



# Accuracy of Different Ultrasound Techniques for Confirmation of Laryngeal Mask Airway Placement

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## Background and Goal of Study:

Laryngeal mask airway (LMA) is frequently misplaced because of anatomical differences in children's airway. Our aim was to assess the feasibility of different ultrasound (US) techniques for confirmation of correct placement of LMA and their correlation with fiberoptic laryngoscopy (FOL).

## Materials and Methods:

After receiving local ethic committee approval and written informed consent was obtained, 50 consecutive children (1- 12 ages) were included in this prospective, observational study.

After anesthetic induction, the position of the LMA was assessed by US in 4 transverse planes (at the level of just above the hyoid bone, the pharynx, the larynx, and upper end of the esophagus) and confirmed with leakage test at 20 cm H<sub>2</sub>O and fiberoptic laryngoscopy (FOL). LMA rotation grade was performed by FOL. The symmetry of the arytenoid cartilages and cuff shadows at the tongue base level and pharynx according to the midline was graded as 0 to 3 by US. Also, whether the LMA cuff tip is in the esophagus were evaluated. We tested relationship between FOL LMA rotation grade and sonographic parameters by Spearman's correlation coefficient.  $P < 0.05$  was considered statistically significant.

## Results and Discussion :

On FOL, the incidence of LMA rotation was 62% and the LMA reinsertion was % 6.

There was a high correlation between FOL-LMA rotation grade with US examination of arytenoid cartilages ( $R=0,791$ ,  $p<0,05$ ) and the asymmetrical cuff shadows ( $R=0,67$ ,  $p<0,05$ ).

Detecting LMA cuff tip in the oesophagus did not correlate with FOL- LMA grade ( $R=0,123$ ,  $p>0,05$ ).

## Conclusions:

US examination is noninvasive and as effective as a fiberoptic examination in detecting a rotated LMA even if it is positioned at proper depth.

Further detailed studies are required to compare the different US techniques for confirmation of correct placement of LMA.