198 - POSTURAL FACILITATOR EVALUATION AFTER INTERVENTION IN A CHILD WITH CEREBELLAR ATAXIA

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INTRODUCION

- Cerebral Palsy Cerebellar Ataxia (PCAC)

PCAC in the balance is compromised and changes in speech are common, and mental retardation and epilepsy frequently observed. This group has little chance of functional improvement. [1.2]

The cerebellar ataxia due to a PC is a rare clinical condition, was initially characterized by hypotonia, and little by little, there are changes in the balance (ataxia axial) and, less commonly, coordination (ataxia appendicular). His motion is to increase its base of support may have intentionally tremor.[1.3]

The hypotonia resulting in faulty maintenance of posture, members are easily displaced by a relatively small force and, when tested by the examiner exhibit a range of performance increased. [3.6]

The posture may be distorted due to changes in the control handles proprioceptive operating through the cerebellum. The cerebellum is normally ability to adjust the gain or sensitivity of proprioceptive reflexes that operate on the routes segmental and supra-segmental. If your gain modulation is changed by cerebellar diseases, the automatic adjustments posture may become distorted (Nitrini, 1991; Umphred, 1994). [6]

To Freitas (2003), postural control has two behavioral goals: postural balance and orientation posture. The balance is related to postural control of the relationship between external forces (ie gravitational force), which act on the body, and internal forces (joint torques), which are produced by the body. This control is necessary, therefore, the forces that act on the body and / or produced by the body are accelerating work on it and, consequently, which make them change their alignment and walk away from the desired position or the position considered of greater stability. Thus, the body balance is achieved when all the forces that act on this body, both external and internal, are controlled, which allows the body to remain in a desired position (static balance) or which move in a controlled manner (balance dynamic). [5.6]

This positioning and alignment are achieved through coordinated actions of As Tachdjian (1995), the posture can be defined as the direct relationship of its parts with the line of center of gravity. For that we have a correct posture is needed neuromusculoesquelético integrity of the system. What determines the balance of a body the way it is the location of the so-called center of gravity, which is nothing more to the point of application of gravitational force (weight) [4].

- Involvement Facilitator

The rehabilitation is based on the objective of changing the response of a child with a brain damage similar to that of a normal kid, based on the ability of that person must acquire new responses to stimulation. There are many methods used for treatment of PC, and the classical physical approach [9]

the Bobath method, based on the facilitation of motor inhibition of pathological patterns tônicos through key points of control. [8.9]

Although there are few studies demonstrating the effectiveness of physiotherapeutic techniques in treating children with CP in a careful customary to advise the use of other forms of intervention, particularly those involving patterns reflect and cargo, based on observation of the occurrence of transient increases muscle tone and reactions associated 8.

Little is known about the process of acquisition under facilitation of a treatment based on the principle of spatial summation of nerve synapses and temporal summation of them. Facilitation refers to an increased ability to initiate a motor response through an increase in neuronal activity, and a potential synaptic amended. [9]

The aim of our study was to evaluate posture through the Software SAPO, before and after the procedure therapeutic facilitatório in a child with cerebellar ataxia PC.

METHODOLOGY

Subject

Children with 5 years and one month of age in its history mentions the mother was born at term, type Cesaria birth without complications, weight of 3675, height of 52 cm, head circumference of 36 cm and Apgar 9, with all these characters within the normalidade.Porém still in hospital, was diagnosed neonatal jaundice. In seeking a neurologist 4 months later, gave the same diagnosis of ataxic CP. During the evaluation showed march ebriosa, difficulty in starting the passages of postures, hypotonia of trunk and limbs. In some reassessment motor deficits have been overcome, but not measured quantitatively, because not the purpose of this study.

Protocol for assessment

This study used as a means of evaluating the software program SAPO. This Software for Postural Assessment, is a computer program free for evaluation posture with the database and scientific reasoning with full access the Internet.

SAPO were scanned with the positions of certain points on photographs (spatially size) of the subject under evaluation, these points are typically the anatomical references on the subject's body. From the items scanned, the SAPO automatically provides a series of relevant measures for assessing posture.

