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Gastric distension and airway management during laparoscopic cholecystectomy comparing Ambu Aura Once LMA and endotracheal tube: a randomised study

BACKGROUND AND GOAL OF THE STUDY

The use of the laryngeal mask airway (LMA) for laparoscopic cholecystectomy is still indication with controversial data and study's results.
The goal of this randomized study is to compare Ambu Aura Once LMA and endotracheal tube with respect to intensity of gastric insufflation and distension in such indication.

MATERIAL AND METHODS

This was a prospective, single blinded study with 90 adult patients ASA I-II, scheduled for elective laparoscopic cholecystectomy, randomly allocated into two groups: ETT and Ambu Aura Once LMA group. Non fasted patients for 6 h, with BMI >30 kg/m^2 and with hiatus hernia or gastrooesophageal reflux were excluded. Following induction of anesthesia, airway devices were placed by a single experienced anaesthesiologist, without bag and mask ventilation before placing. Anaesthesia was maintained with sevoflurane in N_2O and oxygen ($FiO_2$0,3-0,4) with positive pressure ventilation.
In LMA group just seal intracuff pressure was used, with tidal volume of 6-7ml/kg. Standard non-invasive monitoring was applied. The surgeon, blinded to the type of airway, scored stomach size (0-10) at insertion and before of laparoscope removal. Any complications were recorded.

RESULTS AND DISCUSSION

Device placement was successful in all patients and adequate ventilation was achieved in both groups. Incidence and degree of change in gastric distension were similar in both groups (p=0.392), without disturbing surgical view. Mean oropharyngeal leak pressure in the LMA group was 22 cm H_2O and airway presure was similar in both groupe, up to 20 cm H_2O (p=0.811). There were not statistically significant differences between two groups for SpO_2 and $EtCO_2$.
No specific complications were noted.

			Groups		Total
			LM	ETT	
Gastric insuflation 5 min. after creation of pneumoperitoneum	**NO**	N°	**38**	**38**	**38**
		%	**84.4%**	**84.4%**	**84.4%**
	YES	N°	**7**	**7**	**7**
		%	**15.6%**	**15.6%**	**15.6%**
Gastric insuflation before CO_2 exuflation	**NO**	N°	**37**	**38**	**75**
		%	**82.2%**	**84.4%**	**83.3%**
	YES	N°	**8**	**7**	**15**
		%	**17.8%**	**15.6%**	**16.7%**

Ambu Aura Once LMA with serious selection of patients, in the hands of experienced anesthesiologist is an appropriate airway device in a such indication, confirmed in many previous works, even though consensus has not been reached yet.

CONCLUSION

A correctly placed and maintained by experienced anaesthesiologist, Ambu Aura Once LMA provides an efficient airway for positive pressure ventilation during laparoscopic cholecystectomy. Gastric distension occurs with equal frequency and intensity with either airway devices.

REFERENCES: Maltby JR, Beriault MT, Watson NC, Fick GH. Gastric distension and ventilation during laparoscopic cholecystectomy: LMA-classic vs. tracheal intubation. Canadian Journal of Anaesthesia. 2000; 47:622-6.
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