

Study on Various Indications of Tracheostomy**Dweethi Jayaprakash¹, Jadhav Rajkumar², M. Raneeth Kumar³, T. Keerti Santoshi⁴**¹Assistant Professor, Department of ENT, Head and Neck Surgery, Government Medical College, Nirmal, Telangana.²Assistant Professor, Department of ENT, Head and Neck Surgery, Prathima Institute of Medical Sciences, Karimnagar, Telangana.³Assistant Professor, Department of General Medicine, Government Medical College, Nirmal, Telangana⁴Associate Professor, Department of Pathology, Kanachur Institute of Medical Sciences, Mangalore, Karnataka.

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Abstract

Tracheostomy is one of the oldest operations that performed as a lifesaving procedure and it is commonly performed for various indications and different age group. This study designed to review the indications of tracheostomy. This study comprises of 90 patients who underwent tracheostomy. In 33.33% patients indication was for Ventilatory support. 23.33% patients indication was in trauma cases. 16.66% cases indication was tumors i.e. malignancy cases. 7.7% patients indication was throat injury and same for deep neck injury. 6.66% cases indication was Infection. 1.10% each cases were of tetanus and parapharyngeal abscess. In 2.22% cases indication was foreign body in respiratory tract.

Keywords: Tracheostomy, Indications.

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Introduction

Tracheostomy is a procedure which has been practised since biblical times to relieve basically upper airway obstruction in an emergency situation. Asclepiades described it as early as BC 100. In olden times it was seen as a last resort in hopeless cases and was mainly done to relieve airway obstruction. It was considered extremely dangerous and was rarely done. Until the end of the 19th century and the introduction of asepsis, together with the development of safe anesthetic techniques, the procedure was extremely hazardous. Chevalier Quixote Jackson established the principles of the operation at the beginning of the 20th century and these remain in place today. [1,2] Apart from its role of relieving airway obstruction, the indications for the procedure expanded from removal of tracheal secretions to delivering anesthesia as a part of different surgical procedures. [1,2] During the twentieth century, the indications for tracheotomy have evolved and developed. Tracheotomy, which was originally almost solely performed to bypass upper airway blockage, is today a very common elective therapeutic technique used mostly to assist prolonged intubation and ventilation of critically sick patients. [3] Tracheostomy is one of the commonest emergency surgeries performed in Ear,

Nose and Throat department. The indications to do Tracheostomy are divided into Infective [4]. Traumatic [5]. Neoplastic[6]. Prolonged Intubation in Intensive Care Units[7]. Corrosive Poisonings [8]. Burns [9]. Foreign body in Airway [10]. Prophylactic pre-operative Major surgeries in Head and Neck [11]. Congenital defects of Larynx and Trachea.[1. Subglottic Stenosis[13]. Anaphylactic Angioneurotic edema.

Tracheostomy can be classified according to the time of surgery into

1. Emergency Tracheostomy
2. Elective Tracheostomy
3. Prophylactic Tracheostomy

Normally the Tracheostomy is performed in the 2,3,4 Tracheal rings. Depending upon the site of tracheal opening it is divided in to

- A. High Tracheostomy
- B. Mid Tracheostomy
- C. Low Tracheostomy

Tracheostomy in the pediatric age group has been reported to be different from that in adults because in pediatric patients this procedure is challenging

and technically more demanding and carries higher degree of morbidity and mortality when compared to the adult population. [14,15] The procedure of traditional tracheostomy is associated with numerous complications which may occur anytime during the operative and postoperative periods.[16] These complications are more common in emergency traditional tracheostomy than in elective ones. In recent years there has been a considerable shift in emphasis regarding the indications for tracheostomy with recognition of more physiological and functional indications in addition to those of a strictly obstructive nature.[17] Now a day this is performed in head and chest injuries and other conditions where in normal respiratory efficiency is impaired because of patient's inability to maintain normal ventilation and control of secretions.[18,19] Even though the patient is in a stage of impending danger to life, every step of the operation is important for not to injure the important surrounding structures like great vessels of the neck, nerves, thyroid gland, cervical oesophagus. Eminent postoperative care is essential

especially in infants and children. In our study on different occasions various indications of tracheostomy was analyzed.

