

Comparison of Procedural Distancing of Primary and Advanced Intubation Techniques

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Introduction: Maximizing face to face patient-laryngoscopist procedural distance during intubation may decrease the risk of cross contamination during the COVID-19 pandemic. ¹ Hall demonstrated that videolaryngoscopy (VL) was associated with a significantly greater face to face procedural distance compared to direct laryngoscopy (DL). ² Little is empirically known about procedural distancing associated with advanced airway techniques such as intubating supraglottic airways (ISGA) or VL combined with an articulating introducer (VL+AI).

Methods: After approval by our Institutional Review Board, twenty subjects - comprised of 7 attending anesthesiologists and 13 anesthesia trainees - were enrolled to intubate an airway mannequin (TruCorp Airsim) with a 7,5 ETT in this order:

- 1) DL (Storz C-Mac 3 with no access to the video screen) with a malleable stylet
- 2) VL (Storz D blade™) with a standard rigid stylet (Storz C-Mac Guide™)
- 3) VL+AI (Storz D blade™ in combination with a TTCmed.com TCI™ articulating introducer)
- 4) ISGA (Teleflex #4 Fasttrack LMA™)

All intubations were recorded allowing measurement of the face to face procedural distance of each intubation.

Results: The mean (SD) minimal procedural distance of each technique and results of a two-tailed paired t- test to determine significance are found in figure 1.

Technique	Distance (cm)	p value
DL with malleable stylet	28.0(14.5)	
VL with rigid stylet	41.5(9.55)	p < 0.001
VL with articulating introducer	38.3(11.99)	p < 0.02
Intubating SGA	32.5(11.10)	p < .3

Figure 1. Face to face procedural distancing associated with various intubation techniques compared to DL.

Summary:

- 1) Our study confirms Hall's findings that VL is associated with a significantly greater procedural distance when compared to DL.
- 2) Of advanced airway techniques, only VL combined with an articulating introducer and not ISGA is associated with significantly greater procedural distancing.
- 3) VL with articulating introducer trended toward a greater procedural distance (average > 10cm greater) than the ISGA, but was not significant at this sample size.

This data may be useful in choosing both primary and advanced rescue techniques during the COVID-19 pandemic. VL with an articulating introducer may offer an advantage over ISGA in maintaining maximal face to face procedural distancing during advance airway management.

References:

1. Hall D, Steel, A et al. *Anaesthesia* 2020; 75,16; 822-823
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3. El-Boghdadly, Wong D, Owen R et al. *Anaesthesia* July 17, 2020; (Early view)