

FREQUENCY OF POSTOPERATIVE SORE THROAT AND ITS ASSOCIATED RISK FACTORS AFTER TRACHEAL INTUBATION UNDER GENERAL ANESTHESIA AT DHQ HOSPITAL, TIMERGARA, DIR LOWER

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ABSTRACT

OBJECTIVE: The objective of current study was to determine the frequency of postoperative sore throat and its associated risk factors after tracheal intubation under general anesthesia at DHQ hospital, Timergara, Dir Lower

METHODS: In this cross-sectional study general surgical patients were interviewed post-operatively to conclude the presence of sore throat. Information related to socio demographics, surgical procedure, duration of surgery and size of endotracheal tube was noted. This study was completed in a period of almost 1 year.

RESULTS: A total of 296 patients were interviewed. 89 (30.1%) patients suffer with sore throat post-operatively. Female patients reported more sore throat than male patients (33.13% vs. 26.15%). Sore throat was found to be more frequent with older age group and larger size of endotracheal tube.

CONCLUSION: Prevalence of postoperative sore throat is high in our cohort. Female gender, old age and use of large size of endotracheal tube are associated with developing sore throat postoperatively.

KEY WORDS: Postoperative Sore Throat, Endotracheal Tube, Endotracheal Intubation.

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INTRODUCTION

Illness of postoperative respiratory tract discomfort is so prevailing that it is practically expected by patients and anesthetist comparable as an inevitable part of routine general anesthesia. Complaints vary from a slight throat irritation to unbearable pain, lack of ability to swallow and temporary sound hoarseness, and are a common complaint on the postoperative visit (1-3).

Following the endotracheal intubation, the soreness of throat is a major postoperative complication in general anesthesia (1). Sore throats incidence varies from 14.4-50% after endotracheal intubation but some report the incidence is as high as 51-88.4%. While after laryngeal mask insertion it ranges from 5.8% to 34% (3,4). Patients are inclined to focus more on symptoms related to the surgery site and might not give consideration to soreness of throat as main, however it could be reasonably painful to the patient (5). Diverse aspects have been associated and they consist of the size and type of tracheal tube to be

inserted, design of airway, technique of insertion, use of lubricants, cuff delineations and tube cuff pressure, number of tries at endotracheal intubation, duration of surgery, and also the type of operation (such as throat related surgery) and administered anesthesia (6,7,8). Irrespective of the prevalence or extent, postoperative sore throat (POST) is esteemed as a patient's 8th most unwanted consequence in the postoperative period (3,9).

The respiratory tract is principally prone when general anesthesia with endotracheal intubation is used. This is as the conduct of this practice of anesthesia frequently includes interfering with the normal respiratory tract's mucosal barrier mechanisms by way of equipment, or interfering with the normal mucosal or ciliary actions because of use of unhumidified anesthetic gases (3,7). The intervention, may often lead to injury, foreign body contagion, mucosal drought and airway irritation, that is noticeable in many ways in the postoperative period (10-12).

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No previous published study is available for anesthesia providers that evaluated the frequency and its concomitant risk factors of POST in Dir Lower. Hence, this research is aimed at noticeably measuring the most corporate factors associated with POST and its occurrence in Dir Lower.

METHODS

A descriptive cross-sectional study was conducted in District Headquarter Hospital, Dir Lower from December 13th, 2015 to December 5th, 2016. All the adult patients having age above 20 years who underwent surgical procedures under general anesthesia with tracheal intubation were included in the study. Patients with preoperative respiratory tract infections and those who underwent any emergency procedures and surgeries within the area of the mouth, pharynx, larynx and throat were excluded.

A total of 296 patients of both genders were recruited in this study by the calculation on the WHO's calculator for sample size. Convenience sampling technique was used to collect the data. Patients were interrogated about the event of postoperative sore throat afterwards tracheal intubation. All included participants provided informed consent for the collection and exploration of their unnamed data. Premedication tracked the routines of the particular department and no control was placed on the procedure of general anesthesia so that the anesthesia providers were unrestricted to perform the procedures as they routinely do. All participants were intubated orally in direct laryngoscopy by members of the anesthesia personnel. All the habitual hypnotics, anesthetics and muscle relaxants were injected, as in earlier investigations (11,13). Females

were usually intubated with a 6.0-7.0 mm ETT and males with 7.0-8.0mm ETT (high-volume/low-pressure SilkoClear®; Willy Rüschi GmbH, D-71394 Kernen, Germany) [10,14]. The cuff was filled with air up to a pressure of 25 mbar until no escape of anesthetic gases could be heard (12,15-18).

For the assessment, details concerning to the experience of the intubator, the course and degree of difficulty of the intubation, the application of additional devices into the pharynx, such as a temperature sensor and gastric tubing, as well as the process of the extubation were taken in concern. In addition, medical data of the participant (e.g. smoking, prevalent airway or lung

disease), duration of anesthesia and postoperative nausea and vomiting were assessed.

Within a postoperative time period of 12–36 hours, the presence, duration and degree of hoarseness and sore throat, have been recorded on a predesigned data collection tool.

Ethical clearance was obtained from the Ethical review committee of DHQ Hospital, Dir Lower. Informed verbal consent was attained from participants after providing them information and aim of the study. Also, all the responses were reserved intimate and unnamed. Data was analyzed using SPSS version 16.

