

Compare Postoperative Outcomes of Elective Tracheostomy with Emergency Tracheostomy

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ABSTRACT

Objective: To determine the outcomes in term of early postoperative complications of elective tracheostomy and compare with emergency tracheostomy.

Study Design: Comparative/Observational

Place and Duration of Study: Study was conducted at ENT department of MTI, Khyber teaching hospital, Peshawar for duration of one year, from 1st December, 2018 to 30th November, 2019.

Materials and Methods: Total seventy four patients were presented in this study. Patients were aged between 15-65 years. Patients detailed demographics age, sex and BMI were recorded after taking proper consent. Patients were equally divided into two groups. Group A (n=37) received emergency tracheostomy and group B received elective tracheostomy. After surgery outcomes/complications were measured in term of frequency and percentages. Complete data was analyzed by SPSS 24.0 version.

Results: Out of 74 patients, 25 (33.8%) patients were females and 49 (66.22%) patients were males. Mean age of the patients was 42.56±13.78 years in group A and 41.66±14.98 years. Frequency of complications were high 21 (56.8%) in group A as compared to group B 7 (21.62%) postoperatively with p-value <0.05. Bleeding was the most common complication observed among 10 (27.02%) patients in group A and 4 (10.81%) patients in group B.

Conclusion: It is concluded that early postoperative complications were high in patients whom were received emergency tracheostomy than elective tracheostomy.

Keywords: Emergency tracheostomy, Elective tracheostomy, Early complications

INTRODUCTION

Tracheostomy is an operation that produces a stoma between the skin and the anterior tracheal wall. It is one of the oldest known operations¹. This technique has become less common in developing countries, as endotracheal intubation has been advanced in intensive care and the widespread use of mechanical ventilation in recent years, but in our reg, it is most frequently done in the cases of infectious disease, neoplastic, and traumatic blockage in adults.²

The following are various complications depending on the type and the purpose of the tracheostomy, the condition of patients, the location of the operation, the management facility and the surgeon's experience. The procedure of tracheostomy can be associated with a number of Complication ranging from 6 to 66 percent. A higher complication and mortality in emergencies, critically ill patients and young children is shown in various reports. [3] Emergency tracheostomy brings an increase in the occurrence of complications by 2 to 5 folds over an alternative. Some of these complications continue to pose problems after tracheostomy tube placement and particular late complications have a clinical re-incidence of the tracheostomy tube³. A lower TR procedure, in which the tracheal incision reaches to the 4th or 5th tracheal loop, was introduced in 1909. In comparison to a high tracheotomy (cricothyrotomy) in the second and third tracheal rings, Chevalier Jackson has improved this technique and standardised it further.^{7,8}

MATERIALS AND METHODS

This comparative/observational study was conducted at ENT department of MTI, Khyber teaching hospital, Peshawar for duration of one year, from 1st December, 2018 to 30th November, 2019. and comprised of 74 patients. Patients detailed demographic age, sex and BMI were recorded after taking written consent. Patients with cardio respiratory, severe systematic disorders and those were not agreed excluded from this study.

Patients were equally (n=37) divided in two groups, A and B. Group A received emergency tracheostomy and group B received elective tracheostomy. Patients detailed examination and regular follow up were taken i.e. X ray, CT scan, laryngoscopy and routine blood pressure. Frequency of complications was measured between both groups postoperatively. Complete data was analyzed by SPSS 24.0 version. Chi square test was used to compare the results. Significantly difference was observed with p value <0.05.

RESULTS

Out of 74 patients, 25 (33.8%) were females (12 in group A, 13 in group B) and 49 (66.22%) were male patients (25 in group A, 24 in group B). 18 (24.3%) patients (group A 9, group B 9) were ages less than 30 years, 32 (43.24%) patients (16 group A, group B 16) were ages 31 to 50 years and 24 (32.43%) patients (group A 12, Group B 12) had ages above 50 years. Mean age of the patients was

42.56±13.78 years in group A and 41.66±14.98 years in group B (Table 1)

Table 1: Age and gender wise distribution between both groups

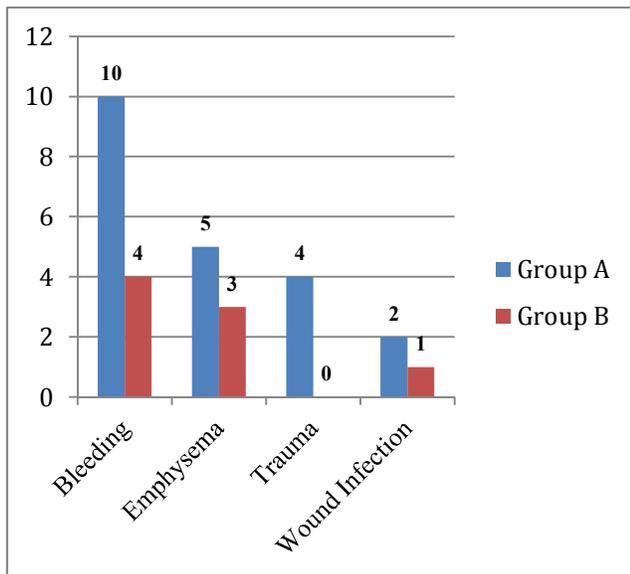
Characteristics	Group A (n=37)	Group B (n=37)	Total (n=74)
Gender			
Male	25 (67.6)	24 (64.9)	49 (66.22%)
Female	12 (32.4)	13 (35.1)	25 (33.8%)
Age			
Mean age (years)	42.56±13.78	41.66±14.98	8

