01 - EFFECTS OF THE TREATMENT MANIPULATIVO IN THE VOLUMES AND LUNG CAPACITIES.

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INTRODUCTION

The recognition of the importance of the system skeletal muscle in the global organization of the body, your predisposition to the dysfunction and the recovery of such alterations and the recognition of the ability of the therapy for normalization of such dysfunction through an or more of the several resources manipulativos it is essential. It is known that a dysfunction of the system skeletal muscle can interfere in the breathing and circulatory function, and few people notice the importance of a correct breathing, because it is it is not just responsible for supplying oxygen to the body, but it is also an important middle of catabólitos elimination. Therefore if the structure is not normal, it cannot usually work and your consequences can be of great extension (CHAITOW, 1982).

When recovering or to improve the function of the system skeletal muscle, it can be foreseen that all the related parts if they benefitted, be these, other muscle-skeletal components or areas embraced by the nervous system and circulatory.

For so much it was aimed at through this work to identify the variations in the volumes and lung capacities after the manipulation of the third cervical vertebra. Being like this, it is believed that the cervical manipulation aids in the improvement of the volumes and lung capacities through an I stimulate mechanic generated on the nerve frênico.

DEVELOPMENT

The manual therapy uses therapies extremely necessary and sophisticated manipulativas, which it considers the system of muscles, bones and articulations, mainly the one of the column, as reflex of the diseases of the body and also the responsible principal for the I begin of the pathological processes. At first, it is difficult to understand the mechanism for which a small problem in the spine will begin a disease in the heart or in the lungs, but, however they exist visible proofs that this can really happen (CHAITOW, 1982).

Being, the manual therapy consists like this of one of range of techniques, whose action mechanisms look for him/it I alleviate of the pain, through effects generated in the central nervous system, for the incentives caused by the therapist, through manipulations or mobilizations, which they can be used, usually in combination during the treatment for obtaining of a better result, in contradiction with other conservative treatments (GROSS et al, 2002; HING et al, 2002; HURLEY et al, 2002).

The cervical column cannot be compared to the two other segments raquidianos, because anatomicamente is constituted for the protection of the spinal marrow, while fisiologicamente, in the dynamic function and in the static, he/she has a descending mechanics. In the dynamic function your role is of orientation of the glance, already in the static it is of balance of the head (BIENFAIT, 1997) .

The breathing function is essential to the maintenance of the life and it can be defined, in a simplified way, as a change of gases between the cells of the organism and the atmosphere. Although he/she lives emerged in gases, the human organism needs special mechanisms of the breathing system to isolate the oxygen of the air, and at the same time, to remove the dióxido of carbon of the blood to eliminate him/it in the atmosphere (GUYTON et al, 2002; BAGATINI et al, s/d).

So that those gaseous changes can be made the breathing system it possesses two mechanisms. The first of them is the mechanism inspiratório, that is responsible for the expansion of the lungs, for the descending incursion of the diaphragm that the principal muscle inspiratório, inervado for the nerve frênico is considered, which leaves of the roots of C3, C4 and C5 and for the elevation of the costal arches, being their second the mechanism expiratório, which is caused by the gradual decréscimo of the activity of the muscles inspiratórios and for the accumulated energy for the elastic structures of the lungs and of the thoracic box, which promote the reduction of the lung volume, moving like this outside the air of the lungs (BAGATINO et al, s/d; MANÇO et al, s/d).

Our breathing can be governed so much by the autonomous nervous system, as to be controlled voluntarily could still present you vary in accordance widths the individual's state (SOUCHARD, 1989) .

The breathing system is composed by volumes and capacities, where those volumes are represented by the average volume that corresponds to the volume of inspired air and expired in each normal breathing, while the capacities are formed by the combination among two or more of those volumes. (GUYTON et al, 2002; BAGATINI et al, s/d).

For these reasons to the relationships between the cervical column and the breathing system will be described in this article, because, analyzing anatomicamente the nice system and the nerve frênico, that are directly the principal structures linked to the cervical vertebras C3, C4,C5 until the diaphragm take us to notice the direct relationship of these two structures.

METHODOLOGY

To present research it was characterized by being quantitative and qualitative, of longitudinal cut. Whose objective was to verify the effects of the manipulation of the third cervical vertebra on the volumes and lung capacities.

