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ЭФФЕКТИВНОСТЬ НОЧНОЙ ИНТУБАЦИИ ПРИ ОПЕРАЦИЯХ ПО ПОВОДУ РАКА ОРГАНОВ ПОЛОСТИ РТА – РЕТРОСПЕКТИВНОЕ ИССЛЕДОВАНИЕ

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Аннотация

В послеоперационном периоде у больных со злокачественными новообразованиями челюстно-лицевой области трахеостомия является самым распространенным методом, обеспечивающим проходимость воздушных путей. Осложнения трахеостомии побуждают врачей выбирать альтернативные методы, такие как субментальная интубация трахеи. Литературные данные об альтернативных трахеостомии методах при операциях по поводу опухолей органов полости рта ограничены. **Цель исследования** – выяснить, является ли использование ночной интубации более безопасной и рентабельной по цене, можно ли считать её альтернативой трахеостомии. **Материал и методы.** Исследование включало 30 больных раком органов головы и шеи (23 мужчины и 7 женщин) в возрасте 34–80 лет, которым была произведена внутриротовая резекция органов полости рта в большом объеме и односторонняя или двусторонняя шейная диссекция. Учитывались следующие параметры: возраст, пол, локализация опухоли, тип шейной диссекции, применение мандибулотомии/мандибулэктомии, тип реконструкции, продолжительность пребывания в реанимации, среднее время пребывания в больнице и классификация Маллампати. Также велась регистрация послеоперационных осложнений, связанных с обеспечением проходимости дыхательных путей. **Результаты.** Ни один из 30 пациентов не нуждался в повторной интубации, и у них не возникало каких-либо респираторных дистрессов после экстубации. **Заключение.** Цель этого исследования заключалось в том, чтобы каждый хирург мог обдумать и взвесить свой выбор процедуры для конкретного больного и выступить в поддержку ночной интубации как эффективной альтернативы трахеостомии.

Ключевые слова: трахеостомия, ночная интубация, опухоли челюстно-лицевой области, послеоперационные осложнения.

EFFICACY OF OVERNIGHT INTUBATION IN ORAL ONCOLOGICAL SURGERIES A RETROSPECTIVE STUDY

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Abstract

Objective. In the post-operative period of maxillofacial oncological operations, tracheostomy is the most commonly used method for securing the airway. These untoward complications made practitioners choose

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alternative modalities like submental intubation, but literature support on alternatives to tracheostomy for oral oncologic cases is limited. The aim of this observational study is to ascertain whether the use of overnight intubation is a safer and cost-effective practice and if it can be considered an alternative to tracheostomy. **Material and methods.** 30 patients, 23 males and 7 females in the age group of 34–80 years who underwent treatment for head and neck cancer with major intraoral resection and a unilateral or bilateral neck dissection were included in the study. The following variables were recorded: age, sex, site of tumour, type of neck dissection, use of mandibulotomy/ mandibulectomy, type of reconstruction, duration of stay in ICU, mean hospital stay and Mallampati classification. Postoperative complications, associated with the airway, if any, were recorded simultaneously. **Results.** None of the 30 patients required re-intubation nor did they develop any respiratory distress post extubation. **Conclusion.** The purpose of this study is to raise the conscience of every surgeon to cogitate his/her choice of procedure for his/her patients and advocate the use of overnight intubation, as it is a virtuous alternative to tracheostomy.

Key words: tracheostomy, overnight intubation, maxillofacial oncology, postoperative complications.

In the post-operative period of maxillofacial oncological surgeries, tracheostomy has been the mainstay for securing the airway [1, 2]. However, tracheostomy has reported 8–45 % complications, such as bleeding, surgical emphysema, pneumothorax, tracheo-esophageal fistula, failure to decannulate, among others [2, 3–5]. As reported by Mortan et al, 45 % patients who undergo head and neck surgery requiring tracheostomy, suffer pulmonary complications [6]. Rao et al. [7] adjudicate tracheostomy as one of the major risk element for pulmonary complications. Ong et al. [8] observed 47 patients who underwent head and neck surgery with tracheostomy, 37 reported complications, though they were administered prophylactic antibiotics. Recently, as a part of the ERAS (enhanced recovery after surgery) programs, restricting the use of tracheostomy to selected cases has been emphasized [9]. Therefore, the practitioners choose alternative modalities like submental intubation to prevent the untoward complications. However, literature support on alternative to tracheostomy for oral oncologic cases is limited [10]. In this study, an alternate regime to tracheostomy was employed, by overnight intubation of patients postoperatively, with subsequent review for swelling the next morning, which may result in airway compromise, in the absence of which, an extubation was performed. Therefore, the aim of this observational study is to ascertain whether the use of overnight intubation is a safer and cost-effective practice and if it can be considered an alternative to tracheostomy.

Material and methods

30 patients, 23 males and 7 females in the age group of 34–80 years who underwent treatment for head and neck cancer with major intraoral resection and a unilateral or bilateral neck dissection were included in the study. The endotracheal tube was retained in situ and the patient was observed overnight in the Intensive Care Unit (ICU) without a tracheostomy. The following variables were recorded: age, sex, site of tumour, type of neck dissection, use of mandibulotomy/ mandibulectomy, type of reconstruction, duration of stay in ICU, mean hospital stay and Mallampati classification. Postoperative complications, associated with the airway, if any, were recorded simultaneously. Patients with a mean duration of hospital stay of 10 days (range 815 days), were considered.

