

A study of LMA versus tracheal tube for tonsillectomy surgeries at tertiary health care center

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Abstract

Background: worldwide WHO estimated that over 600 million people with a case of symptoms of tonsillitis occur annually i.e. 30% of world populations are effected by symptoms of tonsillitis In India it is estimated that approximately 7 sore throat episodes occur per child, there are 20-30 million cases of tonsillitis. **Aims and Objectives:** to study LMA versus tracheal tube for tonsillectomy surgeries at tertiary health care center. **Methodology:** This was a cross-sectional study carried out in the pediatric patients who needs Anesthesia for the surgery of tonsils at tertiary health care centre during the one year period i.e. June 2017 to June 2018. In the one year period there were there were 50 patients who needs tonsillectomy surgery, with written and explained consent were given general anesthesia with two different type of air way i.e. LMA (Laryngeal Mask Airway) and ETT (Endo-Tracheal Tube). The statistical analysis was done by unpaired t-test and analysed by SPSS 19 version software. **Result:** The mean age of ETA was 5.5 ± 2.81 Yrs. and LMA was 6.1 ± 1.92 Yrs. was comparable with each other ($p > 0.05$, $df=48$, $t=1.23$), the sex ratio in ETA group was 1.18 and 1.27 was comparable with each other. The surgical parameters like Surgical time(min) was comparable i.e. 39 ± 5.72 and 35.54 ± 3.87 ($p > 0.05$, $df=48$, $t=1.02$); Other parameters were significantly higher in RTA like Extubation time (min) 9.23 ± 5.39 and 4.12 ± 2.91 ($p < 0.01$, $df=48$, $t=6.72$); Total anesthesia time (min)- 81.12 ± 15.12 and 65.13 ± 10.12 ($p < 0.05$, $df=48$, $t=5.78$); PACU recovery time (min)- 94.12 ± 23.12 and 79.12 ± 12.14 ($p < 0.05$, $df=48$, $t=5.92$) **Conclusion:** It can be concluded from our study except surgical time Extubation time Total anesthesia time, PACU recovery time was significantly higher in ETT.

Key Word: LMA (Laryngeal Mask Airway), ETT (Endo-Tracheal Tube), PACU.

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INTRODUCTION

world wide WHO estimated that over 600 million people with a case of symptoms of tonsillitis occur annually i.e. 30% of world populations are effected by symptoms of

tonsillitis In India it is estimated that approximately 7 sore throat episodes occur per child, there are 20-30 million cases of tonsillitis¹ The tonsils are lymph nodes in the back of the mouth and top of the throat. They normally help to filter out bacteria and other germs to prevent infection in the body. Tonsillitis is inflammation (swelling) of the tonsils¹ It is necessary to prevent the tonsilitis in children because tonsillitis is very common in children who are between the age group of 5 to 15 years. It can affect young adults as well and in their case it may be called as glandular fever. Children come in contact with more In worldwide WHO estimated that over 600 million people with a case of symptoms of tonsillitis occur annually i.e. 30% of world populations are effected by symptoms of tonsillitis In India it is estimated that approximately 7 sore throat episodes occur per child,

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there are 20-30 million cases of tonsillitis. The tonsils are lymph nodes in the back of the mouth and top of the throat. They normally help to filter out bacteria and other germs to prevent infection in the body. Tonsillitis is inflammation (swelling) of the tonsils^{1, 2, 3} It is necessary to prevent the tonsillitis in children because tonsillitis is very common in children who are between the age group of 5 to 15 years. It can affect young adults as well and in their case it may be called as glandular fever.³ For a long time, the tonsillectomy operations were performed without anaesthesia, and general anaesthesia for adenotonsillectomies came into vogue around 1935. Two of the popular methods were the single dose method with ethyl chloride or nitrous oxide and ether insufflations of the oropharynx. Anaesthesia for tonsillectomies has evolved greatly to the present day with operations being performed under local as well as general anaesthesia. Airway management gained importance using endotracheal tube (ETT) or laryngeal mask airway (LMA) with either spontaneous or controlled ventilation, each technique having their own pros and cons. Post-operative pain and the incidence of nausea and vomiting

have been greatly reduced with improved techniques and the use of multimodal approaches.^{4,5} So, we have studied LMA versus tracheal tube for tonsillectomy surgeries at tertiary health care center

METHODOLOGY

This was a cross-sectional study carried out in the pediatric patients who needs Anesthesia for the surgery of tonsils at tertiary health care centre during the one year period i.e. June 2017 to June 2018. In the one year period there were there were 50 patients who needs tonsillectomy surgery, with written and explained consent were given general anesthesia with two different type of air way i.e. LMA (Laryngeal Mask Airway) and ETT (Endo-Tracheal Tube). All details of the patients like age, sex and post operative parameters like Surgical time(min), Extubation time (min), Total anesthesia time (min), PACU recovery time (min) etc. noted. The statistical analysis was done by unpaired t-test and analysed by SPSS 19 version software.

