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Original Research Article

The application of an oropharyngeal throat pack in maxillofacial surgeries in Marathwada region

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ABSTRACT

Background: The objective of the research was to investigate the utilization of oropharyngeal throat pack during maxillofacial surgeries at various institutions in Maharashtra.
Materials and Methods: A randomized prospective survey was conducted using a total of 139 anonymous questionnaires to investigate the utilization, attitudes, experiences, and mindsets of anesthesiologists (n = 53) and surgeons (n = 86). The study solely relied on questionnaire-based observations and did not involve any clinical research.
Results: 46.33% of individuals provided their responses. The utilization of Throat Pack (TP) is infrequent or non-existent among less than 33% of surgeons and slightly more than 33% of anaesthesiologists. Around 50% of the participating surgeons acknowledged being aware of 1 to 4 nonfatal adverse events. Notably, there exists a notable disparity in viewpoints concerning the removal of Throat Pack and the ultimate responsibility for its removal.
Conclusions: Throat packs are commonly employed in maxillofacial surgeries. Moreover, it seems that despite recent advancements, there might still exist a divergence of viewpoints among the surgical and anaesthesiology teams concerning specific responsibilities.

1. Introduction

Throat packs (TP) are frequently employed during oral and maxillofacial surgeries to prevent the potential aspiration of blood and tissue debris during the procedure, as well as during the extubation process. The absence of a TP could lead to severe complications, such as a complete blockage of the airway, which could have significant medical and legal consequences. The responsibility for the insertion and removal of TP, as well as the implementation of measures to prevent TP retention, remains a topic of debate without a clear consensus. [1–3]

The ingestion of blood is known to induce vomiting, while the aspiration of blood can result in inflammation, both of which may cause delays in hospitalization. Additionally, there is a lack of Indian data regarding the prevalence of TP usage, the incidence of adverse events associated with their use, and guidelines for preventing TP retention. Consequently, we conducted a cross-sectional survey to investigate the current practices and attitudes of Indian anesthesiologists towards the utilization of TP. The aim of this survey was to provide recommendations for best practices in order to minimize the occurrence of this complication.

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2. Materials and Methods

A collection of 17 questions, designed in a semi-structured format, was created using Google forms. From January 2023 to June 2023, this questionnaire was distributed through email and popular social media platforms such as WhatsApp, Instagram some through email's also [Annexure 1]. Employing the snowball sampling technique, individuals were encouraged to share the survey link with their contacts. To ensure participation, a weekly reminder containing the survey link was sent out, and the received responses were carefully analysed. It is important to note that this study solely relied on observational data gathered from the questionnaire, without involving any clinical research.

3. Result

A total of 300 anaesthesiologists were selected to participate in the survey by receiving a questionnaire. Out of these, 139 anaesthesiologists responded, resulting in a response rate of 46.33%. The majority of the participants, accounting for 56.2%, had more than five years of experience in the field of anaesthesia. Among the participants, 47.5% were employed by a government organization that did not involve teaching, while 26.6% were employed by a medical college. The remaining participants were associated with private institutions.

Among the respondents, 75 individuals, constituting 54% of the total, reported frequent usage of anaesthesia for oral and maxillofacial surgeries. It was found that 46.7% of the patients undergoing oral and maxillofacial surgery utilized throat packs, which amounted to 63 patients. Interestingly, a significant proportion of anaesthesiologists, specifically 70.5% (98 individuals), adhered to a specific institutional protocol for the insertion of throat packs.

Regarding the decision-making process for TP insertion, it was observed that a majority of surgeons and anaesthesiologists, accounting for 55.4%, engaged in discussions regarding the necessity of TP insertion. Furthermore, either individually or as a team, they took responsibility for the insertion in 41.6% of the cases. In terms of the type of throat pack used, ribbon gauze was the most commonly employed material, accounting for 54.7% of the cases. Paraffin-impregnated gauze followed as the second most frequently used material. (Figure 1)

During the procedure, the TP was inserted with the assistance of Magill forceps by 49.3% of the participants under direct laryngoscopic vision. However, it was observed that injuries to the tongue or frenum, which were often accompanied by uvular injuries, occurred during the insertion of the TP. Additionally, it was found that 64% of the patients utilized visual marking or labels on the anaesthesia machines to ensure the removal of the throat pack after the surgery. (Figure 2)