To use the program was needed: A computer with Internet access (for installation of SAPO), a camera (it is more practical for this camera is digital and with a minimum resolution of 2 Megapixels), a tripod, a perpendicular hanging on roof. About plumbline two brands must be placed at a distance known DE3 1 meter to perform the calibration of the image in SAPO; brands to put on the anatomical points on the subject (double tape), a minimum area of about 4 x 1 m (for placement of the subject area and to frame the subject in the photo). otografias

To take the photos of subjects:

A) plumbline appropriate space in the ceiling; B) Subject positioned so that the perpendicular and the subject were in

the same plane perpendicular to the axis of the camera; C) The camera positioned to 3 meters away from the subject at a time about half of the stature of the subject; D) framed picture of the subject perpendicular to the camera; E) was used a black rubber mat on which the individual places themselves freely for the first photo-taking. The verbal command was given: "you will be standing in this black belt in a position that you are familiar and comfortable, put your feet the way that is most comfortable for you"; F) Next, draw a chalk outline of the foot right and the left foot of the subject on the carpet; G) After taking the picture in a certain view, the rug was rotated by 90 degrees and the subject instructed to position itself on top of the carpet with their feet on top of the drawing made with chalk; H) Circulation another picture, I) Pictures transferred to your computer.

After the photos transferred to the computer, s were carried out following operations: create a new project, open image, to enter the information of the patient; set protocol to be used, choose an appropriate image to zoom calibration and digitization; calibrate the image ; Mark anatomical points on the picture displayed according to the protocol; another open file (another view), repeat the previous operations, generate and print report.

Protocol for treatment

The treatment strategy was used for the purchase of higher positions as the half-kneeling, kneeling and bipedestação and conduct of the march through the control of the lower trunk static and dynamic, is coaching stability, balance, strengthening of abdominal and lumbar extensor muscles, training the movement of various postures, training march through the Bobath Concept Neuroevolutivo (CNB).

RESULTS

Data obtained from the asymmetry of the projection of the center of gravity during the assessment were:

Evaluation	Data	Revaluation	Of improviment
Asymmetry of the frontal plane	7,7%	- 2,7%	**3.5%**
Asymmetry sagittal plane	60,6 %	18.6%	**3.6%**
Position the projection of the CG on the average position of the ankle (frontal plane:	2,6%	-0,8%	**30%**
Position the projection of the CG on the average position of the ankle (the side):	14,5%	6,8%	**4.6%**

DISCUSSION

According to the results it was possible to observe the change of center of gravity in the patient evaluated, these changes were found in the frontal, sagittal plane and the position of the projection of the CG on the average position of the ankle at the front and side. Comparing the results of the assessment with the revaluation find an improvement in all criteria used by software SAPO.

In the PC ataxia, together with difficulties in relation to the balance, the movement is poorly coordinated, on the basis of wide support, using their hands to support. The lack of motor control is manifested, in particular, the lack of Freagem of articular displacement, causing a tendency to exceed the target [13, 14.]

From the beginning, one should take care of balance and coordination, which is not a fixed function, but necessary in all activities, such as walking. For this reason, children can maintain a fixed position, but it is changing its position, and we lack the balance falls

The tasks covered the activities of daily living (ADL's) are to halt the movement incorrect and leads to physiological movements, always making the children work actively with the therapist. Head and shoulders are the most important key points in building the movement [14.]

In all cases the PC is wrong address only one member, as we should cover all, that is, the whole body. There are better results with younger children, who have not yet begun or at least moved up the wrong way a little, than with those who already automate the movement of wrong way [11, 12.]

The techniques of facilitation to improve mobility and postural stability antigravitacional allowing the motor tasks is executed with minimal compensation and greater efficiency. It was possible to observe during the course of treatment slight improvement in neuropsychomotor development, which confirms the effectiveness of techniques used in the treatment of unaccompanied child. Since the children with CP are typically less collaborative and more dispersed, it contributes significantly to the evolution of the framework of children during the period of treatment. The child stimulated presents a significant response in relation to neuropsychomotor. This theory was proven during treatment we apply the child in questão[14].

Patients with CP should be treated by a multidisciplinary team, in which the main therapeutic approach is undoubtedly the physiotherapy. The various methods used in physical therapy will be used in accordance with the clinical picture. Among them, the method of Bobath, which is based on the inhibition of primitive reflexes and pathological patterns of movement. The physiotherapy care should always take into account the stages of normal psychomotor development (DPMN), and use different types of sensory stimulation and sensory [11, 12. 13.]

CONCLUSION:

It is through this work the effectiveness of intervention a Facilitator improves the symmetry of the projection of the center of gravity through the intervention Facilitator. Resulting in a posture antigravitacional consequently allowing the motor tasks is executed with minimal compensation and greater efficiency. The results presented in this study contribute to a better understanding of human development in different conditions and provide information to support strategies for assessment and intervention.

