

Proof of Concept of Video Laryngoscopy Intubation: Potential Utility in the Pre-Hospital Environment by Emergency Medical Technicians

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Abstract : The pre-hospital endotracheal intubation is fraught with difficulties; one solution offered has been video laryngoscopy (VL) which permits better visualization of the glottis than the standard method of direct laryngoscopy (DL). This method has resulted in a higher first attempt success rate and fewer failed intubations. However, VL has mainly been evaluated by experienced providers (experienced anesthetists), and as such the utility of this device for those whom infrequently intubate has not been thoroughly assessed. We sought to evaluate this equipment to determine whether in the hands of novice providers this equipment could prove an effective airway management adjunct. DL and two VL methods (C-Mac with distal screen/C-Mac with attached screen) were evaluated by simulating practice on a Laerdal airway management trainer manikin. Twenty Emergency Medical Technicians (basics) were recruited as novice practitioners. This group was used to eliminate bias, as these clinicians had no pre-hospital experience of intubation (although they did have basic airway skills). The following areas were assessed: Time taken to intubate, number of attempts required to successfully intubate, ease of use of equipment VL (attached screen) took on average longer for novice clinicians to successfully intubate and had a lower success rate and reported higher rating of difficulty compared to DL. However, VL (with distal screen) and DL were comparable on intubation times, success rate, gastric inflation rate and rating of difficulty by the user. This study highlights the routine use of VL by inexperienced clinicians would be of no added benefit over DL. Further studies are required to determine whether Emergency Medical Technicians (Paramedics) would benefit from this airway adjunct, and ascertain whether after initial mastery of VL (with a distal screen), lower intubation times and difficulty rating may be achievable.

Keywords : direct laryngoscopy, endotracheal intubation, pre-hospital, video laryngoscopy

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