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A RELATIVE COMPARISON OF TWO METHODS OF NASAL TRACHEA FIBEROPTIC INTUBATION

Dr. Muhammad Umer Iqbal, Dr. Zunnoorain, Dr. Muhammad Usman Ali
Allied Hospital Faisalabad

Abstract:

Introduction: *CFI (conventional fiberoptic intubation) in well-organized airway is available with difficulty and rates of the success are about sixty-eight percent. The complications involve long time attributed to bleeding, coughing & intubation. The aim of this research work is to compare 2 available procedures establish to reduce the duration, problem rates, easy insertion & hemodynamic constancy.*

Methodology: *The permission of the study took from the ethical committee of the hospital. Written willing was taken from the patients. All the patients separated into 2 groups. The preparation of the both groups was carried out according to the recent criteria. In Group A of endotracheal tube, the insertion of the endotracheal tube carried out till eighteen centimetres spot at the alae of nasal cavity. Fiberscope dot its way from the tube & found the way to go through the VCs (vocal cords). The proper placement of the tube was confirmed. In the next group: Group B of nasopharyngeal airway, a nasopharyngeal airway of spirally split Rusch in suitable size heated, lubrication carried out & inserted in nose. Fiberscope got is way from airway, visualization of the VCs carried out & the removal of the nasopharyngeal airway carried out and proper confirmation about the placement of the tube was ensured. The documentation of the duration of time taken for the intubation, the episodes of cough, bleeding & hemodynamic aspects carried out.*

Results: *The 79.76 seconds time was requirement for intubation in the patients of Group A, but in case of Group B, the time was 44.15 seconds. The increase in the rate of heart beat & average BP of the arteries to be very high in the patients of Group A as compared to the patients of Group B.*

Conclusion: *We came with the outcome that split nasopharyngeal airway is good procedure for the intubation then the method of endotracheal tube due to short time and best hemodynamic factors.*

Keywords: *Fiberscope, Endotracheal, Nasal Cavity, Nasopharyngeal, Arteries, Heartbeat.*

Corresponding author:
Muhammad Umer Iqbal,
Allied Hospital,
Faisalabad

QR code

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INTRODUCTION:

Square laryngoscopy & method of oral intubation are very complicate or even not possible when mobility of jaw is very limited, limited opening of the mouth or medical interference is the requirement from around or in the oral cavity [1-4]. CVI in a well-organized airway is very hard with the rates of success of about sixty-eight percent. [5]. The complication is available in the shape of a large duration of time, tube advancement, recurring attempts, unintentional trauma of the soft tissue & bleeding cooperating with the visibility with the help of fiberoptic bronchoscope and uneasiness in the patient leads to the distress, severe pain and coughing [6-10]. From many years, the easy procedures for the fiberoptic intubation in the nasal cavity are developing to tackle the mentioned problem and to shorten the duration of the activity which decrease the sufferings and increase the rates of success [1-14]. The main aim of this research work is to compare the two procedures of fiberoptic intubation to find easiness; one is with the use of the SNPA (spirally split nasopharyngeal airway) to expand the paths of nasopharyngeal to prevent the pain, bleeding and facilitates the proper place for intubation. The 2nd method is about the placement of the endotracheal tube in the start; the tube was placed in the cavity of nose from this point and preceded till the point of eighteen centimetres was at the alae nasi level. Secondary aims were bout the rates of the problems & the impacts on the hemodynamic.

Seventy patients were the part of this case study after finalization. However, eighty patients were chosen to explanation for attrition & separated into 2 different groups on the basis of the genders and age. SPSS software version sixteen was in use for the statistical analysis of the data. Student's T test was in use for the comparisons. Chi square & Fischer's test procedures were in use for categorical data.