REFERENCIAS BILIOGRÁFICAS

1. Tiroshi, &. Rabino, S. **Physiotheraphy for children with cerebral palsy**. The American Journal of diseases of children, v. 143, n.5, p.552-5, may, 1989.
2. Sheperd, R. B. **Fisioterapia em pediatria**. 3 ed. São Paulo: 1996.
3. Finkler, M.; Nascimento, P. S. **Abordagem fisioterapêutica na ataxia cerebelar: relato de caso**. Fisiobrasil, Vitória, ano 8, n.70, p.28-31 mar/abr. 2005.
4. Morton S. M.; Bastian A. J. **Cerebellar control of balance and locomotion.** Neuroscientist, United States, v

10, n. 3, p.247-259, 2004.
5. Thach, W. T.; Bastian A. J. **Role of the cerebellum in the control and adaptation of de gait in health and disease**. Progress in Brain Research, Netherlands, v 143, p. 353-366, 2004.
6. Schmahmann, J. D**. Disorders of the cerebellum: ataxia, dysmetria of thought, and the cerebellar cognitive affective syndrome**. Journal Neuropsychiatry Clinical Neuroscience, United States, v 16, n. 3, p.367-378, 2004.
7. Greenemberg, D. A. **Neurologia clínica.** 2 ed. Porto Alegre: 1996.
8. Durigon, O.F.S; Sá, C.S.C.. **Intervenção fisioterápica facilitatória em paciente com encefalopatia não progressiva crônica da infância**. Revista de Fisioterapia da Universidade de São Paulo, v. 3, n. 1/2, p. 54-64, jan./dez., 1996.
9. Bobath B, Bobath K, **Desenvolvimento Motor nos Diferentes Tipos de Paralisia Cerebral,** 1 ed. São Paulo, Manole, 1989.
10. Diament A. **Encefalopatia crônica na infância (paralisia cerebral)**. In: Diament A & Cypel A, editores. Neurologia Infantil. 3ª ed. São Paulo: Atheneu; 1996. p.781-98.
11. Rotta NT. **Encefalopatia crônica da infância ou paralisia cerebral**. In: Porto CC. Semiologia Médica. 4ª ed. Rio de Janeiro: Guanabara Koogan; 2001. p.1276-8.
12. Rotta NT. **Encefalopatia crônica da infância ou paralisia cerebral.** In: Porto CC. Semiologia Médica. 4ª ed. Rio de Janeiro: Guanabara Koogan; 2001. p.1276-8.
13. Weiss H, Betts HB. **Methods of rehabilitation in children with neuromuscular disorders**. Pediatr Clin North Am 1967;14: 1009-17.
14. Nelson KB, Ellenberg lH. **Epidemiology of cerebral palsy**. Adv Neurol 1978;19:421-35.

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POSTURAL FACILITATOR EVALUATION AFTER INTERVENTION IN A CHILD WITH CEREBELLAR ATAXIA

SUMMARY

Introduction: The cerebellar ataxia due to a Cerebral Palsy (CP) is a rare clinical condition, was initially characterized by hypotonic, and little by little, there are changes in the balance and, less commonly, coordination. Objective: This study aimed identify postural changes before and after the procedure therapeutic facilitatório in a child with cerebellar ataxia PC Methodology: Subject: A child under 5 years of age diagnosed with ataxic CP cerebelar.Protocolo of assessment / reassessment: Software Program SAPO. Physiotherapy intervention: Intervention Facilitator: Results: Rating: Asymmetry of the frontal plane: 7, 7% asymmetry sagittal plane: 60,6% projection of the CG's position on the average position of the ankle (frontal plane): 2,6% position of projection CG on the average position of the ankle (the side): 14.5%. Reassessment: Asymmetry of the frontal plane: - 2,7% asymmetry sagittal plane: 18, 6% projection of the CG's position on the average position of the ankle (frontal plane): - 0.8% projection of the CG's position on the average position the ankle (the side): 6,8%.

KEWORDS: Cerebellar ataxia, speech faciltatória, Cerebral Palsy

ABSTRACT

Introduction: L'ataxie cérébelleuse en raison d'une paralysie cérébrale (PC) est l'un des rares état clinique, a été initialement caractérisée par une hypotonie et, peu à peu, il ya des changements dans l'équilibre et, moins fréquemment, de la coordination. Méthodologie: Objet: Un enfant de moins de 5 ans diagnostiqué avec Ataxie CP cerebelar.Protocolo de l'évaluation et de réévaluation: Software Program SAPO (Système d'évaluation posturale). Traitement de physiothérapie: Intervention Facilitateur: Résultats: Note: Asymétrie de l'avant plan: 7,7% asymétrie plan sagittal: 60,6% des projection de la position du CG sur la position moyenne de la cheville (plan frontal): 2,6% des projection position CG sur la position moyenne de la cheville (le côté): 14,5%. Réévaluation: l'asymétrie de l'avant plan: - 2,7% asymétrie plan sagittal: 18, 6% des projection de la position du CG sur la position moyenne de la cheville (plan frontal): - 0,8% des projection de la position du CG sur la position moyenne l'articulation de la cheville (le côté): 6,8%. Discuter: Les techniques de facilitation pour améliorer la mobilité et stabilité posturale antigravitacional permettant le moteur tâches est exécuté avec un minimum d'indemnisation et d'une plus grande efficacité. L'enfant présente stimulé une réponse significative par rapport à neuropsychomotor. Cette théorie a été prouvée au cours du traitement, nous appliquons les enfants préoccupée Conclusion: C'est grâce à ce travail l'efficacité de l'intervention un facilitateur améliore la symétrie de la projection du center de la gravité grâce à l'intervention Facilitateur.

