205 - POSTURE IN MOUTH BREATHING CHILDREN

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INTRODUCTION

The respiration has a key role in the growth process, to provide the human body the energy it needs to perform its tasks (GURFINKEL, 2004). The change in breathing pattern to a nasal breathing is a functional adaptation that entails changes not only in body organs and systems directly involved with the breath, but also in emotional behavior of that individual as a whole, resulting in a dynamic body modified (SAMPAIO, 2005).

Body posture is the position or attitude that the body comes forward to activities and situations, and depends on a balance between different body structures, which ensure support and movement. (KISNER and COLBY, 1998).

Is considered therefore that the characterization of postural problems specific to oral breathing may contribute to subsidies for monitoring breathing children, promoting early detection of postural deviations and is critical to developing educational programs for parents and teachers. Also assist in developing appropriate physical therapy interventions rehabilitator character, thereby contributing to the promotion of health of mouth breathing children. This study aimed to know the posture of mouth breathing children aged 4 to 14 years.

METHODOLOGY

Were part of the population of this investigation breathing children, and the sample consisted of children aged four to fourteen years of both sexes, breathing, directed by the medical doctor of the university hospital's little angel (Hupa) in city of Itajaí (SC) during the period September to December 2008. All referred children were referred for surgical procedures for adenoidectomy, tonsillectomy or adenotonsillectomy by the otolaryngologist.

Exclusion criteria were the sample participants responsible for children who have not agreed to sign an informed consent, children who were not breathing, or breathing that had not received an indication for surgical procedure mentioned above and also those who were not pursued by the university hospital's little angel (HUPA).

Was initially made contact via telephone for brief explanation of the research, application of appropriate clothing for postural assessment (bikini for girls and swimming trunks for boys) and scheduling the day and time for data collection, which was held at the physiotherapy clinic the UNIVALI.

During the interview were explained the procedures to be performed during the research and its importance. After, information was collected regarding the characteristics of the breathing of the child and their complaints and the sequence was performed static postural assessment with children.

During static postural assessment of children, they remained while standing with feet parallel and arms at your sides, while the examiners remained at about two to three meters away from the child evaluated. Were assessed the following structures: head, shoulders, waist, spine, thoracic and lumbar spine, knee and ankle in the anterior, posterior and lateral as static evaluation form, based on (Barros Barros Filho (2002); Bienfait (1995) and Santos (2001).

Is important to report that at the end of the static postural assessment, the important findings, both related to postural changes, for the daily activities that could be related to mouth breathing children, were explained and discussed with parents or guardians.

The second stage of the research data collected were treated by means of statistics (frequency distributions and simple cross) seeking to establish the relationship between postural changes and found breathing, duly substantiated in literature.

RESULTS AND DISCUSSION

Were evaluated 31 (thirty one) children aged between 4 (four) and 14 (fourteen) years, fifteen (15) girls and 16 (sixteen) children.

With regard to etiology, all children evaluated in our study, the cause of mouth breathing to nasal obstruction caused by hypertrophy of the pharyngeal (or "adenoids") and / or palate with surgical indication. The literature indicates that these disorders are among the main causes of nasal obstruction in children, including even the allergic rhinitis and nasal septum deviation (MOTONAGA, BERTI e ANSELMO-LIMA, 2000; OLIVEIRA, 2004; WECKX e WECKX, 1995).

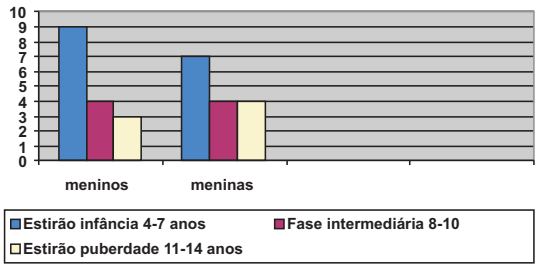
Respect to gender, there was a balance between boys and girls, as mentioned in the literature. In this sense, the studies indicate a slight predominance of boys over girls, as seen in the polls di Francesco (2004) and Yi et al. (2003). Thus, most authors, Kharbanda (2003) mentions that in relation to gender, the difference is always discreet, and no prevalence between genders with regard to the development of mouth breathing syndrome.

