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RESEARCH ARTICLE

LARYNGEAL MASK AIRWAY FOR MINOR ORAL SURGICAL PROCEDURES: A CLINICAL STUDY.

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Laryngeal mask airway (LMA) has been used for many surgical procedures by the anaesthetist in general surgical procedures. It is seldom applied for oral surgical procedures. In this study we have used LMA for common minor oral surgical procedures. A total of 30 patients who required short oral and maxillofacial surgical procedure of all age group were included. Pre anaesthetic evaluation and physician fitness, as required was taken. Time taken for insertion was noted. Duration of surgery from the time of laryngeal mask airway insertion till the removal of laryngeal mask airway was recorded for all cases. Post operative dysphagia and dysphonia was evaluated by visual analogue scale and ease of placement also was evaluated with visual analogue scale. For most of the cases time taken for insertion of LMA was between 120 to 150 seconds. Only one case took around 4 minute of time for insertion and 3 cases took more than 1 hour duration for surgery. There was mild dysphagia and dysphonia after 24 hours and no other related complications were noted. Final conclusion of this study was that LMA can be used in minor oral surgical with minimal complications.

*Copy Right, IJAR, 2016.. All rights reserved.***Introduction:-**

The laryngeal mask airway (LMA) is a device for anesthetic air way. The mask airway was designed by Brain. The goal of its development was to create an intermediate form of airway management between face mask and endotracheal tube¹. Despite wide spread use the definitive role of the laryngeal mask airway is yet to be established in minor oral surgical procedures. The laryngeal mask airway (LMA) has been used successfully for various surgical procedures with fewer incidences of hypoxia and significantly better arterial oxygen saturation. LMA has been the subject of several comprehensive reviews. The popularity of the LMA stems from its perceived benefits over other airway devices and several studies have proven high success rate for the technique and low rate of complications². Difficulty in viewing the glottis is generally irrelevant for successful LMA placement, making it a useful substitute airway. The curved tube guides the instruments towards the glottis, making it a useful intubation aid. The laryngeal mask has a potential role in patients with difficult airways, including those with limited mouth opening³. The primary aim of this study was to assess the safety and efficacy of its use in minor oral surgical procedures. Secondary aims included the ease of placement of LMA and to access extent of dysphagia and dysphonia after LMA.

Material and methods:-

A total of 30 patients who required short oral and maxillofacial surgical procedure of all age group were included. This study was carried out in Department of Oral & Maxillofacial Surgery, Aarogya Hospital, Ghaziabad. Patients with ASA I group with Mallampati classification I were included. Informed consent was taken for minor oral and maxillofacial procedure to be performed under laryngeal mask airway. Pre anaesthetic evaluation and physician fitness as required was taken for the surgery to be performed under short general anaesthesia or conscious sedation with laryngeal mask airway. Various surgical procedures which were performed are listed in Table 1. Time taken for insertion was noted (Table 2). Duration of surgery from the time of laryngeal mask airway insertion till the removal was recorded for all cases (Table 3). Post operative dysphagia & dysphonia (Table 4 and 5) and ease of placement were evaluated with visual analogue scale (Table 6).

Results:-

The study group consisted of 30 patients (17 male and 13 female) who underwent minor oral surgical procedure with LMA. The major portion of minor oral surgical procedure performed was surgical removal of impacted tooth followed by incision and drainage of space infections (Table 1). The maximum time taken to insert LMA for any procedure was 4 minutes. Most of the procedures took less than 2.5 minutes for insertion (Table 2). All the procedures were finished within one hour; only 3 procedures took more than one hour (Table 3). Post operative dysphagia and physphonia was mild in 93.3% of the patients (Table 4 and Table 5) showing good tolerability of LMA. Regarding ease of placement more 90% of anaesthetist found it easy (Table 6).

List of tables:-

Table 1:- Surgical Procedure Distribution

Surgical removal of impacted tooth	15	50%
Cyst Enucleation	5	16.7%
Incision & drainage	6	20%
Excisional biopsy	3	10%
Surgical removal of peri-implant	1	3.3%

Table 2:- Time taken for insertion of LMA.

Time taken for insertion of LMA	NUMBER OF PATIENTS
Beetwen 90 sec to 120 sec (Time)	7
Between 120 sec to 150 sec (Time)	17
Beetween 150 sec to 210 sec (Time)	5
More than 240 sec (Time)	1

Table 3:- Duration of surgery.

Duration of surgery	NUMBER OF PATIENTS
Beetwen 30 minutes to 45 minutes	9
Between 45 minutes to 1 hour	18
More than 1 hour	3

Table 4:- Post operative discomfot after 24 hrs- dysphagia.

	Score	Patients	Percentage
Mild (1 –3)	2	28	93.3%
Moderate (4 – 6)	4	2	6.7%

Table 5:- Post operative discomfot after 24 hrs- dysphonia.