METHODOLOGY:

The research was carried out in the Allied Hospital Faisalabad in the duration of 2 years of 2017 & 2018. Patients from twenty to sixty year of age who undergo anaesthesia for the operation of pharyngeal or maxillofacial & ASA grade one or two were the part of this research work. Patients who feared from the method, the availability of the contraindication of intubation in nasal cavity as trauma of head, supposed base of fractures in the skull & diverged nasal septum were not included in the case work. All the patients were separated into two groups. In first group, nasal ETT was entered through the nostril of the patient till eighteen centimetres point in second group SPNA (split nasopharyngeal airway) entered and functioned as a channel for fiberscope.

Fasting period of eight hours and different medicines were provided to the patients before the start of the procedure. Patients were continuously monitored on the screens of ECG, pulse rate, BP and temperature before the medication. Xylometazoline 0.1% were used for the preparation of the airway in both holes of nose thirty minutes prior from the method followed by some other specified medication.

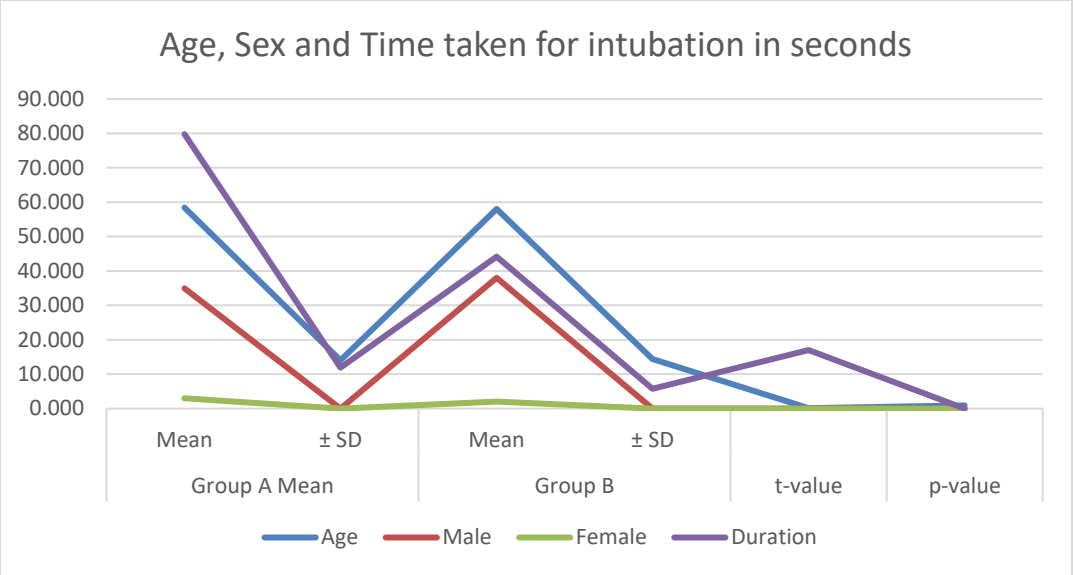
In Group A of endotracheal tube, the insertion of the endotracheal tube carried out till eighteen centimetres spot at the alae of nasal cavity. Fiberscope dot its way from the tube & found the way to go through the VCs (vocal cords). The proper placement of the tube was confirmed. In the next group: Group B of nasopharyngeal airway, a nasopharyngeal airway of spirally split Rusch in suitable size heated, lubrication carried out & inserted in nose. Fiberscope got is way from airway, visualization of the VCs carried out & the removal of the nasopharyngeal airway carried out and proper confirmation about the placement of the tube was ensured. The documentation of the duration of time taken for the intubation, the episodes of cough, bleeding & hemodynamic aspects carried out. The failure intubation was declared after two attempts and duration of more than one hundred and eighty second. The SPSS software version sixteen was in use for the analysis of the collected information.

RESULTS:

The data about demography of all the patients collected but the disparity in the comparison of the data was not significant. The duration of the fiberoptic bronchoscope intubation was 79.76±11.879 seconds for the 1st group & 44.15±7.767 seconds for the second group as described in Table-1.