RESULTS

This study was conducted on 296 individuals. Of total 296, 130 (43.91%) were males and 166 (61.71%) were females. The prevalence of POST was 30.1% (n=89). The mean age of the sample was 32.13 years ± 14.001 with the minimum of 20 years of age and with the maximum of 81 years of age. Out of the patients whom experienced sore throat 11 (19.6%) were from the age group of 20-19 years and comprised the least POST, while 11 (40.7%) were of age above than 60 years and found to be the largest incidence (Table.1).

Table.1 Age Group wise Sore Throat

Age Group	Total Participants	Sore Throat		P-value
		Present (%)	Absent	
20 29 years	56	11 (19.6%)	45	NS
30 39 years	101	30 (29.7%)	71	NS
40 49 years	77	25 (32.5%)	52	NS
50 59 years	35	12 (34.3%)	23	NS
60 years and Above	27	11 (40.7%)	16	0.047
Total	296	89 (30.1%)	207	

NS : Not Significant.

In this study Endotracheal tubes were used ranging from size 6.0-8.0 mm ID. Size 7.5 mm was the mostly used ETT and

was used for 123 (41.55%) participants. Sore throat was found related directly to the size of ETT intubated. The P-values

for the larger size of ETT were significant with the incidence of sore throat (Table .2)

Table.2 ETT Size wise Sore Throat

Size of ETT	Total Participants	Sore Throat		P-value
		Present (%)	Absent	
6.0 mm ID	20	1 (5%)	19	NS
6.5 mm ID	54	8 (14.8%)	46	NS
7.0 mm ID	91	22 (24.1%)	69	0.026
7.5 mm ID	123	52 (42.3%)	71	0.013
8.0 mm ID	8	6 (75%)	2	<0.001
Total	296	89 (30.1%)	207	

NS : Not Significant.

Number of attempts of laryngoscopy in our study ranges from 1 to more than 1. Out of total 296, 278 (94%) were intubated in first attempt while the

remaining 18 (6%) were intubated in more than 1 attempt and showed the POST in 11 (61.1%) participants while obvious from P-value there was no

significance between POST and number of attempts of laryngoscopy (Table.3).

Table.3 No. of Attempts of Laryngoscopy & Sore Throat

No. of Attempts	No. of Participants Intubated	Sore Throat		P-value
		Present (%)	Absent	
I	278	78 (28.0%)	200	NS
> I	18	11 (61.1%)	7	NS
Total	296	89 (30.1%)	207	

NS : Not Significant.

This study had shown no statistical significance to the occurrence of post-operative throat complaints and the use of the airway adjuvants (i.e. oropharyngeal airway, nasogastric tube and throat pack).

This study also assessed the POST with the type of surgery other than that are close to the concerned area like thyroid, tonsils etc. Maximum frequency of the POST was observed in the postoperative period of Appendectomy (n=27, 36%)

while least frequency of POST was observed in Hemorrhoidectomy surgeries (n=9, 23.7%). There was no significant correlation between type of surgery and POST (Table.4).

Table.4 Type of Surgery & Sore Throat

Type of Surgery	Total Participants Operated	Sore Throat		P-value
		Present (%)	Absent	
Laparotomy	25	8 (32%)	17	NS
Appendectomy	75	27 (36%)	48	NS
Cholecystectomy	25	8 (32%)	17	NS
Hernia Repair	48	12 (25%)	36	NS
Pyloolithotomy	31	10 (32.3%)	21	NS
Hemorrhoidectomy	38	9 (23.7%)	29	NS
Others	54	15 (27.8%)	39	NS
Total	296	89 (30.1%)	207	

NS : Not Significant.

DISCUSSION

POST is a common postoperative complication of general anesthesia with tracheal intubation and laryngeal mask airway insertion. The total frequency of POST in our study is 30.1% that is slightly lesser than that reported earlier by Endomwonyi N.P. et al (19). In the study carried out by Obiaya et al, sore throat was the third commonest postoperative complication (18).

In our study significant correlation between age and incidence of POST was found (P-value=0.047). A study done in Watford General Hospital, United Kingdom, presented no significant dissimilarity in the incidence of POST between the age groups considered (13). But, a cross-sectional study conducted at the University Hospital in Orebro, Sweden in 2008, age greater than 60 years was found to be significantly associated with development of POST compared with 18 to 60 years that supports our results (5).

The results of our study revealed a statistically significant correlation between size of ETT tube and incidence of POST complaints. According to a cross-sectional study carried out at the University Hospital in Orebro, Sweden in 2008, had also analogous results presenting significant correlation between size of ETT and the occurrence of postoperative throat complaints. With ETT size No. 7.0 compared with ETT 6.0 (51% vs. 27% [25/49 vs. 13/48]; P = .02) (5) The results from a double-blind, randomized-controlled study done in the Departments of Plastic Surgery and the

Ear Nose and Throat (ENT) surgery, at the Orebro University Hospital, Sweden has also presented the similar results. They found a higher ratio of participants with sore throat in ETT 7.0 mm ID vs. ETT 6.0 mm ID (51.1% vs. 27.1%), (P=0.006) (7).

The results of our study indicated no significant correlation between the POST and number of attempts of laryngoscopy for intubation. The study done by Christensen AM, et al., also presented multiple attempts at intubation did not upsurge the occurrence of POST (1), another study by Kolawole and Ishaq was also established no statistical relationship between number of attempts at tracheal intubation and Sore throat (12). A study piloted in Watford General Hospital had comparable result presenting no significant correlation between the POST and increased number of attempts at tracheal intubation (13).

CONCLUSION

Prevalence of postoperative sore throat is high in our cohort. Female gender, old age and use of large size of endotracheal tube are associated with developing sore throat postoperatively.

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