Research has been undertaken with children at different ages. Di Francesco (2004) in a study with 142 patients, worked with breathing children aged 2 to 16 years, with most of it was between 3 and 7 years. Mizuta et al. (2004) evaluated 52 children 5 to 10 years.

In our study, the age group of children participating in the survey was very broad, ranging from 4 (four) to 14 (fourteen) years, as already mentioned. This variation was due to the fact that we have evaluated the children enrolled in a University Hospital ENT little angel, selected for the surgical procedure adenectomia, tonsillectomy or adenotonsillectomy, and were part of a survey taken over the course of medicine, speech therapy, dentistry and physiotherapy.

For purposes of analysis children were classified according to age in the period considered as the spurts of growth, as shown in the chart below:

Figure 1. Age children and relationship to growth spurts



This classification was carried out in order to broaden the understanding of postural changes found, or rather, to differentiate them of posture own these periods. So it is important to report that, although the sample with wide variation in age has initially been a complicating factor for the analysis of results, it was possible to verify the presence of postural changes more drastic or different from those characteristic of periods of spurts.

The growth spurts are considered developmental stages of children and adolescents in which the growth becomes more evident and faster, according to Saito (2001).

When the child is in spurts during puberty or adolescence can be considered, as stated Kendall et al. (2007), that the posture of a child about 10 years is more like the posture of an adult of a younger child. The curves of the spine are almost normal and the less prominent shoulder blades. Is characteristic of young children presenting abdominal protrusion, but at approximately 10-12 years of age there is a noticeable change when the waist line becomes relatively smaller and abdominal protrusion disappears.

Accordingly, was the basis of these considerations we seek to identify the postural changes of the children in the study. Changes that are described below demonstrate a posture different from those reported previously, where changes are due only to bodily changes of old age.

In relation to the positioning of the head, the anterior was present in 26 children, indicating that 83% of the sample showed this change. Was also established that 28 children, who account for 90% of the sample showed a reduction of the cervical curvature. Relating the position of the head with the cervical spine can be seen, that almost 84% of children had both disturbances.

Some studies have shown that breathing interferes with the arc of flexion of the cervical spine, promoting a reduction in the space between the first two cervical vertebrae, leading consequently to an anterior position of the head (ABRANTES, BRAGA e SILVA, 2002; MARINS, 2001; FARAH, TANAKA, 1997; ARAGÃO, 1991).

In the position of the cervical spine in children assessed in our research, we found that 90% had reduced physiological curvature, and relating the position of the head with the cervical spine detected that 84% of children had both disturbances.

The association of the head forward with the reduction of cervical curve form a set of postural changes often seen in studies that address the postural changes of the mouth breather. Authors as yi et al. (2003), Solow, Siersback and Strike-Nielsen (1984) mentioned in his research that mouth-breathing children can observe an increase of the cranial-cervical region, with anterior displacement of the center of gravity, which provides both an anterior head , as a reduction of cervical curvature.

Depending on the postural pattern adopted by mouth breathing occurs to reduce the volume of air inhaled, oxygenation, nutrition affecting muscle and promoting the reduction of muscle tone in the complex oro-facial and body, further reinforcing this postural pattern (ANDRADE et al., 2005; DI FRANCESCO et al., 2004; TESSITORE, 2004; CARVALHO, 2003; BARBOSA et al., 2001;; SONCINI E DORNELLES, 2000; MOTONANGA, 2000;; GOMES, 1999).

Beyond the head forward and the reduction of cervical lordosis, other changes peculiar mouth breathing is the internal rotation of the shoulders, which was present in all children evaluated in our study. Internal rotation of the shoulders was associated with winged scapula in 74% of children. All other children with shoulders internally rotated the shoulder blades had abducted.

Similar studies, in which the posture of mouth breathing children was evaluated, also showed that this change was always present. Yi et al. (2003) found internal rotation of shoulder in 90% of the children, and in addition to internal rotation of the shoulders, the same as found in our study also showed the blades were changed, they found themselves hauled in 75 or abducted % of children.