Table 1: Age, sex and time taken for intubation in seconds

Time interval	Group A Mean		Group B		t-value	p-value
	Mean	± SD	Mean	± SD		
Age	58.420	± 14.028	58.000	± 14.379	0.1310	0.90
Male	35.000	-	38.000	-	-	-
Female	3.000	-	2.000	-	-	-
Duration	79.760	± 11.879	44.150	± 5.767	16.9760	<0.001



The attempts of cough cause the trauma of the airway which causes the bleeding from mucus from normal to serious in more than forty-seven percent patients of the first group as compared to very low bleeding in ten percent patients of the second group, the disparity was important statistically significant.

The classification of the bleeding carried out as; mild, moderate & severe and their description is available in Figure-3. BP and heart beat rate were comparable in the patients of the both groups. The increase of about twenty percent in the heart beat rate was assessed as compared to the about one percent in the second group which is statistically significant as described in Table-2 & Table-3. BP was also present with a statistically significant rise of about twelve percent patients of the first group as compared to about two percent patients of the second group.

Table 2: Comparative heart rate of both groups

Time interval	Group A Mean		Group B		t-value	p-value
	Mean	± SD	Mean	± SD		
Baseline	77.500	9.226	81.620	9.12	-1.99	**0.0510**
0 minute	92.870	12.4	82.480	10.7	3.98	< 0.001
01 minute	83.610	10.09	78.420	8.67	2.44	0.0170
05 minute	73.500	6.476	77.200	6.97	-2.43	0.0180

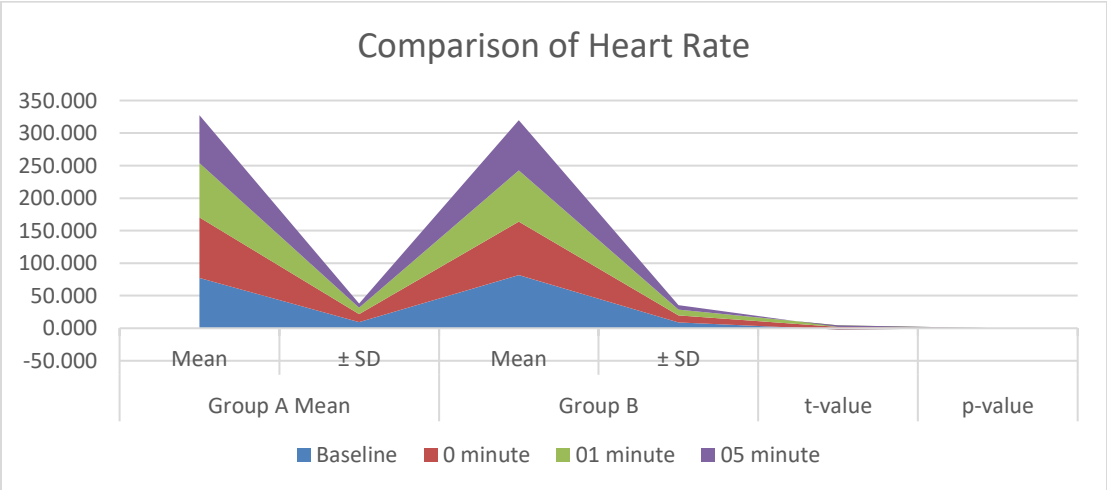
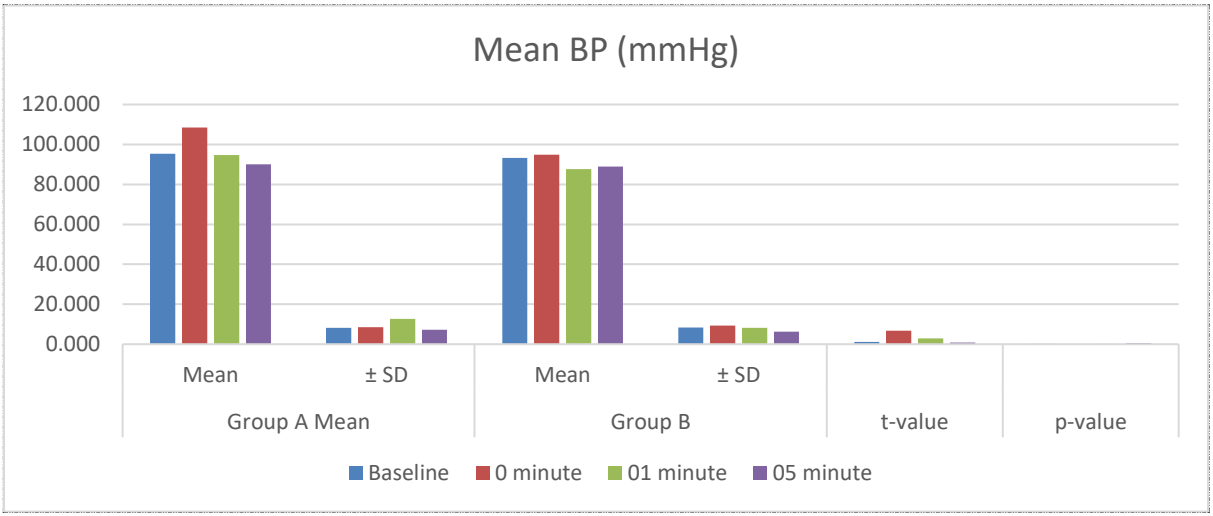