Results

Thirty head and neck surgery cases, (23 males and 7 females) belonging to the age groups of 34–80 years with mean duration of hospital stay of 10 days (range 8–15 days) were taken into consideration. Table 1 shows the site of the tumour, table 2 shows Mallampati score, table 3 and 4 shows surgical intervention and neck dissection respectively and table 5 shows reconstruction technique used.

All the patients were intubated overnight nasotracheally. Nasal intubation using fibreoptic bronchoscopy wa s done for the patients with Mallampati Class 3 and 4. Post-surgery, the patients were kept intubated on fentanyl infusion for the first postoperative night. Dexamethasone 8 mg was administered intravenously at induction and 2 doses postoperatively, to all the patients. The next morning, a thorough examination of the site of resection, flap and the airway was done. The patients were extubated of the trachea. Thereafter, the patients were shifted to the Oral and Maxillofacial surgery ward, 4 hours after extubation when considered stable. None of the patients required re-intubation nor did they develop any respiratory distress. The patients also received saline nebulization 6th hourly for subsequent 2–3 days as well as chest physiotherapy, to avoid the clogging of upper and lower respiratory tract.

Discussion

Ensuing major intraoral resection and reconstruction, is the development of edema around the airway requisitioning the need for tracheostomy. Over the years, with the improvisation of surgical techniques and advances in anesthesia, surgeons started believing that tracheostomy could be replaced by overnight intubation with good patient compliance. Tracheostomy related complications are not uncommon [2, 5–10]. Chest infections being the most common among all [11]. It is a source of anxiety to patients and agony to their

Table 1

Depicts the site of the tumours

Site	Number of cases
Anterior tongue	4
Floor of the mouth	3
Mandible/ Alveolus	10
Buccal Mucosa	10
Maxilla	3

Table 2

Depicts Mallampati score

Mallampati score	Number of cases
Class 0	0
Class 1	4
Class 2	11
Class 3	12
Class 4	3

Table 3

Depicts Surgical technique used

Surgical Method	Number of cases
Composite Resection	15
Hemiglossectomy	4
Hemimandibulectomy with Wide Local excision	5
Segmental Resection	3
Subtotal maxillectomy	3

Table 4

Depicts Neck Dissection done

Neck Dissection	Number of cases
Functional Neck dissection (FND)	5
Radical Neck dissection (RND)	10
Supraomohyiod Neck dissection (SOHND)	15

Table 5

Depicts Reconstruction done

Reconstruction	Number of cases
Primary closure	2
PMMC	20
Nasolabial flap	6
Buccal pad flap and tongue flap	2

relatives or bystanders, and stands to be potentially life threatening, as well. It is noted that patients having tracheostomy-related complication spend a longer time in the ICU for recovery and thus have longer total hospital stay. Castling et al [2] reported that the patients who underwent tracheostomy spent a mean of 4 days in the ICU compared to other patients who spent a mean of 2 days. And the mean hospital stay was 25 days and 14 days for tracheostomy patients and other patients respectively. The mean duration of hospital stay for the patients included in this study was 11.5 days.

The routine use of tracheostomy remains undeterred even with the high complication rate. As per literature, considering the category of patients that were chosen for this study (neck dissection, major intraoral resection, reconstruction with a free flap) a surgeon would have chosen the mundane method of tracheostomy as a treatment choice. Results from this study have shown that the management of airway can be safely carried out by leaving the endotracheal tube overnight in the immediate postoperative period, as an alternative to tracheostomy. Additionally, not performing a tracheostomy has benefits of a minimized operation time and hospital stay, making it conducive for a quick recovery. Patients find it easier to cough, communicate and clear secretions sooner, evading any untoward risks and 8–45 % morbidity connected to tracheostomy [12].

In view of the cost effectiveness, with the economic benefits of not using intensive care unit following

surgery, the additional cost of prolonged time in the operating room, tracheostomy kit, extended hospital stay and if complications occur, the associated expenditure with a multitude of antibiotics can be reconsidered [2]. The occurrence of a complication further, increases the demand of the allied health science professionals. Certainly, if overnight intubation is given preference over routine tracheostomy, the opportunities for trainees will be narrowed. However, continuing the practice with an elaborate and invasive procedure (such as tracheostomy) while a less morbid alternative (overnight intubation) is available, would at the same time be unethical. Concurrently, it is undebatable that tracheostomy will still be needed for patients who require prolonged intubation for major head and neck cancer and some other major surgical procedures.

The data was collected retrospectively for this study, which could be regarded as a foible, but the quality of data handling was refined. No control group was designated as overnight intubation offered a safe alternative making tracheostomy unjustified at least in cases which did not require periods of long intubation postoperatively. A future study could be pursued with direct comparison between two groups, who have undergone routine tracheostomy and those who have not, thus generating more data and numbers to facilitate the study.

Conclusion

As surgeons, we should always contemplate over the routine procedures that we blindly follow while a less elaborate and less damaging alternative is available. Assessing the necessity of a surgical procedure should be a constant thought on the mind of a progressive surgeon with the highest precedence given to the wellbeing of the patient. Any procedure carried out should be clearly beneficial and the least invasive for the patient. At the end of this study, we strongly consider it wiser to carry out overnight intubation over tracheostomy.

The purpose of this study is to raise the conscience of every surgeon to cogitate his/her choice of procedure for his/her patients and advocate the use of overnight intubation, as it is a virtuous alternative to tracheostomy. We also suggest an assessment of each case individually for its requirement, rather than considering tracheostomy an automatic part of a patient's treatment plan. To conclude, mandatory unquestioned use of tracheostomy in every head and neck oncological case should be avoided and its use should be limited to the situations where overnight intubation is not feasible, prolonged duration of postoperative intubation is required or it is anticipated that return visits will be made by the patient.

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