

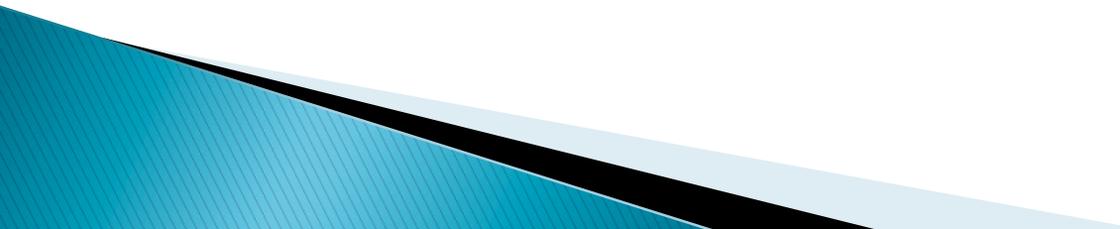
Emerging Use of Videolaryngoscopy

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Disclosures

- ▶ No commercial or personal conflicts of interest to disclose.
 - ▶ Discussion of specific commercially available devices is related to institutional availability and published literature rather than endorsement.
 - ▶ Opinions are like airways, everyone has one, but some are better than others.
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Objectives

- ▶ Discuss the idea behind videolaryngoscopy and the benefit over direct laryngoscopy.
 - ▶ Briefly review available literature regarding videolaryngoscopy.
 - ▶ Examine situations and cases where videolaryngoscopy improved patient care.
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Videolaryngoscopy

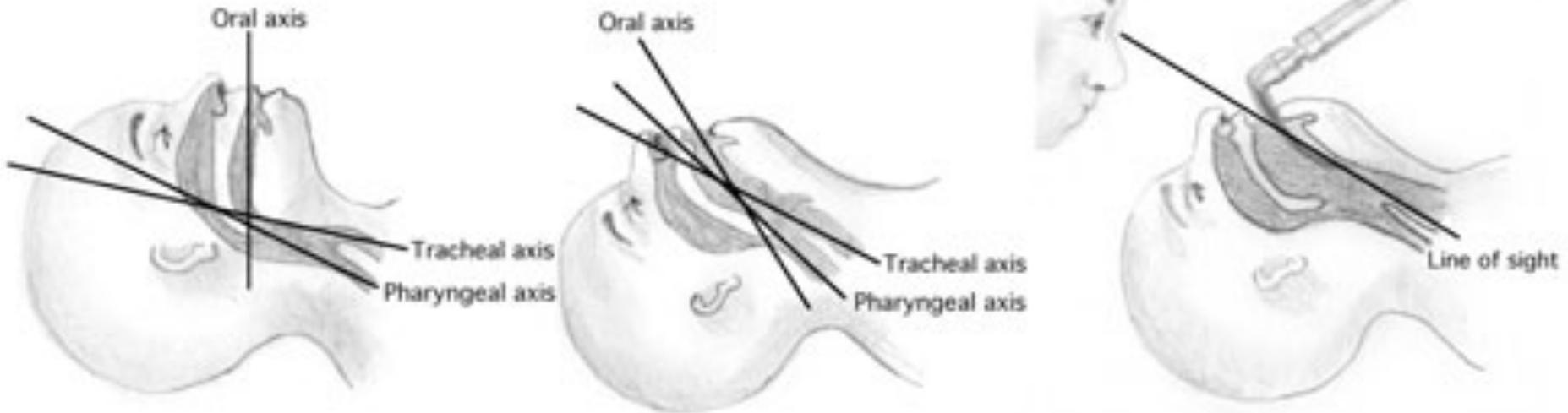
- ▶ 2001: Glidescope introduced first commercially available video laryngoscope
 - ▶ Verathon Ranger followed with system targeting military application (later adding disposable blades)
 - ▶ Market has been flooded with “me too” devices with technological advantages and limitations
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Sample of available svstems