Table 3: Mean blood pressure mm of Hg

Time interval	Group A Mean		Group B		t-value	p-value
	Mean	± SD	Mean	± SD		
Baseline	95.290	± 8.120	93.180	± 8.311	1.14	0.2600
0 minute	108.430	± 8.500	94.800	± 9.281	6.75	< 0.001
01 minute	94.640	± 12.711	87.650	± 8.121	2.91	0.0050
05 minute	90.100	± 7.301	88.940	± 6.231	0.76	0.4510



DISCUSSION:

CFI is very harm method to perform. FI (Fiberoptic intubation) can be very complicated as oral FI. The disparities in the introduction between different research works have created these differentiations in the presented occurrences; however, some other features as fiberscope size and endotracheal tube size have the ability to impact the occurrence. These methods are the cause of anxiety and pain in the patients. The main cause for the complication in the advancement of the endotracheal tube (over a fiberscope) is due to the divergence of the path of tube from fiberscope to the epiglottis and other nearly organs.

Many procedures to reduce the time of the method and other complicated issues are developing from many years for intubation with high rates of success as use of the as first approach, SPNA etc. First approach of the tube has the ability to lead to the high occurrence of the trauma of the soft tissues, bleeding, discomfort in the patient due to the attempts of cough or hindrance of the tube [18]. In this research work, we entered a tube in the nostrils till the mark of eighteen centimetres. Ali Mohammad zadeh described the same procedure [19]. SPNA was elaborated for atraumatic nasogastric intubation. The SPNA method required small anaesthetic depth & it manage to pay for the frequent methods of fiberscope if there is a requirement. According to this case study, the tie of intubation by SPNA procedure was smaller than first tube method as well as low bleeding, attempts of cough & a smother path. tThe duration of intubation in this research work was 79.76±11.87 seconds but Ali Mohammad zadeh concluded 90.3 seconds in his case study [19].

While entering the fiberscope through SPNA, there was no bleeding in ninety percent patients of the second group in comparison of about fifty-three percent patients of the 1st group. About thirty percent patients in the 1s group found with very low bleeding as compared to ten percent patients of the 2nd Group. This was an attribution to the disparity in suppleness of the substance of the endotracheal tube & airway through nasal cavity [20]. The average BP increased about fourteen percent in the 1st group as compared to the 1.73% patients of the group of SPNA.

CONCLUSION:

Split nasopharyngeal airway supported procedure is best substitute of the method of fiberoptic intubation in respect of duration required for intubation, the easiness of the patients, the rate of success & hemodynamic steadiness.

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