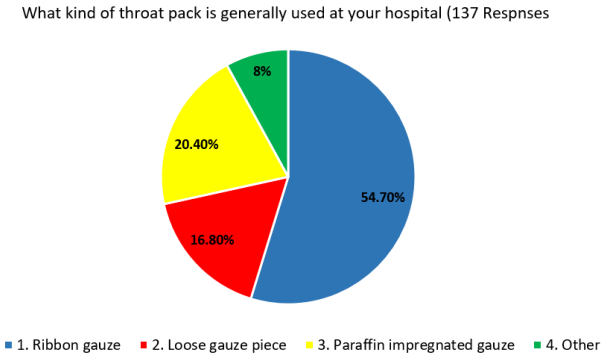

Figure 1: Types of throat pack used

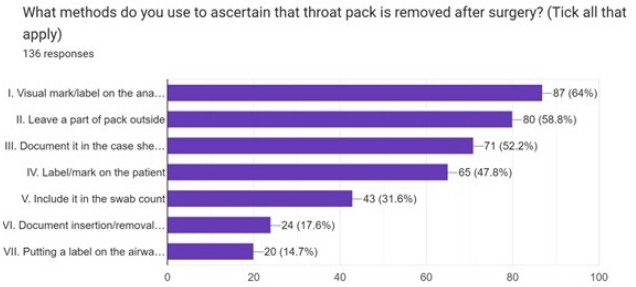

Figure 2: Methods to ascertain the throat pack

57 participants (42.2%) encountered Retained TP, mainly due to a surgeon or anaesthesiologist falsely asserting its removal. Another 62 participants (45.6%) experienced this issue due to a modification in the anaesthesia or operating team (43.4%). In 15.7% of instances, this led to airway obstruction in the days and weeks after the surgery, although it did not result in any fatalities.

4. Discussion

TP insertion is commonly employed in head and neck surgeries, with a prevalence ranging from 30-70% in routine oral surgeries.[2,3] However, our study revealed a higher utilization rate of TPs in oral surgeries (46.7%) than previously estimated. This finding aligns with the concerns expressed by anaesthesiologists regarding the risk of aspiration and their doubts about relying solely on patient positioning or airway devices to achieve the desired reinforcement with a TP.

Following endotracheal intubation, a TP serves as a pharyngeal tamponade by being placed in the posterior pharynx. Its purpose is to prevent the downward flow of secretions, blood, or tissue debris into the stomach or trachea.[1] While the majority of our participants believed that TP usage effectively prevents the entry of blood or secretions into the trachea, it has been demonstrated that pharyngeal packing does not offer complete protection.[4]

A variety of suggestions have been formulated to prevent the detrimental consequences of TP retention, yet over half of the individuals in our research sample followed a TP insertion protocol established by the institution.[1] As in the earlier study by Knepil et al., the majority of our study participants agreed that the either team was in charge of inserting the TP.[2]

The insertion of TP was most commonly performed using Magill forceps and either a direct laryngoscope (49.3%) or a video laryngoscope (39.2%). There is currently no conclusive evidence indicating the superiority of one method over the other, and the technique for TP insertion has predominantly been taught through instructional means. It is advised that the surgical "swab count" should include the TP, as recommended. Surprisingly, less than a quarter of the respondents (25%) adhered to this practice.[1] In line with the results of our investigation, previous studies have demonstrated that the placement of TP can lead to various complications such as throat pain, damage to the pharyngeal plexus, swelling of the tongue, and the development of ulcers. Numerous approaches have been explored to prevent complications associated with TP retention, including labelling on the patient's forehead, securing the pack to the airway device, leaving a portion of the pack outside the mouth, labelling on the anesthesia machine, and ensuring proper documentation in the case sheet.[3,5,6] Even with such precautions, incidents of retained TPs are frequently reported, especially when the designated personnel in charge of TP removal are not present.[3,7]

During oral surgery, it is possible for blood that has not been suctioned to pass through the nasopharynx and oropharynx. This blood may either drain into the stomach or seep past the cuff of the endotracheal tube and enter the airway. The reverse Trendelenburg position, which involves elevating the head of the bed, helps facilitate this drainage after the surgery. However, it is important to note that even with the use of cuffed tracheal tubes, there is no absolute guarantee of complete protection against aspiration.[8] It is assumed that pharyngeal packing will protect against blood and debris ingestion or aspiration during surgery.[9–12] Placing a pharyngeal pack is associated with postoperative pain in the throat.[13,14]

A potential modification to the anaesthesia chart and the WHO surgical safety checklist involves incorporating a designated section for the insertion and removal of TP. In response to the complications associated with retained TP, numerous institutions, as reported by our survey respondents, have adopted a comparable alteration in their institutional policies. Nevertheless, it is important to note that three national organizations have already issued consensus statements outlining the careful consideration and stringent precautions required for TP insertion.[15]

5. Conclusion

Our examination of the data from different perspectives demonstrates that there is a lack of consensus regarding the method for inserting and removing throat packs. To prevent unfavourable occurrences associated with the utilization of throat packs, it is crucial to adopt a standardized approach that involves effective communication among all parties involved and meticulous record-keeping.

