SEEING IS BELIEVING:

THE BENEFITS OF VIDEO LARYNGOSCOPY

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DISCLOSURES

• None
Airway Management

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INTRODUCTION

VITAL SIGNS

DEMETRIOS D.

Matt Muller ??
First laryngoscope invented in 1854 using mirrors

1913 first direct laryngoscope with its own light source
Blood letting for injury and illness
Surgery with no anesthesia
Rotating tourniquets for CHF
Direct laryngoscopy
Direct laryngoscopy
SO, IS VIDEO LARYNGOSCOPY SUPERIOR?
FACTORS AND CHALLENGES

• What are you measuring?
  • Success rates, glottic view, time to intubation, complications,…..
• Type of Device
• Experience of intubator
• Experience of intubator with video laryngoscopy
• Mannequin / simulator vs. Humans
• Patient environment -OR, ED, NPO status
• Condition of airway – difficult anatomy, airway contamination?
VIDEO LARYNGOSCOPES

- Direct vs indirect viewing monitors
VIDEO LARYNGOSCOPES

• Direct vs indirect viewing monitors
• Hyperangulated vs traditional shaped blades
VIDEO LARYNGOSCOPECES

- Direct vs indirect viewing monitors
- Hyperangulated vs traditional shaped blades
- Rigid stylets vs tube delivery channels
WHAT DOES THE RESEARCH SAY?
Comparison of video laryngoscopy versus direct laryngoscopy during urgent endotracheal intubation: a randomized controlled trial

Michael J Silverberg, Nan Li, Samuel O Acquah, Pierre D Kory

Critical Care Medicine 2015, 43 (3): 636-41

CONCLUSIONS: Glidescope video laryngoscopy improves the first-attempt success rate during urgent endotracheal intubation performed by pulmonary and critical care medicine fellows when compared with direct laryngoscopy.
Video laryngoscopy versus direct laryngoscopy for tracheal intubation during in-hospital cardiopulmonary resuscitation

Dong Hyun Lee, Myongja Han, Ji Young An, Ji Young Jung, Younsuck Koh, Chae-Man Lim, Jin Won Huh, Sang-Bum Hong

Resuscitation 2015, 89: 195-9

**CONCLUSION:** Use of video laryngoscopy during CPR from in-hospital cardiac arrest is independently associated with successful tracheal intubation at the first attempt.
CONCLUSIONS: Head-to-head comparison in this large multicenter trial revealed that the newly introduced C-MAC D-Blade does not yield the same first-attempt intubation success as the GlideScope in patients with predicted difficult laryngoscopy except in the hands of attending anesthesiologists. Additional research would be necessary to identify potential causes for this difference. Intubation success rates were very high with both systems, indicating that acute-angle video laryngoscopy is an exceptionally successful strategy for the initial approach to endotracheal intubation in patients with predicted difficult laryngoscopy.
Video laryngoscopy versus direct laryngoscopy for orotracheal intubation in the intensive care unit: a systematic review and meta-analysis

Audrey De Jong, Nicolas Molinari, Matthieu Conseil, Yannael Coisel, Yvan Pouzeratte, Fouad Belafia, Boris Jung, Gérald Chanques, Samir Jaber


**RESULTS:** Nine trials with a total of 2,133 participants (1,067 in DL and 1,066 in VL) were included in the current analysis. Compared to DL, VL reduced the risk of difficult OTI [OR 0.29 (95% confidence interval (CI) 0.20-0.44, p < 0.001)], Cormack 3/4 grades [OR 0.26 (95% CI 0.17-0.41, p < 0.001)], and esophageal intubation [0.14 (95% CI 0.02-0.81, p = 0.03)] and increased the first-attempt success [OR 2.07 (95% CI 1.35-3.16, p < 0.001)]. No statistically significant difference was found for severe hypoxemia, severe cardiovascular collapse or airway injury.
A comparison of video laryngoscopy to direct laryngoscopy for the emergency intubation of trauma patients

