13 - INCIDENCE OF TRACHEOSTOMY IN WEANING FROM MECHANICAL VENTILATION

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INTRODUCTION

A common procedure performed in an intensive care unit is a tracheostomy. It is usually performed as a surgical procedure, but about two decades, the usual technique has been replaced by simple manipulations involving basically the puncture and dilatation of the trachea and the adjacent soft tissues (PARK et al., 2004).

According Montovani, Brentano (1992) is a surgical procedure that occurs with the opening of the trachea through the different layers of the midline of the neck, and the wound heals by second intention, and openness is maintained by an endotracheal tube.

Indicated in patients with prolonged mechanical ventilation (MV) in the handling of those with difficult weaning from MV or to facilitate airway clearance, providing greater safety and comfort for the patient, thus allowing the removal of the tracheal tube and decreased sedation during mechanical ventilation (ARANHA et al., 2007).

Several factors may be considered at risk for developing post-intubation injury in the airway, such as infection, high blood pressure cuff and the tube itself, hemodynamic shock and the technique used (LIMA, MARQUES, TORO, 2009).

According to Nakanishi et al. (2001) in relation to the advantage of intubation tracheostomy is that it reduces the dead space and facilitates the hygiene of the respiratory system. However, it has its complications, which are more or less intense depending on the age and condition of the patient, the primary disease, inflammatory lesions of the tracheal mucosa, the skill of the surgical team, the material of the tube, the type of cuff and type of mechanical ventilation (pressure or volume).

When performed by an experienced surgeon, tracheostomy is well tolerated and has a low mortality rate. You can have both early and late complications and should be well known to be diagnosed quickly and with enough time to implement the appropriate treatment, avoiding unfavorable. Among the major late complications observed, have preceded the tracheoesophageal fistula stenosis and bleeding respectively (COELHO et al., 2001).

There is still controversy about the practice of this procedure due to the lack of guidelines for selecting which patients should be subjected to it, as well as the ideal period for its accomplishment. These factors contribute to its realization is based on subjective clinical aspects, transforming it into an individual decision for each service or the physician intensivist (ARANHA et al., 2007).

The aim of this study was to estimate the incidence of tracheostomy in patients undergoing invasive mechanical ventilation. The specific objectives verify that the tracheostomy accelerated the process of weaning from mechanical ventilation and analyze how many days of mechanical ventilation and tracheostomy was performed after how many days the patient remained on mechanical ventilation.

MATERIAL AND METHODS

The study was approved by the Ethics and Research Committee of Unioeste, protocol 27935/2009.

We performed a retrospective analysis using the database of Physiotherapy Intensive Care Unit, University Hospital of the West of Paraná - HUOP, from July 2008 to June 2009.

Inclusion criteria: were considered patients who were on mechanical ventilation for a period of at least 24 hours and older than 15 years.

Data were analyzed by comparing means, medians and standard deviations for all variables.

RESULTS

From July 2008 to June 2009 were admitted to the Intensive Care Unit (ICU) - HUOP total of 339 patients. The study population comprised 213 patients who were on mechanical ventilation for more than 24 hours, with a mean age of 50.5 (± 19.05) years.

The cause of ICU admission is in Figure 1, patients were divided into groups according to cause of hospitalization as surgical (acute abdomen, injury by firearms), neurological (stroke, brain tumors), respiratory (pneumonia, chronic obstructive pulmonary disease), sepsis (septic shock, hypovolemic shock), trauma (traumatic brain injury, politraumas) and others (acute renal failure, tetanus).

Of the 65 patients on mechanical ventilation (30.51%) were hospitalized for trauma, surgery 47 (22.06%), respiratory 35 (16.43%), neurological 33 (15.49%), sepsis 17 (7.98 %) and 16 for other reasons (7.51%).

The sample consisted of 87 (26.04%) patients who received a tracheostomy in 18 (20.68%) was attempting to wean at least once, while the other 69 (79.32%) there was no attempt to wean before tracheostomy.

The percentage of tracheostomies performed according to the causes of hospitalization is in Figure 2. The median preoperative mechanical ventilation tracheostomy was 9.5 (± 4.63) and after 10.5 days (± 7.12) days, and there was failure of the withdrawal of mechanical ventilation in patients with tracheostomy on average 5 (± 2.89) times. Before performing the tracheostomy 49 patients (56.32%) were sedated.

