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Full Length Research Paper

Changes in functioning of temporomandibular joint, pre and post orotracheal intubation

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The stomatognathic system is a system responsible for many important functions for humans , such as phonation, swallowing, chewing, sucking, speech and breathing, in this system the temporomandibular joint (TMJ) is located is located in the region skull-Face, so an imbalance between any of the structures could trigger temporomandibular joint dysfunction (TMD). This is a descriptive observational study design, using the format "Research Diagnostic Criteria for Temporomandibular disorders (CDITT)". The sample was composed of twenty (20) participants. To facilitate the analysis of the four criteria CDITT, functional, muscular, articular and general format is considered. Using the statistical analysis with the WILCOXON testto corroborate the hypothesis, to confirm and get a conclusion of the study of intubation procedure generates significant changes on the muscle in the joint, according to data obtained in the investigation (López et al., 2006; Okeson and Jeffrey, 2003; Susan et al., 2011; Dimitroulis, 1998; Okeson, 1996; Michael et al., 2007)

Key words: Temporomandibular function, intubation, orotracheal.

INTRODUCTION

The stomatognathic system is a system responsible for many important functions for humans, such as phonation, swallowing, chewing, sucking, breathing and speaking, this system has been defined as the integrated and coordinated morph functional unit consisting of skeletal, muscular system structures, nervous, glandular and dental, which is organic and functionally linked to the digestive, respiratory and phonologic systems these structures are interconnected and interrelated (López del Castillo A, Villalobos Y and Hidalgo, 2006).

Within this system is the temporomandibular joint (TMJ), this is one of the most important joints of humans because it is involved in all functions of daily life, is an articulation of structural and functional characteristics of the stomatognatic system (López et al., 2006, Okeson and Jeffrey, 2003) constituted by two articular surfaces (one belonging to the jaw and over the temporal bone), articular disc, synovial membrane surrounding the disc, capsule and ligaments, is located in the craniofacial region so an imbalance between any of the structures could be life-temporomandibular joint dysfunction (TMD), characterized by pain symptoms present in the skull, face, teeth and cervical l3 area around the 60 to 70% of the population suffers from one of these symptoms, but one in four people are aware of what is happening in their joint.

The DTM is a very common condition in the population. Epidemiological and clinical studies report that between 50 and 60% of the adult population has examined signs and symptoms of joint dysfunction temporomandibular (Urallah, 1995; Carlsson, 1999).

At the present there are few studies in which the relationship of the dysfunction of the temporomandibular joint after intubation procedure orotraqueal. In Latin

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America and specially in Colombia it has a limited number of publications related to the study of the relationship between tracheal intubation and TMJ dysfunction. This research will seek and nurture the existing information regarding this topic; on the other hand, this research will help us to make decisions about the appropriate management of patients with endotracheal intubation for prevention of symptoms associated with these alterations (Michael et al., 2007)

The social importance of this research is the comparison of a hypothesis which attributed changes at the temporomandibular joint, which these patients after they underwent intubation allowing orotraqueal4 know which, is the index of the questionnaire where you see the greater the rate of change so we can take the necessary preventive measures in handling this procedure. Giving the patient the opportunity to be referred to specialists and different professionals involved in clinical research findings as speech therapists, physiotherapists etc (Klinika, 2005).

MATERIALS AND METHODS

It is a descriptive study-observational design as it set out to describe the relationship of the temporomandibular joint in patients who have undergone endotracheal intubation and compare results before and after this intervention with an evaluation conducted with the index "Diagnostic Criteria in Research Temporomandibular Disorders." The population in this research study will consist of patients at the University Hospital of the Valley of Cali, which will undergo intubation.

In the present study the operation of the ATM with the evaluation form Research Diagnostic Criteria for Temporomandibular Disorders (CDI / TTM) was assessed, this assessment tool has been widely used and referenced as an instrument confiable13 this standardized clinical assessment was performed few hours before the intubation procedure and 7 days after treatment, 11 participants were taken on a convenience sample.

Sample

The sample will consist of twenty (20) participants will be chosen by convenience sampling , which meet the criteria for inclusion and exclusion , so that the availability of the participants is the most convenient for the study.