Maria Michailidou, Terence O’Keeffe, Jarrod M Mosier, Randall S Friese, Bellal Joseph, Peter Rhee, John C Sakles


**CONCLUSIONS:** In trauma patients intubated emergently, VL had a significantly higher success rate than DL. These data suggest that, in select circumstances, **VL is superior to DL for the intubation of trauma patients with difficult airways.**
61.8 %). After adjusting for potential confounders, VL was associated with higher odds of first pass success for patients with no DACs (aOR 2.0, 95 % CI 1.2-3.3), one DAC (aOR 3.2, 95 % CI 1.9-5.6), two DACs (aOR 2.3, 95 % CI 1.1-4.9), and three or more DACs (aOR 2.9, 95 % CI 1.5-5.5). In patients with DACs, VL was associated with a higher first pass success than DL. VL is recommended as the primary intubating device for patients with predicted difficult airways in the ED.
EMS Intubation Improves with King Vision Video Laryngoscopy

Jeffrey L Jarvis, Sarah Frances McClure, Danny Johns

Prehospital Emergency Care 2015, 19 (4): 482-9

CONCLUSION: In this suburban EMS system with historically low intubation success rates and low frequency of intubation, paramedics were able to improve all measures of intubation success using the King Vision video laryngoscope and an ongoing training program when compared with direct laryngoscopy.
The impact of video laryngoscopy use during urgent endotracheal intubation in the critically ill

Pierre Kory, Keith Guevarra, Joseph P Mathew, Abhijith Hegde, Paul H Mayo

Anesthesia and Analgesia 2013, 117 (1): 144-9

CONCLUSIONS: UEI using a VL as the primary device improved intubation success and decreased complications compared with a DL when PCCM fellows were the primary operators. These data suggest that the VL should be used as the primary device when urgent intubations are performed by less experienced operators.
Tracheal intubation in the emergency department: a comparison of GlideScope® video laryngoscopy to direct laryngoscopy in 822 intubations

John C Sakles, Jarrod M Mosier, Stephen Chiu, Samuel M Keim


CONCLUSION: The two techniques performed equivalently overall, however, GlideScope had a higher overall success rate, and lower number of esophageal complications. In the setting of ED intubations, GlideScope offers an excellent option to maximize first-attempt success for airway management.
CONCLUSIONS: In patients with normal cervical spine, KVL resulted in less extension of the cervical spine than direct laryngoscopy.
Videolaryngoscopy versus direct laryngoscopy for adult patients requiring tracheal intubation.

Lewis SR¹, Butler AR, Parker J, Cook TM, Smith AF.

**AUTHORS’ CONCLUSIONS:** Videolaryngoscopes may reduce the number of failed intubations, particularly among patients presenting with a difficult airway. They improve the glottic view and may reduce laryngeal/airway trauma. Currently, no evidence indicates that use of a VLS reduces the number of intubation attempts or the incidence of hypoxia or respiratory complications, and no evidence indicates that use of a VLS affects time required for intubation.
The importance of first pass success when performing orotracheal intubation in the emergency department

John C Sakles, Stephen Chiu, Jarrod Mosier, Corrine Walker, Uwe Stolz


**CONCLUSIONS:** When performing orotracheal intubation in the ED, first pass success is associated with a relatively small incidence of AEs. As the number of attempts increases, the incidence of AEs increases substantially.

*Imperative to maximize changes of first pass success!!!!!!*
CHALLENGES TO VIDEO LARYNGOSCOPY

• Took longer in some studies
• Different technique than direct
• Challenges in tube delivery
• Improvements are more pronounced with less experienced providers
BENEFITS

• BETTER VISUALIZATION
• EASIER ON THE PATIENT
• LESS C-SPINE MANIPULATION
• IMPROVED FIRST PASS SUCCESS RATE = LESS ADVERSE EVENTS
QUESTIONS?