In mouth breathing, posture, internal rotation of the shoulders tends to occur as a consequence of the postural changes of the head and neck, in a quest to restore the body balance, as described Carvalho (2003). This author also says that, the head forward and the reduction of cervical curvature also lead to reduced chain length myofascial inspiration, which also causes internal rotation of the shoulders, retraction of the pectoralis minor muscle, which might lead to misalignment shoulder, making the blades winged or abducted.

Carvalho (2003) states that the shoulders rotated internally compress the chest, leaving the chest expansion impaired and thus developing incorrect movements of the chest cavity that also alter the balance shoulder, leaving the winged scapula.

Meet the previously mentioned research, developed by Carvalho (2003), in our study had a thoracic curvature was reduced in 18 children (58%). Can be considered, as the authors describe that the reduction of thoracic kyphosis in the mouth breathers develop as a result of postural imbalances of the head and neck and due to the inspiratory retraction of the chain.

The lumbar segment described in research with children breathing is usually in concavity, accompanied anterovertida pelvis, as outlined oak (2003) and Yi et al. (2003). The author believes that the spine is well positioned because in attempting to balance the center of gravity of the body in response to the position of the head and shoulders.

However, in our study this was not observed. Contrary, eighteen (18) children (58%) had lumbar curvature with physiological and 10 children (32%) had curve decreased. Only two children, one aged 4 years and another aged 7 had increased lumbar lordosis.

Already, the positioning pelvic, twenty-three (23) children (74%) showed retroversion, and only 8 (25%) had pelvic anterior tilting. The difference in attitude of the segment lumbopelvic found between our study and reported in the literature, leads us to reflect on the way of body posture. The research studies cited the increase in lumbar lordosis and pelvic anterior tilting used to describe a second visual postural evaluation Kendall et al. (2007) not to mention the confirmation of the changes by palpation of the bony structures, as recommended Bienfait (1995) and Santos (2001).

In our study, in addition to palpation of the lumbar spine, we used the comparison of iliac spines, anterior and posterior, as described by those authors. This assessment procedure, although it has a character of subjectivity, provides a better indicator that the use only of the inspection without palpation.

Some authors also associate the presence of abdominal protrusion of lumbar concavity and anterior tilting the pelvis, as is the case and weck weck (1995). Pointing out that the abdominal protrusion attached to body growth of children up at around ten to twelve years old, and only when the waist line becomes relatively smaller than the pelvis is that the abdominal protrusion disappears, according to Kendall et al. (2007).

Pelvic retroversion, found in children evaluated in our study appears to be related to the posture of the limbs, as thirteen (13) children had knee hyperextension. Hyperextension of the knee may, on several occasions, be related to pelvic retroversion that occurs as a result of retraction of the hamstring muscles, as described Bienfait (1995) and Kendall (2007).

However the postural change in the lower limbs was the valgus knee, which was present in twenty-one (21) children. Carvalho (2005) reports that the hyperextension, associated with valgus knees are common in the mouth breathers due to pelvic imbalance. Still, most of the research on the posture of the mouth breather describes the change very much present in the lower refers to the valgus knee. Oliveira et al. (2005) reports that this change is present in approximately 50% of children with mouth breathing.

Daily activities:

Performance characteristics taken during daily activities were reported by parents or guardians at the time of static postural assessment, with the help of an interview prepared by the researcher.

All parents or guardians mentioned behavioral characteristics typical mouth breather. The characteristics pointed out the presence of snoring during sleep, and excessive salivation were mentioned by sixteen (54.83%) parents or guardians. Rizzo (2003) argues that these are findings that should always be evaluated by health professionals involved in the treatment of chronic mouth breathing.

Regarding the physical activity, all children evaluated in our study, performed exercises and physical activities in school during physical education, however, parents or guardians of 21 children reported that their children often feel tired during the performance of activities. According to Sá Filho (2004), hypotonia of respiratory muscles, force the child to achieve a faster breathing short and therefore makes it less stress support, developing fatigue easily when performing a physical activity.

In our study, according to the mentioned by parents or guardians, it was possible to consider that agitation during sleep, including sleep disruption predominantly seen in six of the children. These only two had nocturnal enuresis. Montovani (1995) and Krakauer (1994) stated that nasal obstruction causes a disruption of airflow in the upper airway, causing snoring and apnea, but also causing enuresis.

