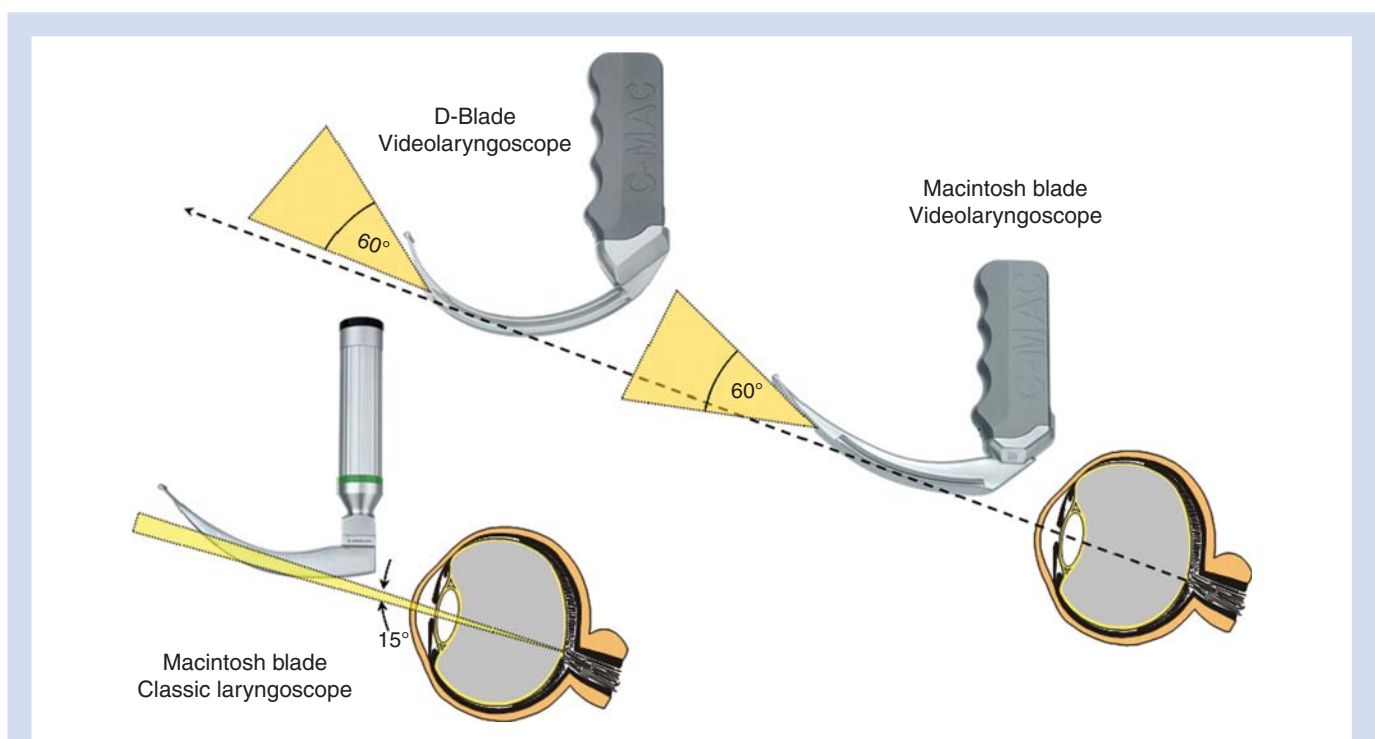


Fig 1 Vertical visible angle of view (60°) with a Mac blade size 4 and a D-blade C-MAC® videolaryngoscope, compared with 15° with a classic laryngoscope.

Videolaryngoscopy consistently offers a better and larger view of the oropharynx and larynx than classic direct laryngoscopy. This makes videolaryngoscopy an excellent tool for teaching and training, for inspecting the oral cavity, for successful intubation of the normal, unexpected, and expected difficult airways, and, we are confident, as the routine tool, eventually, for all tracheal intubations. The videolaryngoscope may not only be beneficial to anaesthetists but, also, to ENT surgeons. Manufacturers should continue to fine tune the design and function of the blades of videolaryngoscopes to meet requirements such as creating optimal illumination of the mouth (e.g. a double light source), obtaining a wider angle of view of the oropharynx and larynx, producing enough space within the airway to safely insert a tracheal tube and other instruments (e.g. oral/nasogastric tube, Magill's forceps), allowing both direct and indirect laryngoscopy and increasing the options to produce an 'open airway'.

Surgeons have accepted that keyhole surgery is better than open surgery. While many studies have shown that videolaryngoscopy is more likely to be successful than direct laryngoscopy (hence its widespread use in difficult intubations and inclusion in failed intubation algorithms) at achieving definitive intubation, a range of videolaryngoscopes are often delegated to the 'boy's toys' division of the failed intubation trolley where they continue to gather dust. With the much greater availability of these devices, there is little doubt, in the fullness of time, that the videolaryngoscope intubation will be daily standard for all intubations rather than an 'extra tool' in the difficult intubation trolley. The relative

costs of the disposables and reusables are now virtually identical. The lessons learnt from almost 70 yr of blade design will not be forgotten and left by the wayside; manufacturers will almost certainly wish to incorporate these innovations into the best videolaryngoscope designs.

Declaration of interest

None declared.

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