Introduction: Pharyngolaryngeal adverse events when using the laryngeal mask airways (LMAs) can be >40%. These adverse outcomes are reduced by 70% if manometry is used to limit LMA intracuff pressure (<60cmH2O)(1). Routine use of manometers has not been widely adopted by anesthesiologists, and LMA intracuff pressures are commonly estimated by finger palpation of the valve pilot balloon. In this study, we determine the accuracy of finger palpation technique in different anesthesia personnel.

Methods: Eighty patients undergoing general anesthesia with the LMA were prospectively recruited. After induction of anesthesia, LMA ProSeal was inserted and the cuff inflated with a recommended volume of air. For each patient, the senior and junior anesthesiologists, and one anesthetic nurse assistant were asked to independently estimate LMA intracuff pressure by finger palpation technique. The actual intracuff pressure was subsequently obtained using a manometer and adjusted to 60cmH2O for patient safety. Estimated versus actual intracuff pressures were correlated using Pearson’s test.

Results: Scatter-plot correlation for anesthetic nurse assistant, junior, and senior anesthesiologists is reflected in Figure 1; with strength of association R values of 0.21 (weak), 0.35 (moderate), and 0.78 (strong) respectively. The difference between the actual and the estimated intracuff pressures are 15.6±25.4, 12.8±24.4, and 2.5±16.2cmH2O respectively. Anesthesiologists with >3yrs of experience were more accurate than those <3yrs of experience (3.7±17.4 vs. 19.1±26.9cmH2O, p<0.001).

In all groups, the palpation technique tends to underestimate the actual intracuff pressure by a mean pressure of 10.3cmH2O. The palpation technique accuracy correlated poorly when actual intracuff pressures were >80cmH2O.

Discussion: Senior anesthesiologists are more accurate than nurses and junior anesthesiologists at estimating LMA intracuff pressures. Anesthesia personnel tend to underestimate intracuff pressures, especially when the pressures are high, putting patients at risk of postoperative pharyngolaryngeal adverse events. Manometry should be recommended as standard of care for LMAs.
