

Despite the common use of laryngeal mask in paediatric anaesthesia, there are few radiological studies evaluating the correct fitting of the device into the glottis.

Background and Goal of Study

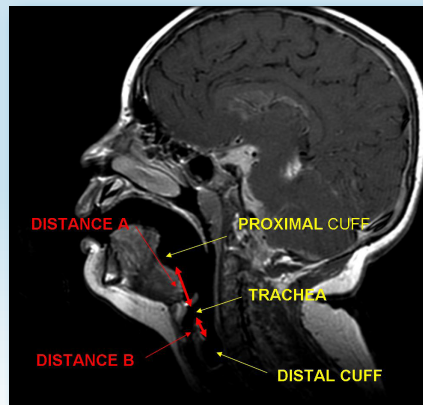
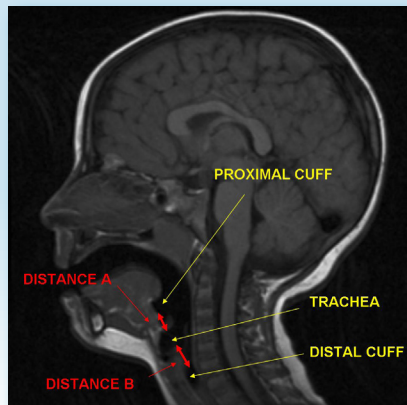
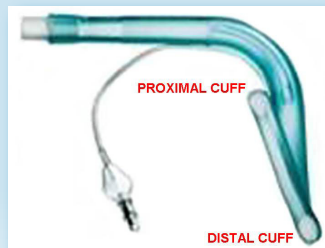
The object of the study is to carry out a radiological evaluation of the correct placement of laryngeal masks in paediatric patients, correlating clinical parameters as the seal pressure and first attempt success, with radiological images (NMR).

Materials and Methods

The study included 114 patients ASA I and II, 4 months to 10 years of age, scheduled for cranial NMR. Under general anaesthesia with sevoforane, an AMBU Aura Once Laryngeal Mask™ was placed. The size was chosen according to the patient's weight. No muscle relaxant was used. Seal pressure and introduction attempts were re-

gistered. Abnormalities with spontaneous breathing or ETCO₂ wave form was considered as incorrect positioning of the mask and it was removed.

Radiological images obtained in NMR were evaluated, calculating distances from proximal and distal cuff to trachea (Fig 1).



Results

The results are showed on table 1.

	Group 1 (ML 1)	Group 2 (ML 1½)	Group 3 (ML 2)	Group 4 (ML 2½)
n	10	20	46	38
Weight (kg)	4,5±1,88	7,65±1,73	13,64±2,55	22,88±4,05
Age (m)	3±2	9±8	36±15	63±22
1 st introduction success	100%	95%	93%	94%
Radiological displacement	60%	30,7%	14,03%	3,22%
Seal Pressure (mmHg)	21±1	21,5± 4,3	22,1 ± 4,9	23,7± 3,0

Fitting of laryngeal mask rate was evaluated (radiological displacement: rad dis) measuring distances from the proximal and distal cuffs to trachea. Correct fitting percentage lowers, as we diminish the size of the mask. This may be caused by the anatomical differences between newborns and older children, such as larger tongue, shorter glottis, that makes correct fitting more difficult.

In our study, first attempt introduction was higher than 95% and seal pressures achieved with AMBU laryngeal mask was within clinical normal values. However, clinical parameters (seal pressure, easy introduction) do not exclude mask displacement and in our study no clinical differences were found between displaced laryngeal masks and the correctly fitted ones.

Conclusion(s)

Incorrect fitting of laryngeal masks is common in clinical practice. Clinical parameters can remain normal even though laryngeal mask can be displaced. Small sizes of laryngeal masks have higher rates of displacement than larger ones. More studies are needed to evaluate this findings.

References

- Gaku Inagawa, Koji Okuda, Takaaki Miwa, Koichi Hiroki. Higher airway seal do not imply adequate positioning of laryngeal mask airways in paediatric patients. Paediatr Anaesth 2002, 12:322-26