Inclusion criteria

Pre surgery patients whom will undergo a tracheal intubation, patients aged 18 to 65, patients classified as ASA 1.

Exclusion criteria

Patients who are undergoing surgery in the cranial and / or cervical , mandibular , patients ranked ASA II, III, IV, V, VI, patients who use dentures, Variables: sex, many men, women, age, marital status , ethnicity, level of pain.

STATISTICAL ANALYSIS

A descriptive analysis to characterize the participants and for the processing and analysis of data using SPSS software was used was performed. Wilcoxon test was used, this is a nonparametric test used to compare two related samples and determine if there are differences between them, a null hypothesis (Ho) defined as follows arose: "intubation procedure does not affect the function of the temporomandibular joint of patients "taking H0ø = 0, and an alternative or work (Ha) hypothesis:" the intubation procedure adversely affects the functioning of the temporomandibular joint of the participants."

Considering the preoperative measurements (Hpre) and postoperative (HPOS), the ratio of the two samples was raised as follows: Hpre < HPOS where those values are less than 0.05 HPOS, states that there is evidence in the data to say that the procedure produces alterations in the operation of the ATM.

RESULTS AND DISCUSSION

To facilitate data analysis, we considered four different indexes, the functional, muscular, articulate and general index. at the beginning the first information were compared with the final data to identify changes that may indicate the presence of alterations in the ATM. Statistical analysis with the Wilcoxon test was performed for the investigation. The hypothesis yielding accurate and reliable results, if the P value is less than 0.05 there is evidence to say that there were significant changes in the operation of the ATM and if P is not greater than 0.05 results in no evidence (Figures 1 to 5).

Significant changes were found only in muscle index since the value of P corresponded to 0.01684 which indicates that the pain symptoms on palpation of the masticatory muscles increased significantly after intubation procedure, however the functional index do not show changes important and relative to articular index changes occurred in most participants although the test result does not allow any kind of statement as the result of P is very close to the limit of probability (Table 1).

Conclusions

The intubation procedure generates changes especially

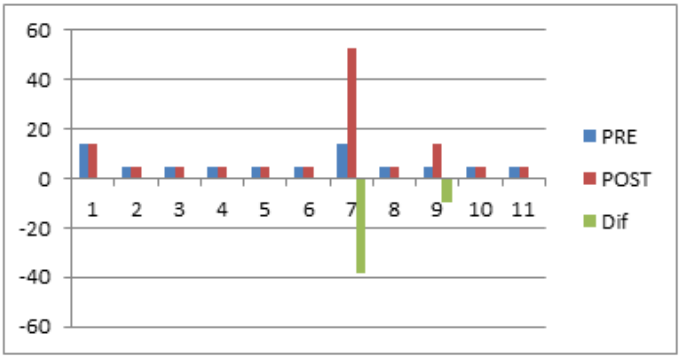

Figure 1. Functional index differences between pre and post evaluation represent intubation, which shows that 18.18% of participants had symptoms related to alterations in the corresponding ATM 2 study participants and 81.81% showed no alterations after undergoing this procedure this corresponds to 9 participants.

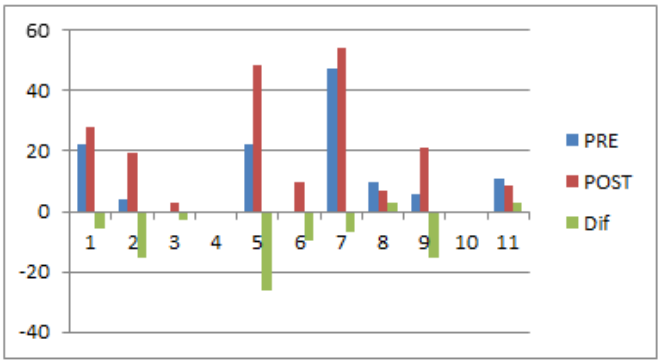

Figure 2. Differences in muscle index shown pre and post intubation, which shows that 63.63% corresponding to 7 participants had increased pain symptoms on palpation of the masticatory muscles, and 36.36% for 4 participants.