Material and Methods

This study comprises of 90 patients who underwent tracheostomy. This study includes patients who are intubated, that are referred from ICU with prolonged ventilation and those admitted into ENT ward with various indications. In this institute tracheostomy is done between 5th and 10th day for patients on mechanical ventilation. Investigations include routine surgical profile and coagulation profile.

Statistical analysis: At the end of study all data is compiled and statistically analyzed, data was expressed as frequency and percentages.

Results

Total number of tracheostomies performed during the study period was 90.

Table 1: Age and Gender of Tracheostomy patients

Age groups in years	Tracheostomy Subjects n =90	Percentage
<10	5	5.55%
11-20	7	7.77%
21-30	13	14.44%
>30	65	72.22%
Gender	n =90	Percentage
Males	64	71.11%
Females	26	28.88%

Table 1 shows 72.22 % were of age more than 30 years. 5.55% patients were of less than 10 years. 71.11% patients were males and 28.88 % were females.

Table 2: Indications of Tracheostomy in patients

Indications	Subjects n =90	Percentage
Ventilatory support	30	33.33 %
Tumor	15	16.66 %
Trauma	21	23.33 %
Throat injury	07	7.7 %
Deep neck injury	07	7.7 %
Infection	06	6.66 %
Foreign body	02	2.22 %
Tetanus	01	1.10 %
Parapharyngeal Abscess	01	1.10 %

Table 2 shows various indications of Tracheostomy. In 33.33% patients indication was for Ventilatory support. 23.33% patients indication was in trauma cases. 16.66% cases indication was tumors i.e. malignancy cases. 7.7% patients indication was throat injury and same for deep neck injury. 6.66% cases indication was Infection. 1.10% each cases were of tetanus and parapharyngeal abscess. In 2.22% cases indication was foreign body in respiratory tract.

Discussion

Tracheostomy is usually a procedure to relieve upper respiratory obstruction in an emergency situation when patients are in respiratory distress. The indications for this operation have been expanded to include not only elective treatment but also emergency procedure. The main causes for high complication rate in emergency tracheostomy appear to be the amount of time required to open the trachea. Therefore simple and fast procedures are mandatory. Muhammad Shafi et al. in their

study found that the age group of 41 to 50 years was the most prevalent accounting for 25.2% of cases. Men outnumbered women by 57.9% to 42.1%.[20] During the course of the study conducted by Japhet M Gilyomaet. al, 214 patients underwent tracheostomies. The majority of patients (36.7%) were in their third decade of life with a male to female ratio of 3.1: 1. The median and mean ages were 36 and 38.34 ± 12.26 years, respectively, and their ages ranged from 1 year to 76 years.[21] B. S. Alabi, et. al. in their study found the male to female ratio to be 1.6: 1 with majority in third to fifth decade of life. [22] Our study shows 72.22% were of age more than 30 years. 5.55% patients were of less than 10 years. 71.11% patients were males and 28.88% were females. This study shows various indications of Tracheostomy. In 33.33% patients indication was for Ventilatory support. 23.33% patients indication was in trauma cases. 16.66% cases indication was tumors i.e. malignancy cases. 7.7% patients indication was throat injury and same for deep neck injury. 6.66% cases indication was Infection. 1.10% each cases were of tetanus and parapharyngeal abscess. In 2.22% cases indication was foreign body in respiratory tract. Alirezaalidat et. al. in their study, documented altered mental status (19.1%) and respiratory diseases (14.1%) as the main indications. The indications were tumors (10.5%), cardiac problems (9.7%), laryngeal problems (9.5) and brain injury (7%). Depressed mental status leads to intubation which if prolonged necessitates tracheostomy. Subglottic stenosis, dysplasia, pulmonary diseases, asthma, pneumonia, croup, angina and abscess were respiratory diseases requiring tracheostomy. Neoplasms of the larynx, thyroid, trachea and esophagus were the third common etiology. [23]

Conclusion

Total number of tracheostomies performed during the study period was 90. In 33.33% patients indication was for Ventilatory support. 23.33% patients indication was in trauma cases. 16.66% cases indication was tumors ie malignancy cases. 7.7% patients indication was throat injury and same for deep neck injury. 6.66% cases indication was Infection. 1.10% each cases were of tetanus and parapharyngeal abscess. In 2.22% cases indication was foreign body in respiratory tract.

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