Original Article

Tracheostomy Complications in admitted IDPs Patients in a Teaching Hospital of Bannu

Complications of Tracheostomy

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ABSTRACT

Objectives: The main objectives of this study were to evaluate the complications of tracheostomy in IDPs patients who were admitted in DHQ teaching hospital Bannu and further the study of complications in relation with tracheostomy types, age and tracheostomy tubes types.
Study Design: Observational / analytic / cross sectional study.
Place and Duration of Study: The study was conducted at the ENT Unit, DHQ Teaching Hospital, Bannu from April 2015 to December 2015.
Materials and Methods: 60 patients undergoing tracheostomy, having an age group of 3 to 65 and fulfilling inclusion and exclusion criteria were selected. Elective and emergency tracheostomy was included in the study period. "Open surgical technique" was done. Metallic and portex cuffed rubber tubes ware used. To record any possible complication, a pre-designed proforma was used.
Results: The study comprised 42 males and 18 females. The mean age of the patients was 30 years(SD+18.20). Elective tracheostomy was done in 10% while emergency tracheostomy was done in rest of the 90% patients. Metallic tubes were used in 20% and portex cuffed rubber tubes in 80% of the patients. The recorded complication rate was 40% overall. There was an 18% immediate, 11% intermediate and 11% late complications. Complication rate was somewhat elevated in early age. Bleeding was commonest complication (20%) among all followed by emphysema, dysphagia and aspiration (4% each). Complication rate of emergency tracheostomy was higher than elective one. Similarly, complication rate with portex cuffed rubber tubes was greater than metallic tubes.
Conclusion: Rate of complication in emergency tracheostomy was higher than elective tracheostomy where as in elder patients; it was lower than in younger patients. Similarly, complication rate was greater with portex cuffed rubber tubes. From the study, it is concluded that post op care can minimize the chances of post tracheostomy complications.
Key Words: Elective tracheostomy, Emergency tracheostomy, Portex cuffed rubber tubes

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INTRODUCTION

Tracheostomy is an operational technique that generates a surgical airroute in the cervical trachea. It is most frequently performed in patients who have had difficulty weaning off a ventilator, followed by those who have suffered trauma or a catastrophic neurologic insult

The traditional semantic difference between tracheostomy and tracheotomy is now blurred because the hole is variably permanent. If a cannula is in place, an unsutured opening heals into a patent stoma within a week. If decanulation is performed (ie, the tracheostomy cannula is removed), the hole usually closes in a similar amount of time.

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The cut edges of the tracheal opening can be sutured to the skin with a few absorbable sutures to facilitate cannulation and, if necessary, decanulation can be performed. Instead, a permanent stoma can be created with circumferential sutures. The term tracheostomy is used, by convention, for all these procedures and is considered to be synonymous with tracheotomy.

Literature review shows that Alexander the great saved one of his soldier's life from suffocation with the help of his sword in his trachea. Early tracheostomy generated worst results due to lack of techniques. In earlier 13th century, tracheostomy was described as "Semi Slaughter" but with the passage of time, revolutionary changes were made in its instrumentation and methodology[1].

Earlier tracheostomy was meant for pulmonary blockage/obstruction but later on, it was used to treat other respiratory tract problems as well[2]. Majority of tracheostomies are performed as an emergency procedure but some are performed electively. The technique which has got popularity among ENT

surgeons is "Open Surgical Technique through Dilatational".

Complications of tracheostomy can be classified as immediate, intermediate and late phase complications. In Pakistan, a very few studies are conducted on the same as compared to the rest of the world where abundant studies are reported on tracheostomy's complications.

The objective of this study was to see the complications of tracheostomy in "Internally Displaced People" of North Waziristan during military operation in their area and to compare the results with other studies. Another objective was to study the complication's rate in relation to the patient's age, tracheostomy type and type of tubes used in the procedures.

MATERIALS AND METHODS

Our study included 60 patients undergoing tracheostomy in ENT department of DHQ teaching hospital Bannu from April 2015 to December 2015.

Inclusion criteria: Patients having an age of 3-65 years, undergoing tracheostomy for any indication.

Exclusion criteria: Critically ill patients with any medical or surgical problem and the patients where follow-up was not possible were not included in the study.

Procedure: Patients were admitted through routine OPD or were referred from other units/hospitals or casualty department of the same hospital. Patients were examined thoroughly who came to opd. CBC, Bleeding time, Clotting time, neck & chest x-rays were advised and checked their results.

Tracheostomies were done through open surgical technique on the proposed dates. Anesthesia was given and tracheostomies were performed. After the procedure, metallic/portex tubes were inserted. After tracheostomies, patients were shifted to ENT ward and in first 24 hrs, chest and neck x-rays were done. Post-operative care was also done in all the patients including humidification using wet gauze and suctioning. Regular examination was done by the doctor for any possible complication. The already designed proforma was used for entering their data. Standard way was acquired for decanulation. Proper follow-up was given to patients who discharged with tracheostomy tubes.