6. Annexure I

The current protocols in place at the Government Medical Campus in Aurangabad pertaining to the utilization of throat packs during maxillofacial surgeries are under review.

It is imperative to carefully consider the provided information.

This survey aims to investigate the current practices of anaesthesiologists who perform maxillofacial surgeries at the Government Medical Campus in Aurangabad regarding the use of throat packs. Individuals with anaesthesia experience, such as consultants, senior residents, and junior residents, are invited to participate in this study. The survey is estimated to take approximately 10 minutes to complete. Participation in the study is voluntary, and all provided information will be treated as confidential. The analysis will be conducted using aggregated data. If you have any inquiries, please feel free to contact gavali.pankaj03@gmail.com via email.

After thoroughly reviewing the information provided in the participation information sheet, I have sought any necessary clarifications from the researcher. I acknowledge that my involvement in this survey is entirely voluntary, and I retain the freedom to withdraw from it at any point without the obligation to provide an explanation. By clicking on the "I Agree" button, I hereby consent to take part in this study.

1. Total experience of Anaesthesiology?
   (a) <5 years
   (b) 5-10 years
   (c) >10 years
2. The type of institution where the individual works
   (a) Government (non-teaching)
   (b) Private
   (c) Medical college
3. What is your frequency of oral, maxillofacial, and head and neck surgery?
   (a) On a regular basis (at least 5 times per month)
   (b) On occasion (2 times per month)
   (c) Infrequently (5-10 times per year)
   (d) Never, ever
4. Are there any guidelines or policies at your facility regarding the use of a throat pack during anaesthesia?

(a) Yes
(b) No

5. How frequently do you use throat packs in all of your oral surgeries?

(a) Always
(b) Sometimes
(c) Never
(d) As needed

6. Is the surgeon and anaesthetist discussing and agreeing on the need for a throat pack? Always

(a) Sometimes
(b) Never

7. How should a throat pack be inserted?

(a) Assisted by Magill forceps using a laryngoscope for guidance.
(b) Under the direction of a video laryngoscope, using Magill forceps.
(c) With no laryngoscope or Magill forceps, guided by finger.
(d) Additional

8. Why do you insert throat packs? (Tick all that apply)

(a) Supporting the tracheal tube
(b) Mitigation of queasiness and emesis
(c) Diminished seepage surrounding the endotracheal tube
(d) Guarding against blood getting into the stomach while doing maxillofacial surgery
(e) Stopping secretions or blood from getting into the trachea
(f) Other

9. Which type of throat pack is most frequently utilised in your hospital?

(a) Ribbon gauze
(b) Loose gauze piece
(c) Paraffin impregnated gauze
(d) Raytec gauze
(e) Other

10. Usually, who puts in the throat pack?

(a) Surgeon
(b) Anaesthetist
(c) Either team as needed

11. Have you seen any issues when the throat pack was inserted? (Check all that relate)m

(a) Injury to tongue/frenum
(b) Damage to uvula
(c) Dental damage
(d) Tonsillar pillar

12. How do you make sure the throat pack is taken out following surgery? (Check all that relate)s

(a) A visible mark or label on the anaesthesia apparatus
(b) Mark or label the patient
(c) Record it in the case sheet at the time of insertion
(d) Leave a portion of the pack outside
(e) Include it in the swab count
(f) Inserting or removing documents from the WHO checklist
(g) Labelling the airway device

13. At the end of surgery, who at your place of employment removes the throat pack?

(a) Always anesthesiologist
(b) Always surgeon
(c) Nurse
(d) The person who inserts it
(e) Any of these

14. Which group is in charge of taking the throat pack off?

(a) SurgicalII.
(b) Anaesthesia
(c) Both
(d) The team which inserted
(e) Nothing fixed

15. Have you experienced complications as a result of a retained throat pack?

(a) Yes
(b) No

16. If yes, what complication was encountered?

(a) Airway obstruction
(b) Dysphagia
(c) Swallowed pack leading to intestinal obstruction
(d) Vomiting
(e) Need for endoscopic removal
(f) Any other
(g) Not applicable

17. What do you believe was the cause of the incident? (Please check all that apply).

(a) A surgeon or anesthesiologist falsely claims to have removed it.
(b) Team change (surgeon/anaesthetist/nurses)
(c) The team forgot to remove
(d) Additional packs placed during the surgery but not recorded/documented.
(e) Anything else (please specify)
(f) Inapplicable

7. Source of Funding

None.

8. Conflicts of Interest

There are no conflicts of interest.

9. Ethical

This in Vitro study was conducted solely through the administration of a questionnaire to doctors, without the involvement of any ethical committee.

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