	Score	Patients	Percentage	Score	Patients	Percentage	Total
Mild (1 –3)	2	26	86.7%	3	2	6.7%	93.3%
Moderate (4 – 6)	4	2	6.7%				6.7%

Table 6:- Ease of placement according to visual analogue score.

	Score	Patients	Percentage	Score	Patients	Percentage	TOTAL
Mild (1 –3)	2	19	63.3%	3	9	30%	93.3%
Moderate (4 – 6)	4	2	6.7%				6.7%

Discussion:-

Laryngeal Mask Airway is a device for airway management during general anesthesia. It consists of a triangular mask with an inflatable cuff and a tube which is fused at a 30 degree angle to the mask and connects the mask to the

anesthetic circuit. It is available in assorted sizes that can accommodate from infants to adults. It is made of a soft medical grade silicone and autoclavable⁴. The LMA may offer the oral and maxillofacial surgeon a new airway device for use during general anesthesia in the office. In this study the use of the LMA in oral and maxillofacial surgery for short surgical procedures is discussed where endotracheal tube intubation was not necessary. During any oral surgical procedure under general anesthesia the primary concern is that the surgical site is in close proximity to the pharynx which renders the patient susceptible to airway obstruction and irritation. These factors can result in hypoxia. Although hypoxia is easily recognized with pulse oximetry and readily treated, it frequently requires interruption of the surgery and manipulation of the airway. The primary advantage of LMA includes the ability to obtain, secure and maintain a patent airway during general anesthesia. It is passed beyond the tongue to form a seal with the larynx. This helps in induction, maintaining and emergence from general anesthesia. Maintenance of a patent airway with fewer episodes of oxygen de-saturation has been demonstrated for the LMA as compared with the face mask⁵. Other advantages include avoidance of muscle relaxants, avoidance of laryngoscopy, decrease postoperative myalgias. In this study also for most of the patients LMA placement was accomplished without use of muscle relaxants. This was similar to findings of Hickey S et al who suggested that placement of LMA can be accomplished without muscle relaxants⁶. According to Wilkins CJ et al when compared with an endotracheal tube, the anesthetic requirement for tolerance of the LMA was less⁷. Similar findings were seen in our study too. The LMA was well tolerated, with a lower reported incidence of hyperactive respiratory occurrences (e.g. coughing, laryngospasm, breathholding). The anatomic placement of the LMA, with its lack of impingement on the trachea and vocal cords, minimizes complications that are potentially associated with intubation. According to Swarm DG et al incidence of postoperative sore throat as well as hoarseness is less with the LMA compared with the endotracheal tube⁸. In our study we observed post operative complications of dysphagia and dysphonia was mild based on VAS.

If decreased ventilation occurs with the LMA, assisted or controlled ventilation is possible without interrupting the surgery. The LMA is an excellent barrier against aspiration of saliva and blood within the surgical field^{9, 10}. A pharyngeal curtain is recommended to minimize the possible aspiration of surgical debris (e. g. tooth fragments) when the LMA is removed. Placement of the pharyngeal curtain does not result in obstruction because the airway is secure. Regurgitation and aspiration have been reported with the use of the LMA. The incidence of regurgitation associated with the use of the LMA varies from 0% to 23%, which is comparable to the incidence of regurgitation associated with general anesthesia administered by other techniques. According to Barnett R et al the primary disadvantage and greatest concern with the use of the LMA is the inability to isolate the airway and to protect against the risk of aspiration¹¹. However, much of the literature concerning regurgitation and aspiration with the LMA is now recognized to be of questionable scientific design. These early reports were most likely inflated because of variables such as poor patient selection and patient position during the procedures. In our study we have not observed the incidence of regurgitation and aspiration with the LMA. 20 to 30 mL of regurgitated fluid was observed in few cases within the shaft of the laryngeal mask airway which is not a significant risk for aspiration¹². The placement of the LMA is dependent on mouth opening and passing the airway along the posterior wall of the pharynx. An inability to open the mouth or an infection or pathologic abnormality within the oral cavity or pharynx, can interfere with the use of the LMA. In our study we observed duration of insertion of LMA was higher in patients with space infection. LMA had been used for maxillofacial surgery, including adenotonsillectomy, cleft palate repair, and dentoalveolar surgery. The LMA, with its advantages over both the face mask/nasal hood and endotracheal intubation, potentially has a place in oral and maxillofacial surgery by increasing the safety and efficacy of outpatient general anesthesia in specific situations has been indicated in these studies. In our experience, the laryngeal mask airway provides a secure and protected airway that does not interfere with prolonged surgery. In our study we observed laryngeal mask airway insertion procedure is easy accounted by anaesthetist based on VAS (visual analogue scale).

Conclusion:-

LMA can be used in most of the minor oral surgical procedures. It can also replace the use of endotracheal intubation in short general anesthesia cases or cases require sedation.

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