

VIDEO VS. DIRECT LARYNGOSCOPY: ASSESSMENT OF THE FIRST 100 DAY RUN-IN

PERIOD FOR EMS



Mark E.A. Escott , Guy R. Gleisberg, Kevin Traynor, Levon Vartanian, Brett J. Monroe, Michael G. Gonzalez
Baylor College of Medicine / EMS Collaborative Research Group
Participating EMS Agencies: Cypress Creek EMS and Montgomery County Hospital District



BACKGROUND:

Video Laryngoscopy (VL) utilization is becoming more frequent within the prehospital setting. A paucity of literature exists comparing video laryngoscopy success rates to direct laryngoscopy (DL) as the primary technique for intubation by Emergency Medical Services (EMS).

OBJECTIVE:

To compare the view during laryngoscopy and first-attempt success rates (FASR) with DL and VL as the primary method of intubation in the prehospital environment.

METHODS:

This prospective study includes consecutive intubations between March 18 - June 26, 2013 employing a standardized protocol. The King Vision® Video Laryngoscope (KVL) was utilized as the primary device with DL as back-up within two suburban EMS systems on 50% of the ambulances and rotated monthly. FASR, Cormack-Lehane (C-L), Percentage of Glottic Opening (POGO), and primary failures (PF), were recorded.

RESULTS:

A total of 155 intubations with 84 KVL (54%) were performed by 118 paramedics who had a mean experience with DL of 9 years, and 0.25 years with KVL. FASR: KVL 60(71%) and DL 48(68%) (95% CI: - 0.107- 0.185). C-L grade I or II view: KVL 65(77%) and DL 42(59%). POGO scores of $\geq 80\%$: KVL 61(73%) and DL 34(71%). Most frequent PF: DL 8(42%) inability to expose vocal cords and KVL 9(38%) Secretions / Blood / Vomit.

