Indications of Tracheastomy in Najaf (Retrospective study 2008-2011)

Yasir L. Hasson* and Ahmed.A. Al-Zubiadi *

الخلاصة

تعتبر عملية تفويه الرغامي من الطرق الجراحية القديمة والتي لاتزال تستخدم بشكل واسع في الوقت الحاضر. ان المقولة القديمة الشهيرة(عندما تفكر بتفويه الرغامي عندها عليك أجراء العملية)،هذه المقولة بعيدة كل البعد عن الواقع مع بروز الطرق الجديدة الأقل تداخلا لضمان المجاري التنفسية.

الهدف من الدراسة تقييم مؤشرات اجراء عملية تفويه الرغامي في مدينة النجف الأشرف.

تمت الدراسة بأثر رجعي شملت 87 عملية تفويه رغامي أجريت في الفترة الزمنية بين كانون الثاني 2008 وشباط 2011 في مستشفى الصدر التعليمي في النجف.

النتائج :معدل اعمار المرضى في هذه الدراسة (52,4). معظم المرضى كانوا من الذكور(59 مريضا). المؤشر الأساسي لأجراء عملية تفويه الرغامي كان انسداد المجاري التنفسية العليا67,8 % واقل المؤشرات هو تضيق الجزء السفلي من الحنجرة(2,2%).

من بين أسباب انسداد المجاري التنفسية العليا ،شكل سرطان الحنجرة وأسفل البلعوم السبب الأساسي(67,7%).

من بين 20 مريضا أحتاجوا أجراء عملية تفويه الرغامي لغرض مساعدة التنفس، 65% منهم كان لديهم أصابات في الرأس.

6 من المرضى أجريت لهم عملية تفويه الرغامي لغرض تنظيف المجاري التنفسية ،83,3% كان لديهم أصابات بالرأس.

الأستنتاجا ت: مؤشرات أجراء عملية تفويه الرغامي في النجف كانت مختلفة جدا عما هي عليه في الدول المتقدمة.ففي الوقت الذي ظل فيه تفريج أنسدلد المجاري التنفسية العليا السبب الأكثر شيوعا في النجف فأن أستبدال أنابيب التخدير الموضوعة لمدة طويلة أصبح المؤشر الأول لأجراء العملية في الدول المتقدمة.

Abstract

Tracheastomy is one of few ancient surgical procedures which is still widely used nowadays. There is an old famous statement (when you think about tracheastomy, it is time to do it). This statement is far away from reality with the emergence of new less invasive methods of securing airway.

Aim: to evaluate the indications of tracheastomy in Najaf.

*Kufa university/college of medicine/department of surgery/otolaryngology
yasirlh@med.kuiraq.com , ahmedam@med.kuiraq.com

Patients and methods: a cross-sectional analytic study of 87 tracheastomy operations had been done in the period between January 2008 to February 2011 in Al-Sadar teaching hospital in Najaf.

Results : The mean age of our 87 patient was (52.4). Most of our patients were males 59(67.8%). The main indication for tracheastomy was upper airway obstruction 59 patients (67.8%), While the least indication was subglottic stenosis 2,2%. Among upper airway obstruction causes, carcinomas of the larynx and hypopharynx were the main indications for tracheastomy 67.7%. From 20 patients reqired tracheastomy for assisted ventilation 65% had head injury. In those six patients whom the main indication of tracheastomy was for bronchial toilet, 83.3% had head injuries (5patients).

Conclusions : our indications for tracheastomy in Najaf is quite different from those over all the world. While still relieving of upper airway obstruction is the most common indication in our study, replacement of prolong intubation represent the first indication in developed countries.

Key words: tracheastomy ,indications,Najaf.

Introduction

The role of surgical airway as a lifesaving procedure has been appreciated for thousands of years. A landmark paper by Chevalier Jacksonin 1909 describe the safe surgical technique with the same principle still applicable nowadays, this is the tracheastomy.[1]

Tracheotomy is the establishment of surgical opening in the trachea for ventilation. Connection of this opening to the skin by means of tube called tracheastomy.[2]

These two terms i.e. tracheotomy and tracheastomy will be used interchangeably in this study.