Performance characteristics, as well as postural analysis in children, were informed and discussed with parents or guardians. Sought to provide information that would serve to monitor the growth and development body of the children, especially since all children after the day of assessment underwent surgery for airway clearance. In this sense, the advice to parents and guardians to seek to observe the breath of children after surgery, as well as body posture and behavior during daily activities, such as inattention and fatigue.

FINAL CONSIDERATIONS

Has become evident through research that mouth breathing children, aged four to fourteen years, with the surgical procedure for adenoidectomy, tonsillectomy or adenotonsillectomy had postural changes in one or more of the following body segments: head, shoulder girdle, shoulders, spine, backbone, spine, pelvis and knees.

Was found that one of the most significant changes was the head forward, which in most of the children was associated with reduction of cervical curve.

Other change in this posture all the children surveyed referred to the internal rotation of the shoulders, being associated with winged scapula in more than half of the children.

Yet according to the report of the parents, there is a relationship between the behavioral characteristics exhibited by the children and breathing, and the most frequent complaint reported by them, frequent fatigue during physical activity. We suggest that this behavioral peculiarity is compounded by postural pattern found in children, since the compensation postural analysis can reduce mobility and chest inspiratory muscle function, predisposing to shorter breaths and superficial.

We consider it of utmost importance to information and advice about breathing to parents and teachers, including physical education teachers to refer children with suspected breathing health professionals such as ENT, physiotherapist or the audiologist.

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POSTURE IN MOUTH BREATHING CHILDREN
ABSTRACT

Mouth breathing causes several changes in the individual, from its body position to emotional behavior. According to that standpoint, the aim of this work is to characterize body posture in mouth breathing children aged from 04 to 14 years for both sexes, seeking to differentiate their positions with the cause of mouth breathing and relate them to the complaints mentioned by responsible. Children who participated in the study received an indication for surgical procedures for adenoidectomy, tonsillectomy or adenotonsillectomy for otolaryngologist at Hospital Universitário Infantil Pequeno Anjo (HUPA – Little Angel Infancy University Hospital)in the city of Itajaí (SC). The methodology involved interviews with those responsible to collect information about, seeking behavioral changes during the daily activities. Besides the interviews, one Static Postural Assessment with each child was held, according to Barros Filho (2002); Bienfait (1995) and Santos (2001). To understand and manage the data collected we used the statistics, looking to establish the relationship between postural changes and found oral breathing, the important findings, both related to postural changes, as the daily activities, which could be related to mouth breathing children. The data gathered were explained and discussed with parents or guardians after the Static Postural Assessment based on literature. As a result, we hope to have the production of subsidies for reflection and discussion about the consequences of postural mouth breathing in children, and for the development of educational programs for caregivers and teachers, or physiotherapeutic interventions in rehabilitation nature, contributing to the promotion of health for those children.

KEYWORDS: postural change, child, mouth breath.

LA POSTURE CHEZ LES ENFANTS DE LA RESPIRATION BUCCALE
SOMMAIRE

Respiration par la bouche entraîne plusieurs changements dans l'individu, depuis sa posture sur le comportement émotionnel. Par conséquent, l'objectif était de caractériser la posture de respiration par la bouche des enfants âgés de 04 à 14 ans de deux sexes dans une tentative de différencier leurs positions en fonction de la cause de la respiration par la bouche et les rattachent à ces plaintes par responsable. Les enfants qui ont participé à l'étude ont reçu une indication pour les procédures chirurgicales pour adénoïdectomie, amygdalectomie ou petit ange adenotonsillectomy otolaryngologiste hôpital de l'université (hupa) dans la ville de itajaí (sc). La méthodologie comprenait des entretiens avec des responsables qui cherchent à recueillir des informations sur les changements de comportement au cours des activités quotidiennes. Au-delà de l'entretien, une évaluation posturale statique avec chaque enfant a été exécuté, selon barros filho (2002); bienfait (1995) et les saints (2001). De travail pour utiliser les données statistiques collectées, en essayant d'établir la relation entre les changements de posture et la respiration constaté conclusions orales importantes à la fois référence aux changements de posture, pour les activités quotidiennes qui pourraient être liées aux enfants la respiration buccale. Les données ont été expliqués et discutés avec les parents ou tuteurs, après l'évaluation posturale statique basée sur la littérature. En conséquence, nous avons la production de subventions pour la réflexion et la discussion sur les conséquences de posture de respiration par la bouche chez les enfants, ainsi que le développement de programmes éducatifs pour les soignants et les enseignants, les interventions de caractère physique ou la thérapie reabilitatório, contribuant à la promotion de santé de ces enfants.