MOTS CLÉS: ataxie cérébelleuse, faciltatória discours, la paralysie cérébrale

RESUMEN

Introducción: La ataxia cerebelosa debido a la Parálisis Cerebral (CP) es una rara condición clínica, fue inicialmente caracterizada por hipotonía, y poco a poco, hay cambios en el equilibrio y, menos comúnmente, la coordinación. Metodología: Asunto: A los niños menores de 5 años de edad con diagnóstico de ataxic CP cerebelar.Protocolo de evaluación y reevaluación: Software de SAPO (Sistema de Evaluación postural). Tratamiento de fisioterapia: Intervención Facilitador: Resultados: Calificación: Asimetría de la frontal plano: 7,7% asimetría plano sagital: el 60,6% la proyección de la posición del CG en la posición media del tobillo (plano frontal): 2,6% proyección de la posición CG en la posición media del tobillo (la parte): 14,5%. Revaluación: Asimetría de la delantera avión: - 2,7% asimetría plano sagital: 18, 6% la proyección de la posición del CG en la posición media del tobillo (plano frontal): - 0,8% proyección de la posición del CG en la posición media el tobillo (la parte): 6,8%. Discusión: Las técnicas de facilitación para mejorar la movilidad y la estabilidad postural antigravitacional permitir que el motor se ejecuta tareas con el mínimo de indemnización y una mayor eficiencia. El niño estimulado presenta una importante respuesta en relación a neuropsychomotor. Esta teoría fue probada durante el tratamiento que aplican los niños afectados Conclusión: A través de este trabajo la eficacia de la intervención de un facilitador mejora la simetría de la proyección del centro de gravedad mediante la intervención Facilitador.

PALABRAS CLAVE: ataxia cerebelosa, faciltatória discurso, Parálisis Cerebral

AVALIAÇÃO POSTURAL APÓS INTERVENÇÃO FACILITATÓRIA EM UMA CRIANÇA COM ATAXIA CEREBELAR

RESUMO

Introdução: A ataxia cerebelar decorrente de uma Paralisia Cerebral (PC) é um quadro clínico raro, caracterizando-se inicialmente por hipotonia e, aos poucos, verificam se alterações do equilíbrio e, menos comumente, da coordenação. Objetivo: O presente trabalho buscou identificar alterações posturais antes e após o procedimento terapêutico facilitatório, em uma criança com PC atáxica cerebelar. Metodologia: Sujeito: Uma criança de 5 anos de idade com diagnóstico de PC atáxica cerebelar.Protocolo de avaliação/reavaliação: Programa Software SAPO (Sistema de Avaliação Postural). Tratamento fisioterapêutico: Intervenção facilitatória: Resultados: Avaliação: Assimetria do plano frontal: 7,7% Assimetria plana sagital: 60,6 % Posição da projeção do CG relativo à posição média dos maléolos (plano frontal): 2,6 % Posição da projeção do CG relativo à posição média dos maléolos (plano lateral): 14,5 %. Reavaliação: Assimetria do plano frontal: - 2,7% Assimetria plana sagital: 18, 6% Posição da projeção do CG relativo à posição média dos maléolos (plano frontal): - 0,8 % Posição da projeção do CG relativo à posição média dos maléolos (plano lateral): 6,8 %.Discussão: As técnicas de facilitação melhoram a mobilidade e a estabilidade postural antigravitacional permitindo que as tarefas motoras seja, executadas com o mínimo de compensações e maior eficiência. A criança estimulada apresenta uma resposta significativa em relação ao desenvolvimento neuropsicomotor. Essa teoria foi comprovada durante o tratamento que aplicamos na crianças em questão Conclusão: Conclui-se através da realização deste trabalho a eficácia da intervenção facilitatória uma melhora na simetria da projeção do centro de gravidade através da intervenção facilitatória.

PALAVRAS CHAVES: Ataxia cerebelar, intervenção faciltatória, Paralisia Cerebral