The basic indications for tracheastomy are as follow:

- To bypass upper airway obstruction
- To assist respiration over prolonged period
- To assist with the clearance of upper airway secretion.
- To help reduce aspiration

- To reduce the dead space during ventilation to promote weaning from ventilation.
- To reduce the probability of subglottic stenosis.[2]

The decision to carry out a tracheastomy is complex, and numerous factors must be considered to ensure that this is optimal procedure for the individual patient. These factors include the relative advantages and risk of tracheastomy versus alternative methods of providing an artificial airway, the facilities of institution, the skills of the personnel, the `unique features of the patient airway and respiratory physiology and the specific disorders or disease and its likely course[3].

There are significant benefits for the patient having a tracheastomy but altering the physiology of respiration also has its own drawbacks. One of the advantages of a tracheastomy tube is reduction of the upper airway dead space by up to 150 ml (50%). This means that there is a significantly reduced effort in breathing compared to the naso - oropharyngeal route.

There is consequently significant reduction in the airway resistance and increased alveolar ventilation [alveolar ventilation _ tidal volume _ dead space volume].

The tracheostomy tubes are more comfortable than endotracheal tubes and therefore, better tolerated by patients, who consequently require less sedation. Patients also have the potential to eat and talk with the tube in situ[4].The objective of this study is to evaluate the indication of tracheostomy in Najaf city.

Methods

A cross-sectional analytic study of patients who had been tracheasomized in the period between January 2008 to February 2011 in Al-Sadar teaching hospital. This includes patients in the otolaryngology department, emergency department and those who were already admitted to the intensive care unit.

Depending on operative notes data, the informations regarding age, gender, indications, place of operation ,type of anesthesia had been collected and arranged accordingly. Total of (87) patients were included in this study.

Results

The mean age of our 87 patients was (52.4). 37.9% of the patients belong to age group between 60 and 69 years. While the age group less than 10 years represent the smallest percentage (3.4%).

Table (1) age distribution

Age in years	Number of the patient	percentage
<10 years	3	3.4%
10-19	0	0%
20 - 29	4	4.5
30 -39	14	16.09%
40-49	8	9.1%
50 -59	18	20.6%
60 -69	33	37.9
>70	7	8.04%
total	87	100%

Most of our patient were males 59(67.8%).

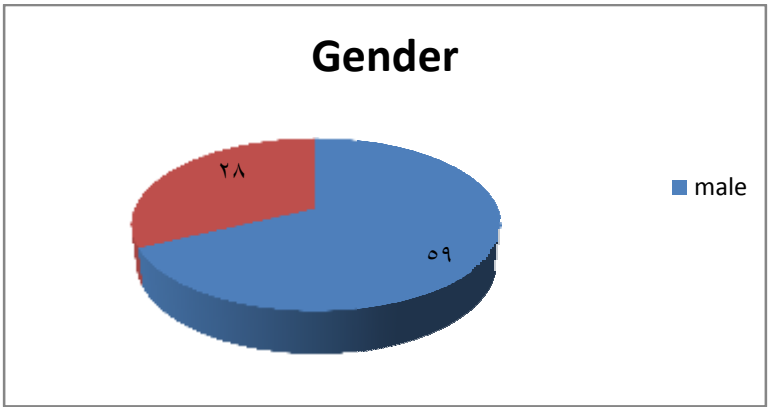


Fig (1) gender distribution

The main indications for tracheastomy were upper airway obstruction 59 patients (67.8%) , while the least indication was subglottic stenosis in 2,2%.

Table (2)Indications of tracheastomy

Indication	Number of patient	Percentage
Upper airway obstruction	59	67%
Assisted ventilation	20	22%
Bronchial toilet	6	6.8%
Subglottic stenosis	2	2.2%
Total	**87**	**100%**

Among upper airway obstruction causes carcinomas of the larynx and hypopharynx were the main causes that required tracheastomy 67.7%.