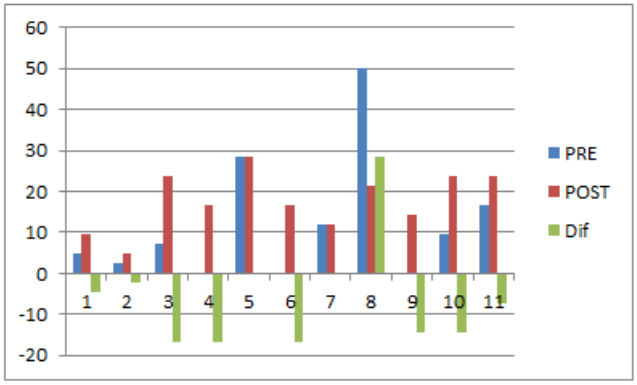

Figure 3. Shows the changes in the joint assessment of the pre and post intubation rate, which shows that 81.81% for participants had increased intra articular signs of alteration related to the increase or the appearance of intra articular noise 18% for 2 participants did not change.

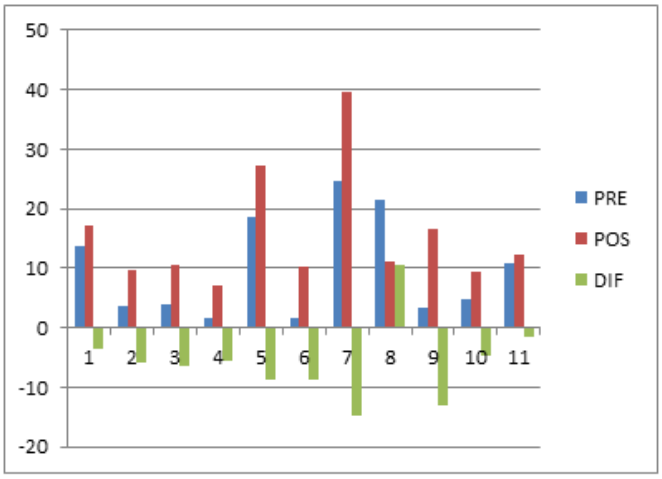

Figure 4. Represents the CDI / TTM overall pre and post intubation rate, an increase in the index measuring post in 90.90% of participants corresponding to 10 subjects and decreased 10.10% is observed corresponding to one subject. The increase in the overall rate represents an increase in the number of signs and symptoms that are related to alterations in the functioning of the ATM.

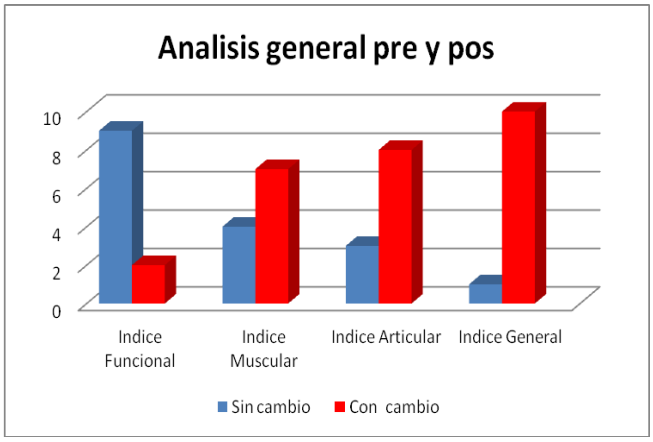

Figure 5. Changes in the functional, muscular, articular and general index after intubation procedure are shown. The 18% decrease functional index, 81.81% of participants increase muscle index, 63.63% of participants' present increase in articular index and 81% of the overall index present symptoms associated with dysfunction in the joint Temporomandibular.

Table 1. Analysis de WILCOXON.

Indices	Valor P	Result ado
Functional index	0,1855	No changed
Muscle index	0,01684	Changed
Articular index	0,0611	No changed

on the muscle of the operation ATM in the tenderness of the masticatory muscles, which may be associated with painful symptoms in the craniofacial area.

The CDI / TTM index to assess the performance of ATM quickly and quantify the number of signs and symptoms that are occurring, so as to prevent future changes in these structures.

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