P-value >0.05

In group A, frequency of bleeding was 10 (27.02%) patients, a substantial difference with a p-value of less than 0.05 was found as compared to group B, 4 (10.81%) patients. Frequency of Emphysema in Group A was 5 (13.51%) patients and 3 (8.11%) in group B with p-value >0.05. A substantial difference was found in group A 4 (10.81 %) patients with trauma while in group B none had any surrounding trauma (p=0,05). Patients had wound infections in Group A 2 (5.41 %) while patients in Group B 1 (2.70 %) had wound infection. (Table 2)

Table 2: Comparison of early postoperative complications between both groups

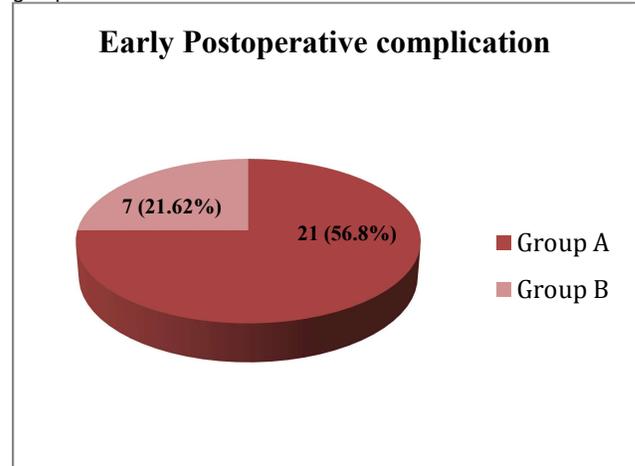
Variables	Group A (n=37)	Group B (n=37)	P-value
Complications			
Bleeding	10 (27.02)	4 (10.81)	0.41
Emphysema	5 (13.51)	3 (8.11)	N/S
Trauma	4 (10.81)	0 (0)	0.05
Wound Infection	2 (5.41)	1 (2.70)	N/S



Early postoperative complications were developed in group A 21 (56.8%), while in group II B (21.62%) patients developed complications. (figure 1)

An overall fréquence of early postoperative complications with a p-value of p <0.001 was observed between both classes. (table 3)

Figure 1: Comparison of overall early complications between both groups



DISCUSSION

Tracheostomy is one of the world's most successful operating procedures with a high incidence of postoperative complications linked to optional or emergency tracheostomy⁹⁻¹⁰. We have recorded 74 patients in this study to compare the early postoperative complications of optional and emergency traheostomy. Out of 74 patients, 49 (66.2%) were males while 25 (33.8%) were females. Mostly patients were aged between 30 and 60 years is 75.7 %. The findings were close to several earlier studies in which male patients were high at an average age of 60-80%¹¹⁻¹².

The findings of this study largely agree with the literature. Previous studies have shown that emergency tracheostomic complications rates are higher than elective tracheostomy¹³⁻¹⁷. Tube dislodgement of tracheostomy and tube obstruction, in particular during the earlier postoperative period, are two extremely serious, potentially fatal, and complications of tracheostomy. The dislodgement of tracheostomy tubes can be prevented by suturing or tie securing the bridges of the tracheostomy tube. Tracheostomy tube obstruction is typically caused by inspired segments, blood clots, the insertion of the tracheostomy tube in the false anterior tract of the trachea, or the interference of the tracheal wall orifice by defective tube collection. In our study Trotter et al observed tube blockade of >25% of the tube¹⁸.

Other early complications examined in the current research, namely subcutaneous emphysema, structure trauma, and injury infection, have also been found more common in emergency tracheostomy. The total incidence of complication, recorded by Pal P et al.²⁸, was 77%, including 53% intra-operative bleeding and 13% tube hindrance. This pattern has been identified in immediate complications and earlier and later ones, and in post operative bleeding²⁰ has also been found to be among the most prevalent early post-operative complications in Francois et al.. This pattern of increased complications with emergency tracheostomy was found.²¹

Of course, a prospective study will be required with an even bigger patient population to decide whether these specific early postoperative complications are more

common in statistically relevant emergency tracheostomies. Nevertheless, even the present study with a combined sample size of 74 patients indicates that these complications are much more common with emergency tracheostomies when all early postoperative complications are taken in total.

CONCLUSION

In patients undergoing emergency tracheostomy, it is concluded that early postoperative complications were high rather than electrotracheostomy. Hemorrhage is the most common early after surgical complication. This can be attributed to less than optimal working conditions in an emergency situation in which both the patient and the surgeon are nervous and panicked.

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