The pre tracheostomy ventilation mode was used: 47 in synchronized intermittent mandatory ventilation - SIMV / PS (54.02%), 25 assisted controlled ventilation - A / C (28.40%), 13 with pressure support ventilation - PSV (14.77%) and 2 with oxygen - Ayre (2.29%). In the 70 tracheostomized patients were discharges from the ICU (80.45%).

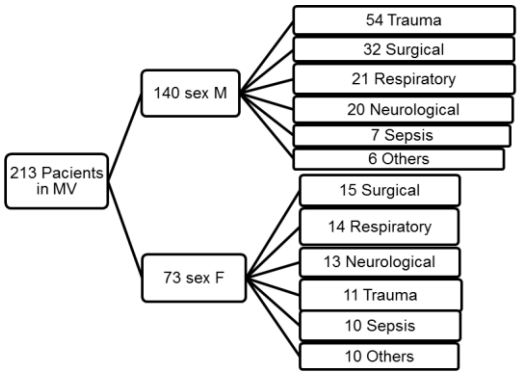

Figure 1: Division of patients by sex according to the cause of admission

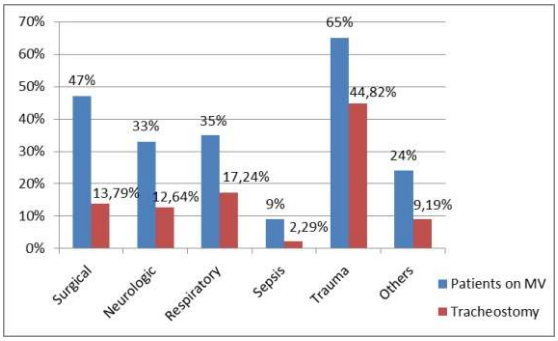

Figure 2: Tracheostomies performed according to the causes of hospitalization

DISCUSSION

The results show that the vast majority of mechanically ventilated patients admitted were male (65.72%) agreeing to study of Burigo (2002) where the number of male hospital was also higher (69.01%). In the sample population was male prevalence due to the fact that men are more involved in violent deaths and unnatural than women, which predisposes them to the use of mechanical ventilation as support treatment.

Most causes of admission to the ICU requiring mechanical ventilation was traumatic (30.51%), surgical (22.06%) followed by respiratory problems (16.43%), while in the study of Freitas and David (2006) much of the reason for admission was the postoperative period, followed by pneumonia and sepsis. This difference may have occurred because of the hospital be considered a reference for high-complexity and reference for polytrauma care.

The average of tracheostomies in this study was 26.04% higher compared to results of the study Aranha et al. (2007), where the percentage was 16.84%. This difference can be explained by cause of admission units, and the study of traumatic cause while in another study was due to respiratory problems.

However the results of this study corroborates those of Shirawi and Arabi (2005), where the percentage of patients who required tracheostomy ranged from 14% to 48%. These values are due to the benefits of tracheostomy in patients who have suffered a trauma and are in the ICU.

The median preoperative mechanical ventilation tracheostomy in this study was 9.5 (± 4.63) days which according to the study by Pasini et al. (2007) may be considered late, early tracheostomy is considered as that performed within 7 days on mechanical ventilation. In a study by Arabi et al. (2004) late tracheostomy was an average of 13.9 (± 0.5) days.

In the study by Pasini et al. (2007) was compared patients who underwent tracheostomy early, intermediate and late with the total duration of mechanical ventilation and during weaning from mechanical ventilation. In the late tracheostomy group the time of weaning was 6.5 (± 2.9) days, while that study was 10.5 (± 7.12) days.

As for the ventilation mode was used in 47 pre tracheostomy SIMV / PS (54.02%), 25 in A / C (28.40%), 13 in pressure support ventilation, PSV (14.77%) and 2 Ayre (2.29%) different to the study of Park et al. (2004) where the ventilation mode was used over PSV in 56 patients, 14 in SIMV / PS and 8 pressure-controlled ventilation (PCV). This difference in study results may have occurred in this study because most patients were still sedated at the time of tracheostomy consequently having few attempts at weaning.

CONSIDERATIONS

In this work, tracheotomy may be considered late according to some studies, being held in a period longer than 7 days. However as most patients were not weaned from MV, the TQT may have been done early.

The time of weaning tracheostomy in this study was higher than compared to other authors, this may have occurred due to not try weaning while intubated, or tracheostomy did not accelerate the weaning process.