The participant population of the research was composed by academics of the course of physiotherapy of the university Assis Gurgacz (FAG), being the composed sample for 20 academic of the feminine sex, between 18 and 24 years, the ones which incluian-if in the inclusion criteria: signing the term of free explanation, in the moment of the evaluation they be not making use of any medicine as corticóides or antiinflamatórios that could interfere in the results and not presenting historizes of lung diseases nor they be smoking, being the others excluded of the research.

The sample was chosen intentionally, where the selected individuals underwent an evaluation for the researcher in the dependences of the section of manual therapy of the it Practices medicine of Physiotherapy of Faculdade Assis Gurgacz, located in the city of Rattlesnake in the state of Paraná. And firstly an espirometria was accomplished with an espirometro of the mark Personal computer Lab 3300, in a calm and airy atmosphere, with the patient in the seated position, the leaning feet in the soil and the backs in the prop of the chair. Firstly the patient accomplished a maximum inspiration, and later, with the nasal clip and with the buccal in the mouth, you/he/she was requested a maximum and constant expiration, until your limit, followed by a new inspiration, again until the total lung capacity. Another orientation went to the proof it was accomplished with the maximum of possible force. The test was repeated three times for the learning of the technique, without the obtaining of the results with analysis purpose. There was a period of ten minutes of interval and the procedure was accomplished again where it was obtained

the best curve for analysis and registration. After the espirometria he/she took place the manipulation of the third cervical vertebra, with the lying academic in number decubitus, extended legs, physiotherapist positioned behind the academic placing one of the hands flattened on the face of the academic, the other in form of L under the thorny process of the vertebra with the leaning thumb on the jaw and the perpendicular other fingers to the neck, where the physiotherapist maintained a neutral flexo-extension of the neck, inclination to the side to the side of your hand and rotation opposite, she was reduced the tensions of the fabrics and she took place the thrust (pulse in high-speed and you/he/she lowers width) in rotation. This manipulation was accomplished bilaterally. Therefore after this, a new espirometria was accomplished, with the same parameters used in the first. The patient stayed in the same atmosphere per stocking-hour and after you/he/she was accomplished an esperiometria again.

The study was accomplished in the period from 12 to June 26, 2008, with schedules previously established. And the sample was just submitted the an only therapy, and he/she had how I benefit, an improvement in your volumes and capacities after the manipulation. The same ones were subject to a small discomfort in the musculature of the cervical area, during the manipulation, which was avoided always looking for already the patient's limit and the use of protocols existent, your personal data were not also published and your treatment was individualized.

After the obtaining of the data, these were calculated and controlled in the program ANOVA with 5% of significância and in the Micro Soft Excel 2007.

RESULT AND DISCUTION

This research analyzed the influence of the manipulation of the third cervical vertebra on the volumes and lung capacities. For so much, the test ANOVA was used for observations pareadas, with significância level p> 0,05.

For the studied group submitted to the analysis of the test ANOVA, significant increase was not observed (p <0,05), in the volumes and lung capacities, demonstrating as soon as there was an increase of these, however not significant estatisticamente.

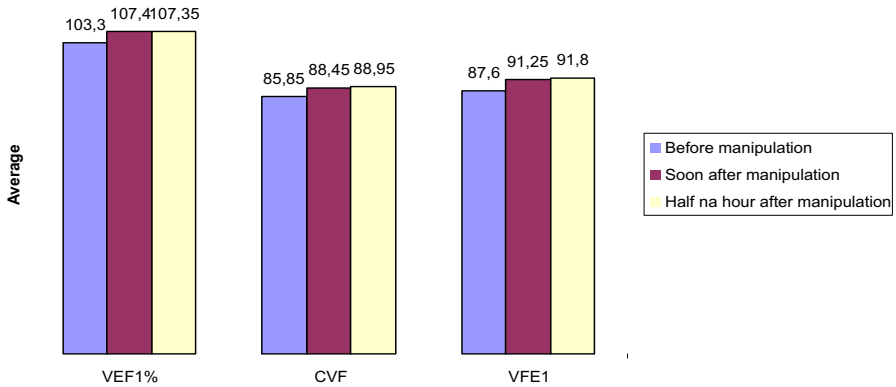
Table 01: Results ANOVA with 5% of significancia.