Data collected was analyzed using SPSS statistical software

RESULTS

The study comprised 42 (70%) males and 18 (30%) females. The mean age of the patients was 30 years (SD+18.20). Elective tracheostomy was done in 10% (n=6) while emergency tracheostomy was done in rest of the 90% (n=54) patients. General anesthesia was given to 10 (16.66%) while local anesthesia was given to 50 (83.33%) patients. Metallic tubes were used in 20% (n=12) and portex cuffed rubber tubes in 80% (n=48) of the patients. The recorded complication rate was 40% overall. There was an 18% immediate, 11% intermediate and 11% late complications (Table 2). Complication rate was somewhat elevated in early age. Bleeding was commonest complication (20%) among all followed by emphysema, dysphagia and aspiration (4% each) (Table 1). Complication rate of emergency tracheostomy was higher (30%) than elective one (20%) and in children as compared to elders. Similarly, complication rate with portex cuffed rubber tubes was greater than metallic tubes. Complications in contrast to tube type is shown in table 3.

Table No.1: General complications of tracheostomy

Complications	Frequency	%age
Bleeding	12	20
Dysphagia	2	4
Emphysema	2	4
Tube obstruction	3	5
Aspiration	3	5
Tracheal stenosis	1	1.6
Difficult decanulation	1	1.6

Table No.2: Frequency of immediate, intermediate and late infections

Complication	Frequency	%age
Immediate	11	18
Intermediate	7	11
Late	7.5	11

Table No.3: Complications in contrast to tube type

Complication	Metallic	Portex	P value
Tube obstruction	0	1	<0.05
Difficult decanulation	1	0	<0.05
Bleeding	7	5	<0.05
Emphysema	2	1	<0.05
Dysphagia	1	2	<0.05
Aspiration	1	1	<0.05
Immediate hemorrhage	3	3	<0.05
Tracheal stenosis	1	0	<0.05
Aerophagia	0	2	<0.05
Tube displacement	1	2	<0.05

DISCUSSION

Our results are closer to the results obtained by some researchers (48.4%)[3]. However, the results are higher than the results of Manzoor (27.2%) [4] and Zaidi (24%)[5]. The lower rate of complications shown by the above researchers is their own clinical experience. Other reasons may be difference in sample size, surgical technique and sample selection criteria. Post-operative care contributes another important factor towards complications more specifically in children.

Immediate complications are more influenced by surgical skills, facilities in the OT, tracheostomy type and the patient's condition. In children, higher complication rate was recorded. The same results are also shown by Dubey[6] and Oliver [7] work.

Our results closely resemble to the results of Manzoor et al[8] that shows lower infection rate and it might be due to better post-operative techniques. The research work of Mehta showed higher infection ratio [9].

It is noted that the presence of tube results in dysphagia and Aspiration. Another main reason for the occurrence of these complications is faulty kinetics of vocal cord closure during deglutition.

Similarly, Emphysema occurs mainly due to extensive dissection process. Intermediate hemorrhage occurs due to infection.

Tube obstruction was present to some degree but it was not significant. Plugging of tracheostomy tube by crusts and thick secretions are the reasons behind tube obstruction. Humidification and irrigation of the tube prevents crusting and tube obstruction [10].

Another uncommon complication is aerophagia that can be prevented by deflation. Tracheal stenosis was found only in one patient and it was might be due to cicatrisation followed by surgery. Difficult decanulation is more specific in children than in adults. Cardiac arrhythmias are reported by Chaudhry et al[11].

CONCLUSION

Tracheostomy is a comparatively easy surgery that can be carried out in all ages using local anesthesia in majority of the cases. Most of the complications are minor and can be treated by post op care. Complication rate is higher in emergency than in elective and in children than in adults. The following steps can be a helping hand in minimizing the complications.

1. Meticulous operative techniques
2. Proper post-operative care
3. Controlled operating conditions
4. Proper selection of the patients for tracheostomy

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Mehta AK, Chamyal PC. Tracheostomy complications and their management. Med J Arm Forces Ind 1999;55:197-200.
2. John J-watkinson, Gaz MN, Wilson JA. Tracheostomy Stell and Marans Head and Neck Surgery. 4th ed. Butt erwarth Heinemann; 2000.p. 153-168.
3. Zaitoune AG, khost KM. Tracheostomy. J Laryngoleotol 1994;23(1):61-6
4. Manzoor T, danyal R, anwarulHaq. Complications of tracheostomy. Pak Armed Forces Med J 2000; 50(1): 17-9.
5. Zaidi SH. Post-operative complications and their management. A clinical monograph on oral cancer, 1st ed: Karachi, royal 1995;155- 199.
6. Dubey SP, Garap JP. Paediatric tracheostomy: an analysis of 40 cases. J Laryngol Otol 1999;113 (07):645-51.
7. Oliver BG. Complications of Tracheostomy in pediatric patients. Ear, nose and throat 1985;54: 346-9.
8. Manzoor T, danyal R, anwarulHaq. Complications of tracheostomy. Pak Armed Forces Med J 2000; 50(1):17-9.
9. Mehta AK, ChamyalPC.Tracheostomy complications andtheir management. Med J Arm Forces Ind 1999;55: 197-200.
10. Bradely PJ. Management of obstructive airway & tracheostomy. 6th ed. Scott Brown's otolaryngology; 1997.p.5/7/1-20.
11. Choudary AA, et al. A comparative study of elective and emergency tracheostomy-Bangladesh J Otorhinolaryngol 2008;14(2); 57-62.