

**Comparison of Video Laryngoscope  
Using Miller or Macintosh Approach  
During Endotracheal Intubation.  
(VGHKS19-CT9-11)**

2022/09/06

## Methods

### *Patient*

The present study was approved by the Ethics Committee of the VGHKS (No.VGHKS19-CT9-11). All patients were recruited from the VGHKS between October 2019 to January 2022. All patient provided informed consent before being enrolled in the study.

Inclusion criteria was: [1] Aged>20 [2] Scheduled to received operation that required general anesthesia with endotracheal tube [3] ASA I, II. Patient with fallow condition would be excluded: [1] Emergent surgery [2] pregnant [3] Limited mouth opening [4] Poor dental condition [5] Airway obstruction (oral tumor, hypopharyngeal cancer....etc) [6] Deep neck infection [7] Allergic to any anesthetic agent.

### *Anesthesia protocol*

After the patient entered the operating room, monitor would be setup with electrocardiogram, non-invasive blood pressure, oxygen saturation, end-tidal carbon dioxide (PEtCO<sub>2</sub>). Intravenous access would then be established. Induction would be started right after setting the patient to sniff position and well pre-oxygenated. Endotracheal tube selection would fallow rules as below: Inner diameter 7.0mm for female patient, 7.5mm for male patient. As nasal endo, Inner diameter 6.5mm for female patient, 7.0mm for male patient. As Double lumen endotracheal tube 35 Fr for female patient, 37 Fr for male patient. Adjusted by patient's height as physician's clinical experience. Fentanyl 1-2 ug/kg, propofol 1.5-2mg/kg, rocuronium 0.6-1mg/kg or cisatracurium 1-2 mg/kg were administered intravenously as induction agent. Intubation was performed 3 minutes after muscle relaxant injection. Mechanical ventilation started right after the airway establishment.

During intubation, physician placed the tip of the video conventional Macintosh

blade at base of epiglottis to achieve glottic opening. Cormack-Lehane grade was then record as conventional attempt. Then physician placed the tip of the blade under the epiglottis and lift it to achieve glottic opening. Cormack-Lehane grade was record as Miller's attempt. Also, increased lifting force, BURP maneuver would be record if applied. If both attempts failed to intubate the patient, the process would switch to emergent difficult airway protocol and the patient would drop out the research. Three physicians attended this research had experience of anesthesia for 4, 6, 15 years with success intubation experience > 300+ cases.

### *Statistics*

The patient data were presented as frequency and percentage for categorical variables or mean and standard deviation for continuous variables. The Cormack-Lehane grading during Miller versus Macintosh approaches was compared using the McNemar-Bowker test. The test was 2-tailed and  $P < 0.05$  was considered statistically significant. Data analyses were conducted using SPSS 26 (IBM SPSS Inc, Chicago, Illinois).