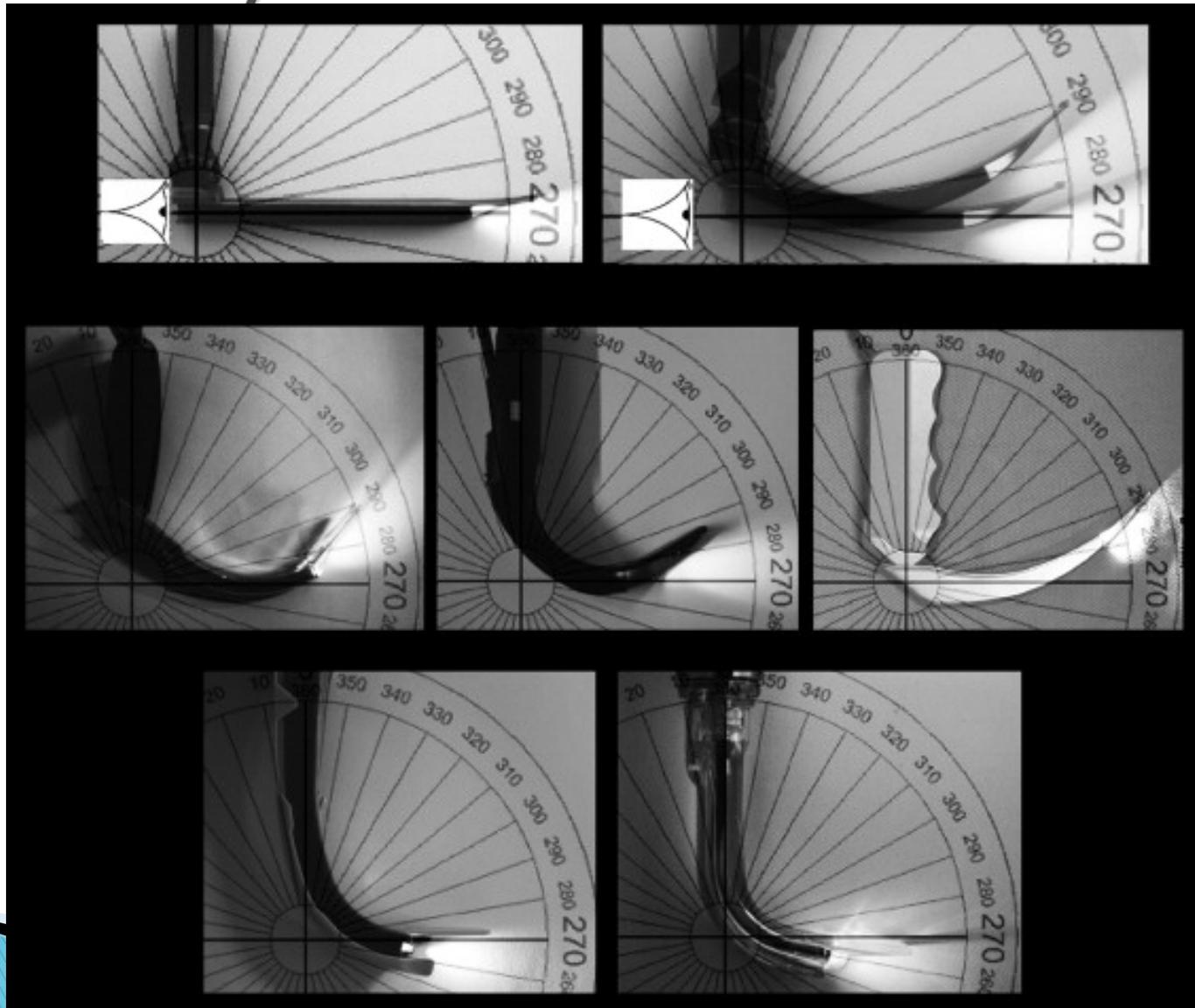


In Theory

- ▶ Allows for visualization of glottis with minimal anatomic manipulation of cervical spine