Thus, this study found the incidence of tracheostomy in the intensive care unit showing that the incidence was high (26.04%), most patients were male, mean age was 50.5 (± 19.05) years and the procedure was performed mainly in patients with trauma.

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INCIDENCE OF TRACHEOSTOMY IN WEANING FROM MECHANICAL VENTILATION

Were admitted to the Intensive Care Unit (ICU) of the University Hospital of the West of Paraná, 339 patients, only 213 participated by presenting the sample aged 15 years and more than 24 hours on mechanical ventilation (MV), of these, 140 sex male (65.73%) being the major cause of trauma admission 50 (38.57%), followed by 32 surgical (22.85%) respiratory and 21 (15%) in sex and 73 females (34.27 %) with the major cause of admission from other causes 16 (21.92), followed by 15 surgical (20.54%) respiratory and 14 (19.17%). Overall, the major cause of admission was trauma (30.51%), followed by surgery (22.06%) and respiratory (16.43%). In 87 patients (40.84%) tracheostomy was performed, while the other 69 patients there was no attempt at weaning. The median preoperative mechanical ventilation tracheostomy was 9.5 (± 4.63) and after 10.5 days (± 7.12) days. Failed withdrawal of mechanical ventilation in patients with tracheostomy on average 5 (± 2.89) times. Before performing the tracheostomy 49 patients (56.32%) were sedated. The pre tracheostomy ventilation mode was used: 47 in synchronized intermittent mandatory ventilation - SIMV (54.02%), 25 assisted controlled ventilation - A/C (28.40%), 13 with continuous positive airway pressure - CPAP (14.77%) and 2 with oxygen - Ayre (2.29%). In the 70 tracheostomized patients were high (80.45%). Of the total sample of 147 patients were discharges from the ICU (69.01%). In this work the tracheotomy did not accelerate the weaning process, and it was not indicated due to the long duration of mechanical ventilation was not indicated because it is a difficult and not by weaning obstruction, but held by decision of the attending intensivist.

KEY WORDS: Respiration, Artificial; Tracheostomy; Weaning

IMPLICATIONS TRACHEOTOMIE DANS LE SEVRAGE DE LA VENTILATION MECANIQUE

Ont été admis à l'unité des soins intensifs (USI) de l'Hôpital universitaire de l'Ouest du Parana, 339 patients, seuls 213 ont participé en présentant l'échantillon âgés de 15 ans et plus de 24 heures sur la ventilation mécanique (VM), de ce nombre, 140 du sexe de sexe masculin (65,73%) étant la principale cause d'admission de 50 traumatismes (38,57%), suivis par 32 chirurgical (22,85%) des voies respiratoires et 21 (15%) dans le sexe et 73 femmes (34,27 %) avec la principale cause d'admission à d'autres causes 16 (21,92), suivie par 15 chirurgicale (20,54%) des voies respiratoires et 14 (19,17%). Globalement, la principale cause d'admission a été un traumatisme (30,51%), suivie par la chirurgie (22,06%) et respiratoires (16,43%). Chez 87 patients (40,84%) trachéotomie a été réalisée, tandis que les 69 autres patients il n'y avait aucune tentative de sevrage. La médiane trachéotomie préopératoire ventilation mécanique était de 9,5 (± 4,63) et après 10,5 jours (± 7,12) jours. Échec de retrait de la ventilation mécanique chez les patients avec trachéotomie en moyenne de 5 (± 2,89) fois. Avant d'effectuer les 49 patients trachéotomie (56,32%) étaient sous sédation. Le mode de ventilation pré trachéotomie a été utilisée: 47 dans la ventilation synchronisée intermittente obligatoires - VACI (54,02%), 25 montres ventilation contrôlée - A / C (28,40%), 13 avec pression positive continue - CPAP (14,77%) et 2 avec l'oxygène - Ayre (2,29%). Dans les 70 patients trachéotomisés ont été élevés (80,45%). Sur l'échantillon total de 147 patients ont été élevés (69,01%). Dans ce travail, la trachéotomie n'a pas accéléré le processus de sevrage, et il n'était pas indiqué en raison de la longue durée de ventilation mécanique n'a pas été indiquée, car elle est une. Difficile et non pas par le sevrage d'obstruction, mais tenue par la décision de l'intensiviste assister.

