

Evaluation of the pH of secretions in the hypopharynx during gynaecological laparoscopy. Is the use of a laryngeal mask airway safe?

Neiva Lemos J.¹, Dantas de Pereira Cardoso H.E.¹, Dantas Cardoso Neiva Lemos L.², Carvalho L.R.³, Pinheiro Módolo N.S.¹

¹Faculdade de Medicina de Botucatu, UNESP – Universidade Estadual Paulista, Department of Anaesthesiology, Botucatu, Brazil, ²Bahia School of Medicine and Public Health (EBMSP), Research and Development Department, Salvador, Brazil, ³School of Biosciences - UNESP, Botucatu, Brazil.

Background and Goal of Study

We evaluated the safety of using a ProSeal laryngeal mask airway during gynaecological laparoscopy, assessing the risk of regurgitation of gastric contents by measuring the pH of secretions in the hypopharynx during the anaesthetic/surgical procedure.

Materials and methods:

In total, 80 patients were evaluated who were under general anaesthesia for gynaecological laparoscopy in which airway access was maintained using a ProSeal laryngeal mask airway. Secretions in the hypopharynx were collected by aspiration using an oesophageal drainage tube to measure their pH at various times during the anaesthetic/surgical procedure. We used pH test strips, pH 2-9 (Merck, Darmstadt, Germany), and in case of any doubts, a pH meter was also used. A pH of ≤ 4.0 was considered positive for the regurgitation of gastric contents.

Results and discussion:

None of the pH measurements of analysed secretions in the hypopharynx had a pH of ≤ 4.0 . The mean pH of the secretions varied from 6.34 for the lower means to 6.50 for the higher means when measured at different time points, which are comparable to the normal pH of saliva.

References:

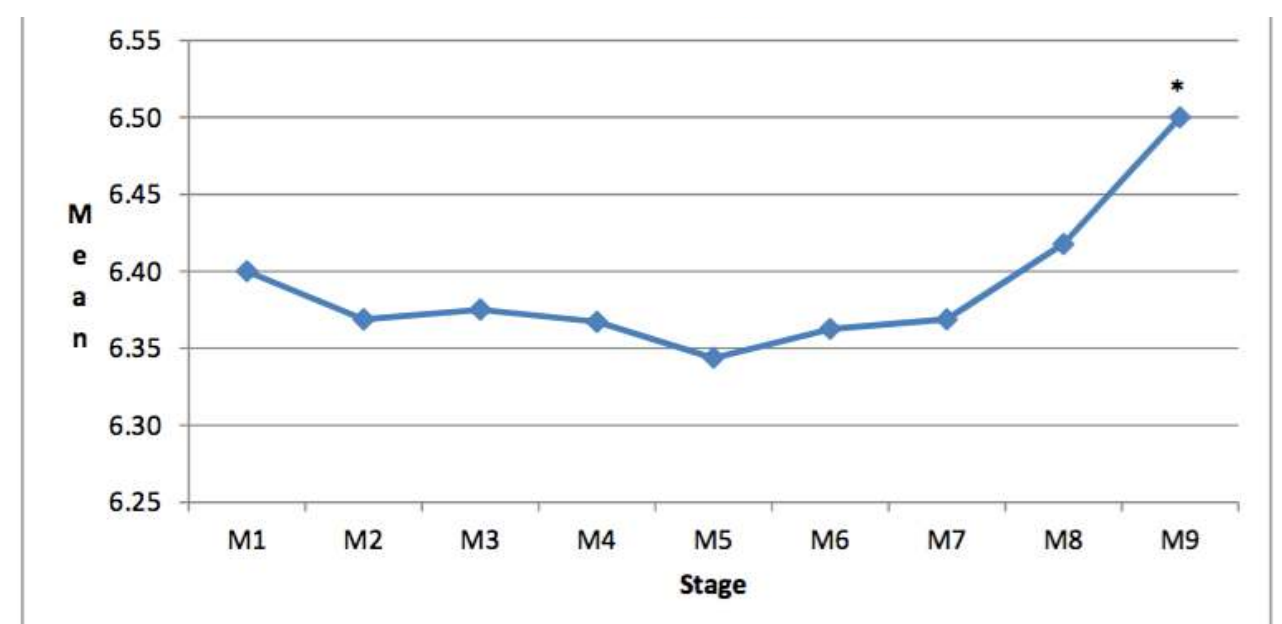
- 1) Brain AIJ, Verghese C, Strube PJ. The LMA 'ProSeal' - a laryngeal mask with an oesophageal vent. *Br J Anaesth* 2005; 49: 275-80.
- 2) Cook TM, Lee G, Nolan JP. The ProSeal™ laryngeal mask airway: a review of the literature. *Can J Anaesth* 2005; 52: 739-60.
- 3) Ambi U, Koppal R, Joshi C, Prakashappa DS, Iyer H. LMA Classic and LMA ProSeal: a comparative study in paralyzed anaesthetized patients. *J Clin Diagn Res* 2011; 5: 940-3.

Table 1. Median and 1st and 3rd quartiles in brackets for different variables, according to the patients' ASA classification. The times are given in minutes.

Variable	ASA		valor de p
	I (n=64)	II (n=16)	
Fasting time	657,5[517,5;800,0]	615,0[573,5;712,5]	0,87
Anaesthesia time	101,0[87,0;120,0]	110,0[95,0;127,5]	0,27
Surgery time	58,0[47,5;80,0]	69,0[55,5;88,0]	0,13
Pneumoperitonium time	38,0[28,0;55,0]	42,5[35,5;54,0]	0,32
Head-down time	34,0[24,0;47,5]	38,0[33,5;45,5]	0,31

There were no statistically significant differences between variables depending on the patients' ASA classification.

Fig. 1. Mean values of the pH according to the stage of surgery.



* M9 is significantly different from the other stages.

Conclusion(s):

From these results, we conclude that the ProSeal laryngeal mask airway is a safe alternative for anaesthesia during laparoscopic surgery for patients without risk factors for the regurgitation of gastric contents.