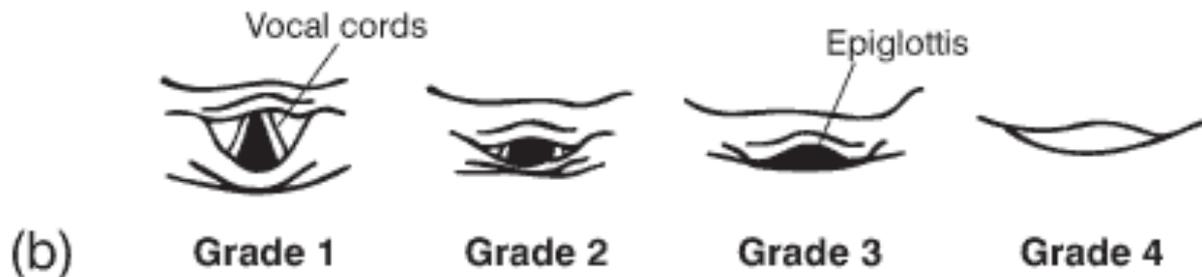
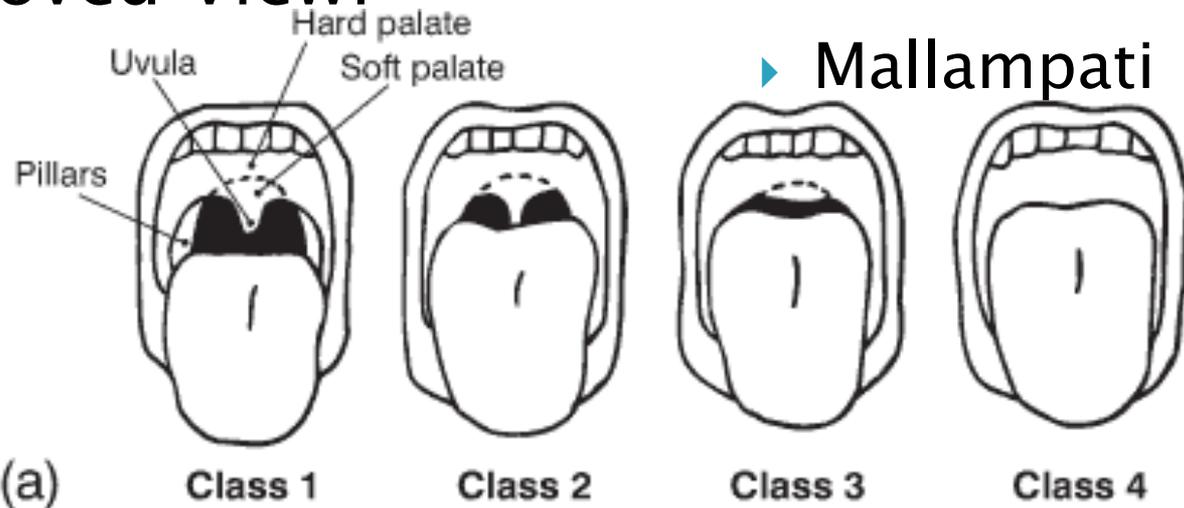


In Theory



In Theory

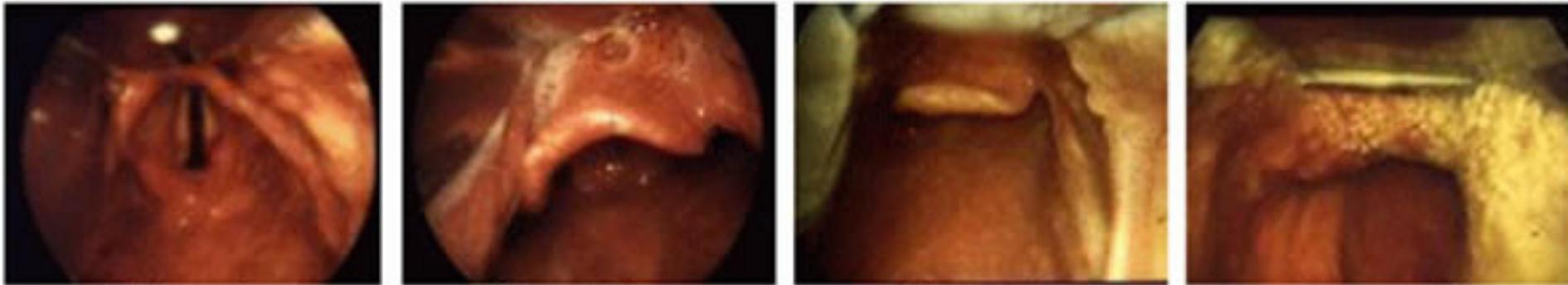
▶ Improved View:



▶ Cormack-Lehane

In Theory

- ▶ Improved View



I



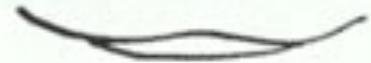
II



III



IV



- ▶ Cormack-Lehane

Additional Advantages

- ▶ Non-traditional positioning
 - Awake/nearly awake, prehospital/disaster/austere
 - ▶ Education
 - Eliminates “Over the shoulder” teaching scenario
 - ▶ Additional form of airway confirmation
 - ▶ Quality Improvement
 - ▶ Documentation
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Austere Environments



The Literature

▶ Difficult airways:

- 83.5% of the patients who had difficult laryngoscopy with Mac DL, better visualization using the CMAC.
- DL C/L III or IV improved to grades I or II with Glidescope
- C/L grades obtained with McGrath are the same as or better than the views obtained with direct laryngoscopy.
- McGrath obtained C/L I or II despite at least two criteria predicting poor views.
- AWS gave better views vs. Mac DL. C/L III or IV became grades I or II.
 - Acta Anaesth Scand. 54(9). 1050–1061
 - October 2010. [Review 17 articles]