MOTS-CLES: le changement de posture, d'un enfant, respiration par la bouche.

POSTURA EM LOS NINOS RESPIRAR POR LA BOCA
RESUMEN

La respiración bucal ocasiona varios cambios en el individuo, desde su postura corporal a la conducta emocional. Por lo tanto, el objetivo fue caracterizar la postura de los niños respirar por la boca de edad 04 a 14 años de ambos sexos, en un intento para diferenciar sus posiciones con arreglo a la causa de la respiración por la boca y los relacionan con las quejas por responsable. Los niños que participaron en el estudio recibieron una indicación para los procedimientos quirúrgicos para la adenoidectomía, amigdalectomía o adenoamigdalectomía angelito otorrinolaringólogo del hospital universitario (hupa) en la ciudad de itajaí (sc). La metodología consistió en entrevistas con funcionarios de tratar de recoger información sobre los cambios de conducta durante las actividades diarias. Más allá de la entrevista, una evaluación postural estática con cada niño se llevó a cabo, según barros filho (2002); bienfait (1995) y santos (2001). De trabajo a utilizar las estadísticas de los datos recogidos, tratando de establecer la relación entre los cambios de postura y la respiración oral encontrado resultados importantes tanto en referencia a los cambios posturales, para las actividades diarias que podrían estar relacionados con los niños respirar por la boca. Los datos se explicaron y debatieron con los padres o tutores, después de la evaluación postural estática sobre la base de la literatura. Como resultado, tenemos la producción de subvenciones para la reflexión y el debate sobre las consecuencias de la postura de respiración bucal en los niños, así como el desarrollo de programas educativos para los cuidadores y los profesores, intervenciones de carácter físico o la terapia reabilitatório, contribuyendo a la promoción de la de la salud de estos niños.

PALABRAS CLAVE: el cambio postural, infantil, la respiración bucal.

POSTURA CORPORAL DE CRIANÇAS RESPIRADORAS BUCAIS
RESUMO

A respiração oral acarreta diversas modificações no indivíduo, desde sua postura corporal até o comportamento emocional. Nesta perspectiva, o objetivo deste trabalho foi de caracterizar a postura corporal de crianças respiradoras orais na faixa etária de 04 a 14 anos de ambos os sexos, buscando diferenciar suas posturas de acordo com a causa da respiração oral e relacioná-las às queixas mencionadas pelos responsáveis. As crianças que participaram do estudo receberam indicação para os procedimentos cirúrgicos de adenoidectomia, tonsilectomia ou adenotonsilectomia por médica otorrinolaringologista do Hospital Universitário Infantil Pequeno Anjo (HUPA), na cidade de Itajaí (SC). A metodologia envolveu entrevista com os responsáveis buscando coletar informações sobre alterações comportamentais durante as atividades diárias. Além da entrevista, uma Avaliação Postural Estática com cada criança foi realizada, de acordo com Barros Filho (2002); Bienfait (1995) e Santos (2001). Para trabalharmos os dados coletados utilizamos a estatística, procurando estabelecer relação entre as alterações posturais encontradas e a respiração oral, os achados importantes, tanto referentes às alterações posturais, quanto às atividades cotidianas, que podiam ter relação com a respiração oral das crianças. Os dados foram explicados e discutidos com os pais ou responsáveis, após a Avaliação Postural Estática fundamentado na literatura. Como resultados, esperamos ter a produção de subsídios para reflexão e discussão a respeito das conseqüências posturais da respiração oral em crianças, bem como para a elaboração de programas educacionais para cuidadores e professores, ou de intervenções fisioterapêuticas de caráter reabilitatório, contribuindo para a promoção da saúde dessas crianças.

PALAVRAS-CHAVE: alteração postural, criança, fisioterapia, respiração oral.

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