		AVERAGE	STANDARD DEVIATION	P- VALUE
VEF1%	Before manipulation.	103,30	9,92	
	Soon after manipulation.	107,40	7,14	0,21
	Half na hour after manipulation.	107,35	7,48	
CVF	Before manipulation.	85,85	6,55	0,27
	Soon after manipulation.	88,45	6,29	
	Half na ho ur after manipulation.	88,95	6,54	
VEF1	Before manipulation.	87,60	9,59	
	Soon after manipulation.	91,25	7,65	0,23
	Half na hour after manipulation.	91,80	7,73	

Source: author

After the obtaining of the results through the test ANOVA, the picked data were transported for the program Micro Soft Excel, where through the results of the average, the graph was formulated that proceeds below, which demonstrates a small increase in the volumes and represented lung capacities, for the forced vital capacity (CVF), tiffeneau index (VEF1%) and volume forced expiratório in the first minute (VEF1). This demonstrates although the effects are not just momentary, but that these stay after the manipulation, demonstrating that this technique can be used as treatment for several patient, so much with breathing problems, as it can influence in breathing disturbances, as to alter the mechanics ventilatória if some vertebral dysfunction settles at the cervical level.

GRAPHIC 01: You measured of VEF1%, CVF and VEF1.



According to Bagatini and Grando (s/d), that effect happens due to the inervação of the muscle diaphragm, main breathing muscle, that it leaves of C3 C5, and it takes I get so much fibers sensitive as motive of this nerve, controlling this way the frequency, the depth and breathing pattern.

She still can to say that this effect is gotten thanks to the repercussion that the manipulation presents, therefore each metâmero is responsible for the inervação of an entire structure that compose the vertebra (RICHARD & SALLÉ, 2002).

For Almeida (s/d), the effects of that manipulation still happen also on the vegetative nervous system, that leaves of the cervical column and he/she becomes responsible for actions inibitórias or exitatórias, that work harmoniously in the coordination of the visceral activity.

As he/she tells Souchard (1989), the diaphragm is essential for the survival, because of him it depends the operation of functions said hegemônicas for our life, as the function breathing, circulatory and digestive, being like this if this is not working perfectly, it can I came to alter those functions, generating countless consequences.

Another study accomplished by Stapaite & Przysiezny (2004), it demonstrated that mobilizations diafragmática influences in the increase of the width of movement of the cervical column, showing this way one more connection between the breathing system and the cervical column.

It is known that few works were accomplished in this area, but some of these accomplished, show those connections, not just of the cervical column with the breathing system, but also of the whole column with your inervação, as in the work accomplished by Risso (2005) that demonstrated the connection of a thoracic dysfunction with stomach disturbances.

CONCLUSION

After the accomplishment of this work it can be verified that one stimulates mechanic on the nerve frênico, through the manipulation of the third cervical vertebra it is capable to improve the volumes and lung capacities.

Because as he/she tells Chaitow (1982), few people know about the real importance of a correct breathing and of as a dysfunction of the system skeletal muscle can interfere in the breathing function. When recovering or to improve the function of the system skeletal muscle, it can be foreseen that all the related parts if they benefitted, be these, other muscle-skeletal components or areas embraced by the nervous system and circulatory. This way it is the suggestion of one more treatment technique for the patients.

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EFFECTS OF THE TREATMENT MANIPULATIVO IN THE VOLUMES AND LUNG CAPACITIES.

ABSTRACT:

The breathing is covered of a considerable importance in the approach of the manual therapies. The relationship between the breathing mechanics and the cervical column many times is neglectful. Few physiotherapists recognize that the manipulation of the third cervical vertebra can be used as a treatment form with repercussions in several areas. This research aimed to evaluate the influences of the manipulation of the third cervical in the volumes and lung capacities. The study consisted of a sample of 20 academics, among 18 and 24 years, that filled out the inclusion criteria. The academics selected were submitted, firstly, to an espirometria, followed by the manipulation of the third cervical vertebra, soon after to a new espirometria, which was reapplied or re-done half hour after the manipulation. We observed (it gets better) the increase in the volumes and capacities after the cervical manipulation, that stayed even after the accomplishment of the third espirometria. It was concluded this way that the cervical manipulation helps in the improvement of the volumes and lung capacities

Key-words: Cervical manipulation. Diaphragm. Breathing system.