The Literature

- ▶ C-spine alignment
- ▶ 11.8° VL vs. 14.3° DL (p=0.045)
 - Max angle 19.2° vs. 29.3°
 - Experienced physicians angle deviation 10.3° vs. inexperienced physicians 12.8° (p=0.019).
 - VL did take longer
 - 3 patients unable to intubate with DL accomplished with VL
- Journal of EM, 44(4). 750–756
 - April 2013

The Literature

- ▶ Time to intubation
 - ▶ Better view of the glottis
 - ▶ Similar success rate [rate ratio 1.0; 95% confidence interval (CI) 0.99–1.01]
 - ▶ Time to tube was not different VL vs. DL (mean difference 0.19; 95% CI –0.37–0.75)
 - ▶ VL shortened time for “difficult intubation” (mean difference –0.75; 95% CI –1.24 to –0.25)
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- ▶ Eur J Anaesth. 28(11). 788–95
 - ▶ Nov 2011 [Review 11 trials]

The Literature

- ▶ Success and complication rates
- ▶ ICU, “urgency, uncontrolled setting, comorbidities, and variability in expertise of operators”
- ▶ Glidescope vs. DL
- ▶ 1st attempt success 74 vs 40%
- ▶ All DL failures intubated with VL, 82% on 1st
- ▶ Esoph placement 7% DL
- ▶ No difference in aspiration, desat, hypotension
 - ▶ Crit Care Med. 43(3):636–41
 - ▶ Mar 2015, 153 prospective randomized

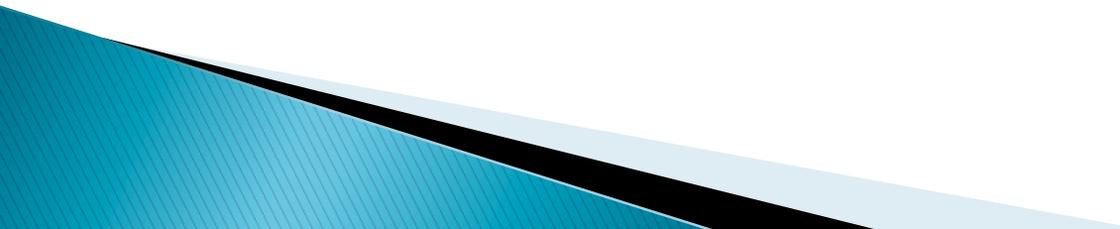
The Literature

- ▶ Use in the field
- ▶ 212 patients randomized, DL vs. VL (Airtraq)
- ▶ Anesth or EM physicians
- ▶ 47% (VL) vs. 99% (DL), $p < .001$
- ▶ VL failures intubated on 1st attempt DL (54/56)
- ▶ “clinical learning process of the Airtraq laryngoscope is much longer than reported”
 - ▶ Crit Care Med. 39(3):489–93
 - ▶ Mar 2011

The Literature

- ▶ Use in the field
- ▶ 514 field intubations, suburban EMS system
- ▶ DL vs VL (King Vision)
- ▶ overall success (64.9 vs. 91.5%, $p < 0.01$)
- ▶ first-pass success (43.8% vs. 74.2%, $p < 0.01$)
- ▶ Prehosp Emerg Care
 - ▶ Epub Apr 2015

Warning:

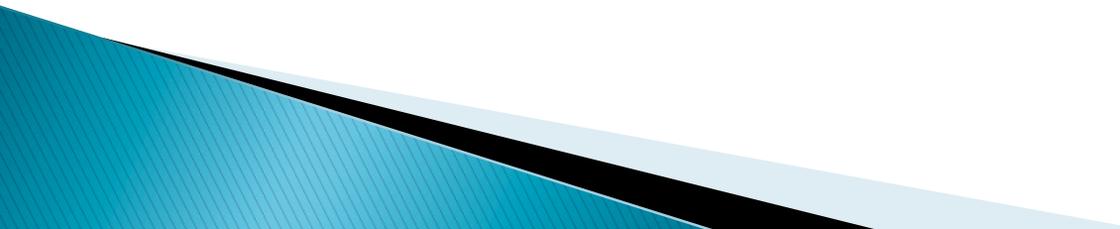
- ▶ The following images may cause:
 - Holding one's head and neck in awkward positions
 - Breath holding
 - Tachycardia
 - Chest pain
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Video Laryngoscopy

- ▶ Quality Improvement

- ▶ Documentation

Video Laryngoscopy

- ▶ Improves glottic view and decreases cervical manipulation.
 - ▶ May decrease time to tube with experienced provider, especially in difficult airways.
 - ▶ May replace DL as gold standard.
 - ▶ Educational and quality improvement tool.
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Thank you!

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