RESULT

Table 1: Distribution of the patients as per the age and sex

	ETA (n=25) (Mean±SD)	LMA (n=25) (Mean±SD)	p-value
Age	5.5 ±2.81	6.1 ± 1.92	p>0.05,df=48,t=1.23
Sex			
Male	12	11	p>0.05, X ² =0.08052, 1
Female	13	14	

The mean age of ETA was 5.5 ±2.81 Yrs. and LMA was 6.1 ± 1.92 Yrs. was comparable with each other (p>0.05,df=48,t=1.23) , the sex ratio in ETA group was 1.18 and 1.27 was comparable with each other

Table 2: Distribution of the patients as per the various parameters

Parameter	ETA (n=25)	LMA (n=25)	p-value
Surgical time(min)	39 ± 5.72	35.54 ± 3.87	p>0.05,df=48,t=1.02
Extubation time (min)	9.23 ± 5.39	4.12 ± 2.91	p<0.01,df=48,t=6.72
Total anesthesia time (min)	81.12 ± 15.12	65.13± 10.12	p<0.05,df=48,t=5.78
PACU recovery time (min)	94.12 ± 23.12	79.12 ±12.14	p<0.05,df=48,t=5.92

The surgical parameters like Surgical time(min) was comparable i.e. 39 ± 5.72 and 35.54 ± 3.87 (p>0.05,df=48,t=1.02); Other parameters were significantly higher in RTA like Extubation time (min)9.23 ± 5.39 and 4.12 ± 2.91 (p<0.01,df=48,t=6.72) ; Total anesthesia time (min)- 81.12 ± 15.12 and 65.13± 10.12 (p<0.05,df=48,t=5.78); PACU recovery time (min)-94.12 ± 23.12 and 79.12 ±12.14 (p<0.05,df=48,t=5.92)

DISCUSSION

Use of the reinforced laryngeal mask airway (LMA) and endotracheal intubation (ETT) are both accepted standards of care used to ensure adequate ventilation during a variety of surgical procedures.⁶ However, numerous differences between these two modalities exist and have been characterized in the literature. For outpatient procedures, the reinforced LMA decreases the use of nondepolarizing muscle relaxants and as a result

may avoid possible side effects, such as prolonged muscle paralysis or the need for reversal agents such as atropine, glycopyrrolate, or neostigmine. Other advantages of the LMA include avoidance of stimulation of the larynx and vocal cords, which reduces cardiovascular and respiratory reflexes,^{5,6} obviation of the need for laryngoscopy, elimination of risks of endobronchial or esophageal intubation, decreased use of intraoperative fentanyl,⁷ and improvement in various postoperative outcome

parameters, such as sore throat,^{5,6} cough,^{3,4,6-9} desaturation,^{4,8,9} bronchospasm,⁵ postoperative nausea,⁷ laryngospasm⁵⁻¹³ pain¹¹ stridor⁵⁻¹³ and hoarse voice.¹⁰ Some studies have also suggested lower cost,⁹ reported decreases in intraoperative anesthetic requirements,¹⁴ and shown decreased time required in the operating room,¹¹ during recovery,⁹ during intubation,⁸ and during extubation.¹³⁻¹⁵ Disadvantages of the LMA have also been reported, including trouble visualizing the surgical field, as well as leaking or kinking, which lead to difficulty ventilating, problems with oxygenation, and high rates of abandonment of the LMA in favor of the ETT.^{11,15,16} In our study we have seen that The mean age of ETA was 5.5 ± 2.81 Yrs. and LMA was 6.1 ± 1.92 Yrs. was comparable with each other (p>0.05,df=48,t=1.23), the sex ratio in ETA group was 1.18 and 1.27 was comparable with each other. The surgical parameters like Surgical time(min) was comparable i.e. 39 ± 5.72 and 35.54 ± 3.87 (p>0.05,df=48,t=1.02); Other parameters were significantly higher in RTA like Extubation time (min) 9.23 ± 5.39 and 4.12 ± 2.91 (p<0.01,df=48,t=6.72); Total anesthesia time (min)- 81.12 ± 15.12 and 65.13 ± 10.12 (p<0.05,df=48,t=5.78); PACU recovery time (min)- 94.12 ± 23.12 and 79.12 ± 12.14 (p<0.05,df=48,t=5.92) These findings are similar to Angela Peng¹⁷ they found Incidence of postoperative laryngospasm between LMA (12.5%) and ETT (9.6%) was similar (P=.77). In 10 patients, the LMA was changed to ETT intraoperatively owing to tube kinking or difficulty with visualization. Mean (SD) surgical times for LMA and ETT groups were 33.35 (13.39) and 37.76 (18.26) minutes, respectively (P=.15). Time from surgery end to extubation was significantly shorter in patients who used LMA (P=.01) by 4.06 minutes. There were no differences (P=.49) in postanesthesia care unit recovery times

CONCLUSION

It can be concluded from our study except surgical time Extubation time Total anesthesia time, PACU recovery time was significantly higher in ETT.

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