Table (3)Causes of Upper Airway Obstruction

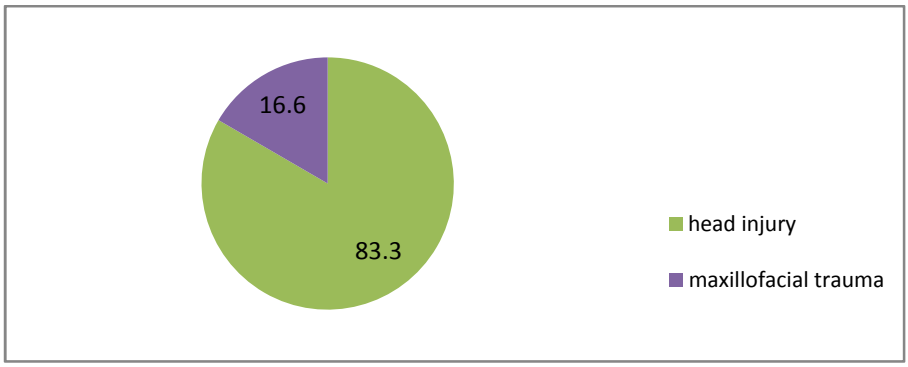
Cause	Number of patients	Percentage
Carcinoma of larynx and hypopharynx	40	67.7%
Renkie's edema	1	1.6%
Congintal anomalies of the larynx	1	1.6%
Neck and maxillofacial trauma	11	18.6%
Goiter	2	3.3%
Postthyrodectomy	4	6.7%
Total	**59**	**100%**

Among the 20 patients required tracheastomy for assisted ventilation 65% had had head injury.

Table (4)The causes for which patients need assisted ventilation

Causes	Number of patients	Percentage
Head injury	13	65%
Guilian Berri	3	15%
Spinal cord injuries	3	15%
Hepatic encephalopathies	1	5%
Total	**20**	**100%**

In those six patients whom the main indication of tracheastomy was bronchial toilet, 83.3% had head injuries (5patients).



Fig(2)Percentage of patients needs tracheastomy for assisted ventilation

In All patients, tracheastomy had been done by conventional method, with 78 patients (89.6% by longitudinal skin incision) and 10.4% by transverse one.

From all tracheastomies in this study seventy operations(80.4%)were done under local anesthesia, while 17 cases only had been done under general anesthesia(19.6%). 58.6% of patient in this study were admitted to the otolaryngology, while the remaining 41.3% had been already admitted to the intensive care unit.

Discussion

About 1/3 of our patients were in the 5th and 6th decade, this reflect the high incidence of head and neck cancer in this age group. Our results are similar to Nafi results in Basrah 1999, 50% of patient in the 6th decade and laryngeal carcinoma was the most common cause for which tracheastomy was done[5]. The result looks quite different from Albadri results at 2008 in Baghdad , when 52.8% of patients were young and in their third or fourth decade of life which is consistent with usual age of general trauma patients in that most of them are young , this reflects the status of violence in Baghdad during that year[6].

67.8% of our patient were males, this look similar to Albadri results in 2008,when he found that 74.4% of his patients were males[5]. This significant difference in gender distribution may be due indulgence of male in RTA, personal assaults and smoking more than female population in Iraq .

Carcinomas of the larynx and hyoppharynx represents 67.7% of the cause of upper airway obstruction which is the most common indication of tracheastomy in our study (67.8%). The main indication of tracheostomy in our study was upper airway obstruction,while nowadays all over the world the primary surgical indication is the long-term intensive care unit patient. Here, the aims are avoidance of damage to the larynx, earlier weaning from artificial respiration, and improved nursing care(walz MK 2001)[7]. Tracheostomy has become the method of choice in managing patients requiring long-term mechanical ventilation[8].

Durbin believe in the superiority of tracheastomy in patients with respiratory failure due to worsening chronic obstructive pulmonary disease and congestive heart failure over other translaryngeal airway[9].

But our results are approximately the same as that for Nafi [5,] and Albadri [6] when the upper airway obstructiom was the main indication.

In our study, the most common indication of tracheastomy in patient in ICU was long term ventilation. Kremer B in 2002 put prolong intubation ,congenital anomalies and upper airway obstruction as the main indications for tracheastomy which replace inflammatory cause that has the priority in the past[10]. In paediatric age group the result in our study and others reach the same . In Alsamri study in UAE , the most common indication for tracheostomy in children was upper airway obstruction due to subglottic stenosis ,(21%) or as part of a complex craniofacial syndrome[11] .

Conclusions and recommendations

Most common indication for tracheastomy in Najaf was upper airway obstruction due to tumor of larynx and hypopharynx, which reflect delay in the presentation of those patients . We should develop our facilities to use other less invasive methods to secure airway. We should increase the level of knowledge in primary health care provider so laryngeal carcinoma can detect early and we do not face such large number of advanced CA larynx that need tracheastomy to relief airway obstruction

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