MOTS CLÉS: respiration, artificielle; trachéotomie; Sevrage

IMPLICACIONES TRAQUEOSTOMÍA EN EL DESTETE DE LA VENTILACIÓN MECÁNICA

Fueron ingresados en la Unidad de Cuidados Intensivos (UCI) del Hospital de la Universidad del Oeste de Paraná, 339 pacientes, sólo 213 participaron en la presentación de la muestra de 15 años y más de 24 horas de ventilación mecánica (VM), de estos, 140 del sexo hombres (65,73%) son la principal causa de admisión trauma 50 (38,57%), seguida de cirugía 32 (22,85%) y las vías respiratorias 21 (15%) en el sexo y 73 mujeres (34,27 %), con la principal causa de ingreso por otras causas 16 (21.92), seguido de 15 quirúrgicos (20,54%) respiratorios y 14 (19,17%). En general, la principal causa de ingreso fue de trauma (30,51%), seguida de cirugía (22,06%) y respiratorio (16,43%). En 87 pacientes (40,84%) se realizó traqueotomía, mientras que los otros 69 pacientes no hubo ningún intento de destete. La mediana de la traqueotomía preoperatoria ventilación mecánica fue de 9,5 (± 4,63) y después de 10,5 días (± 7,12) días. No se pudo retirar la ventilación mecánica en pacientes con traqueotomía en promedio de 5 (± 2,89) veces. Antes de realizar la traqueostomía 49 pacientes (56.32%) fueron sedados. El modo de ventilación antes de traqueotomía se utilizó: 47 en ventilación sincronizada mandatoria intermitente - SIMV (54,02%), 25 reloj de ventilación controlada - A / C (28,40%), 13 con la vía aérea positiva continua - CPAP (14,77%) y 2 con el oxígeno - Ayre (2,29%). En los 70 pacientes con traqueostomía fueron altas (80,45%). De la muestra total de 147 pacientes fueron altas (69,01%). En este trabajo la traqueotomía no acelerar el proceso de destete, y no se indica debido a la larga duración de la ventilación mecánica no se ha indicado ya que es una. Difíciles y no con el destete obstrucción, pero por una decisión de la intensivista que asisten a.

PALABRAS CLAVE: Respiración Artificial, la traqueotomía, destete.

INCIDÊNCIA DE TRAQUEOSTOMIA NO DESMAME DA VENTILAÇÃO MECÂNICA

Estiveram internados na Unidade de Terapia Intensiva (UTI) do Hospital Universitário do Oeste do Paraná, 339 pacientes, apenas 213 participaram da amostra por apresentar idade superior a 15 anos e mais de 24 horas em ventilação mecânica (VM), destes, 140 do sexo masculino (65,73%) sendo a maior causa de admissão 50 trauma (38,57%), seguido por 32 cirúrgico (22,85%) e 21 respiratório (15%) neste sexo e 73 do sexo feminino (34,27%) tendo como maior causa de admissão 16 por outras causas (21,92), seguido por 15 cirúrgico (20,54%) e 14 respiratório (19,17%). No geral, a maior causa de admissão foi traumática (30,51%), seguida por cirúrgico (22,06%) e respiratório (16,43%). Em 87 pacientes (40,84%) foi realizado a traqueostomia, enquanto nos outros 69 pacientes não houve nenhuma tentativa de desmame. A mediana de ventilação mecânica pré traqueostomia foi de 9,5 (±4,63) dias e pós de 10,5 (±7,12) dias. Houve falha da retirada da ventilação mecânica nos paciente com traqueostomia em média 5 (±2,89) vezes. Antes da realização da traqueostomia 49 pacientes (56,32%) encontravam-se sedados. O modo ventilatório utilizado pré traqueostomia foi: 47 em ventilação mandatória intermitente sincronizada - SIMV (54,02%), 25 em ventilação assisto controlada - A/C (28,40%), 13 com pressão positiva contínua em vias aéreas - CPAP (14,77%) e 2 com oxigenioterapia - Ayre (2,29%). Nos pacientes traqueostomizados 70 foram de alta (80,45%). Do total da amostra 147 pacientes foram de alta (69,01%). Neste trabalho a traqueostomia não acelerou o processo de desmame, sendo que ela não foi indicada devido ao longo tempo de ventilação mecânica, não foi indicada por ser um desmame difícil e nem por presença de obstrução, mas sim, realizada por decisão do médico intensivista.

PALAVRAS CHAVE: respiração artificial, traqueostomia, desmame