EFFETS DE TRAITEMENT MANIPULATIVO VOLUMES ET DE LA CAPACITÉ PULMONAIRE.

SUMMAIRE

Le souffle est d'une importance considérable dans le traitement des manuels de thérapie. La relation entre la mécanique respiratoire et la colonne cervicale est souvent négligé. Peu de physiothérapeutes reconnaître que la manipulation de la troisième vertèbre cervicale peut être utilisé comme une forme de traitement est en train de s'étendre à des régions différentes. Cette étude visait à évaluer l'influence de manipulation de la troisième vertèbre cervicale des volumes et la capacité pulmonaire. L'étude consistait en un échantillon de 20 personnes étaient des femmes, entre 18 et 24 ans, qui satisfait aux critères d'inclusion. Les personnes sélectionnées ont été présentés une première conduite de la spirométrie, suivie par la manipulation du troisième col de l'utérus, peu après une nouvelle spirométrie, qui a été de nouveau demi-heure après l'opération. Il ya eu une augmentation des volumes et la capacité du cou après la manipulation, qui est restée, même après l'achèvement de la troisième spirométrie. C'est ainsi que la manipulation du cou contribue à améliorer le volume et la capacité pulmonaire.
Mot-clé: La manipulation du col de l'utérus. Diaphragme. Système respiratoire.

EFECTOS DEL TRATAMIENTO MANIPULATIVO VOLÚMENES Y EN LA CAPACIDAD PULMONAR.

RESUMEN

La respiración es de considerable importancia en el tratamiento de la terapia manuales. La relación entre la mecánica respiratoria y la columna cervical es a menudo descuidado. Son pocos los fisioterapeutas reconocen que la manipulación de la tercera vértebra cervical puede ser utilizado como una forma de tratamiento se está extendiendo a las distintas regiones. Este

estudio tuvo como objetivo evaluar la influencia de manipulación de la tercera vértebra cervical en los volúmenes y la capacidad pulmonar. El estudio consistió en una muestra de 20 individuos eran de sexo femenino, entre 18 y 24 años, que cumplieron con los criterios de inclusión. Las personas seleccionadas se presentan en primer lugar llevar a cabo una espirometría, seguida por la manipulación de la tercera cervical, poco después de una nueva espirometría, que fue de nuevo media hora después de la operación. Hubo un incremento en los volúmenes y la capacidad después de la manipulación del cuello, que se mantuvo incluso después de la finalización del tercer espirometría. Así pues, es que la manipulación del cuello ayuda a mejorar los volúmenes y la capacidad pulmonar.

Palabra clave**:** La manipulación cervical. Diafragma. Sistema respiratorio.

EFEITOS DO TRATAMENTO MANIPULATIVO NOS VOLUMES E CAPACIDADES PULMONARES.

RESUMO

A respiração reveste-se de uma considerável importância na abordagem das terapias manuais. A relação entre a mecânica respiratória e a coluna cervical muitas vezes é negligenciada. Poucos fisioterapeutas reconhecem que a manipulação da terceira vértebra cervical pode ser utilizada como uma forma de tratamento com repercussões em diversas regiões. Esta pesquisa objetivou avaliar a influencia da manipulação da terceira vértebra cervical nos volumes e capacidades pulmonares. O estudo constou de uma amostra de 20 indivíduos do sexo feminino, entre 18 e 24 anos, que preencheram os critérios de inclusão. Os indivíduos selecionados foram submetidos primeiramente a realização de uma espirometria, seguida da manipulação da terceira vértebra cervical, logo após a uma nova espirometria, a qual foi reaplicada meia hora após a manipulação. Observou-se um aumento dos volumes e capacidades com a manipulação cervical, que permaneceu mesmo após a realização da terceira espirometria. Concluiu-se desta forma que a manipulação cervical auxilia na melhora dos volumes e capacidades pulmonares.

Palavra-chave: Manipulação cervical. Diafragma. Sistema respiratório.