Chart 1. Intubation Position

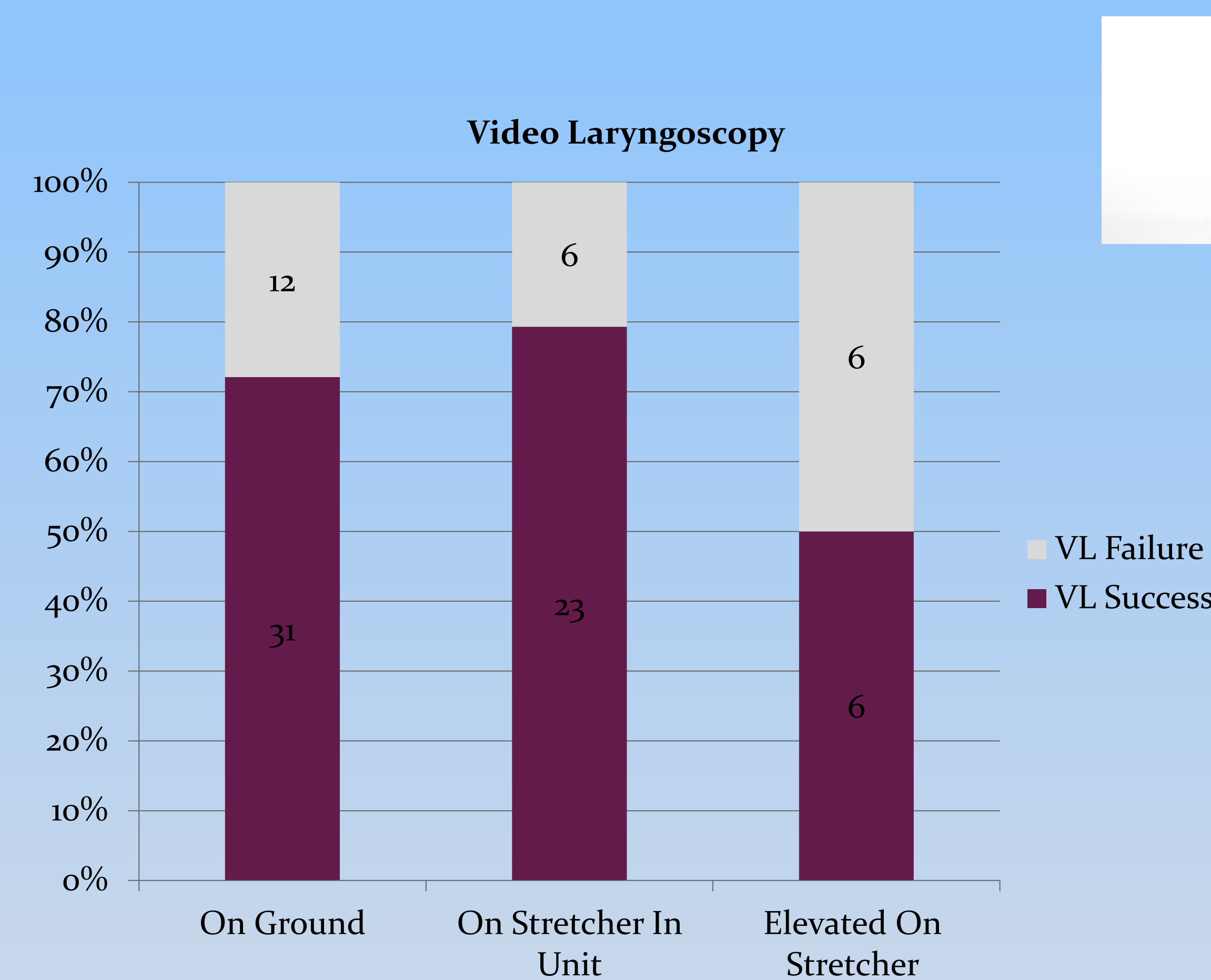
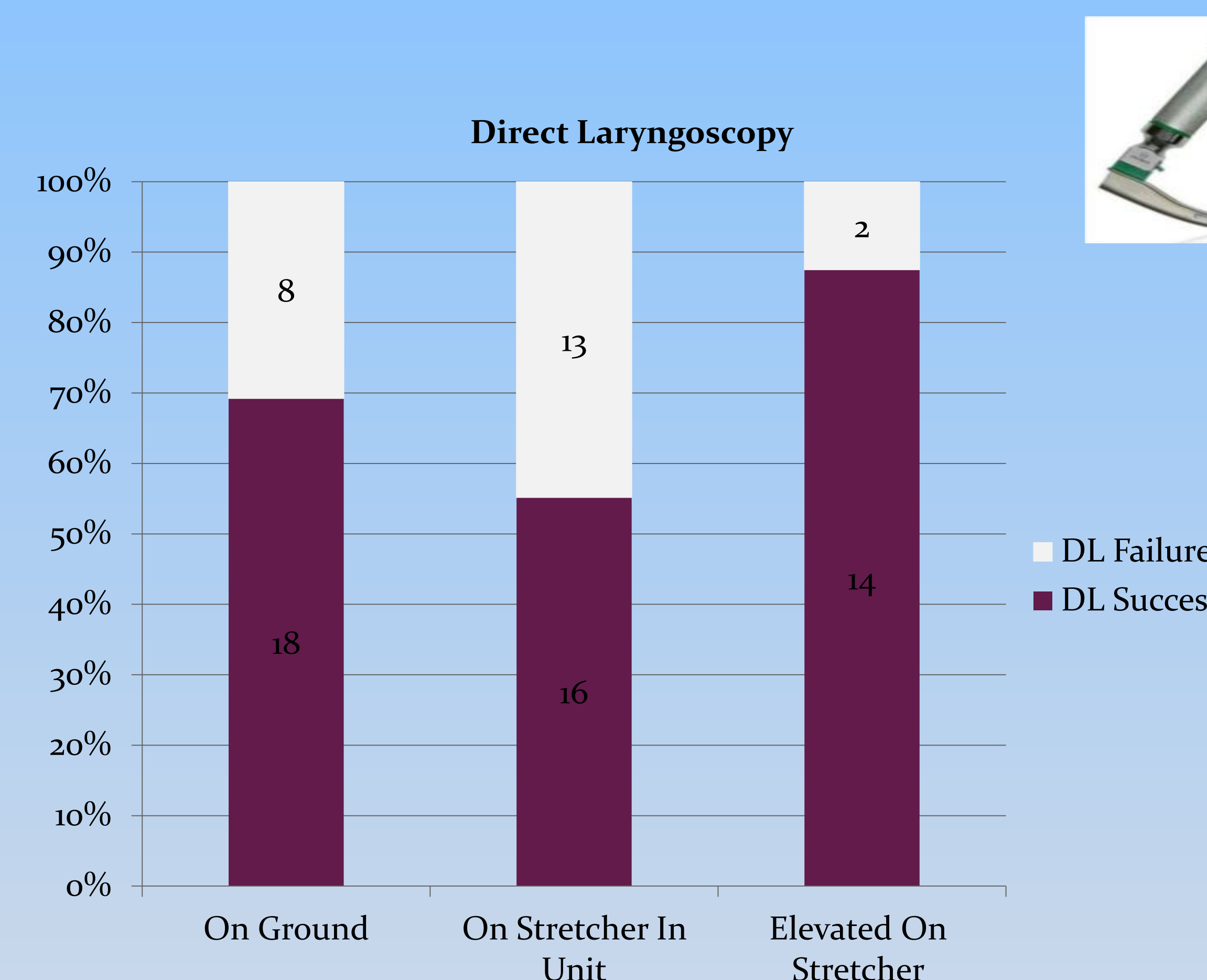


Chart 2. Intubation Position



Key Points

- ❑ 180 paramedics received four hour didactic, trouble-shooting and performed over 2520 KVL training intubations attempts on both Laerdal AT Kelly Torso and Levitan Series manikins.
- ❑ Paramedics completed weekly manikin competency training on both VL and DL during this period.
- ❑ VL was successfully utilized on two FBAO patient cases.
- ❑ Another key point to the study

CONCLUSIONS:

During the first 90 days of the run-in period, the paramedics were able to achieve equivalence in FASR with the novel device (KVL). Further studies are warranted to evaluate KVL as a primary technique for intubation in the prehospital setting following a run-in period.

LIMITATIONS:

- ❑ Limited population / sample size
- ❑ Study Design

REFERENCES:

1. Sakles JC, Mosier JM, Chiu S, Keim SM. Tracheal Intubation in the Emergency Department: A comparison of Glidescope video laryngoscopy to direct laryngoscopy in 822 intubations. The Journal of Emergency Medicine. Vol. 42, No. 4, pp, 400-405, 2012
2. Boedecker BH, Bosseau Murray W, Nicholas TA. Intubation using the Video Laryngoscope. American Medical Journal 3 (2): 67-74, 2012
3. Wang HE, Domeier RM, Kupas DF, Greenwood MJ, O'Connor RE. Recommended Guidelines For Uniform Reporting Of Data From Out-Of-Hospital Airway Management: Position statement of the National Association of EMS Physicians 2003