Neurological Restoration of West Syndrome. Presentation of a Case

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Summary

Introduction. West syndrome or infantile spasms, cause a retard of the severe psychomotor development, as convulsive seizures are characterized by spasms in flexion. If the evolution is not satisfactory, the deterioration is bigger. To control the epileptic crisis and to incorporate a guided neurorestorative program in the stimulation of areas of the affected psychomotor development in an intensive, integral and personalized form with a duration of 7 daily hours at the International Center of Neurological Restoration. *Clinical case*. Presentation of a case with West syndrome. At the beginning of the program an applied neuropsychological evaluation was applicated (Brunnet Lezine's test, that measure the psychomotor development of the early childhood), Somatosensorial Evoked Potentials of the inferior limbs comparing them over year, are treatment performed in cycles of 60, 94 and 28 days respectively this the psychomotor development improved. *Result.* Evolution of psychomotor development of 2.27 months to 9,6 months was predicted and a retard with a deep range and cortical answer verified the function of the somestetic ways. *Conclusions.* The neurorestorative program is decisive in the psychomotor development due to the neuroplasticity of the nervous system. In the evolution of her psychic functions when she received an intensive, personalized and integral stimulation, changes are observed in the Somatosensorial Evoked Potentials.

Introduction

The West syndrome or infantile spasms are characterized to be present in the first years of a life between 3 to 5 months, with an incidence of

2-4 for each 100 000 inhabitants (1, 2). It causes a retard of the psychomotor development, as convulsive crisis of spasms in flexion characterize this illness. The retard of the motor and psychic development, will be more or less severe depending on the severity of attacks and the control obtained over the crisis.

The etiologic spectrum is too wide. Among these degenerative sicknesses we can mention; for example: metabolic causes, cortical disgenesia, neurocutaneous syndrome and other causes acquired for anoxia, tumors, trauma and hemorrhages. The etiology is unknown in 40 - 50% (cryptogenic) (1).

We present a case with this syndrome whose evolution is not the one for a quick control of seizures. With this intensive neurorehabilitation treatment, a satisfactory evolution was obtained.

Clinical Presentation

A 13 months old patient began treatment with ACTH of 60 UI daily for 15 days, which was continued with oral steroids (Prednisona) of 2 mg per kg of weight per day. The seizures disappeared. After that, Vigabatrina was associated with a dose of 30 mg per kg of weight per day. We applied a neuropsychological evaluation at the beginning and a somatosensorial evoked potential on inferior limbs, with the objective of obtaining results for the intensive, integral and personalized program (7 daily hours from the physical, defectologic and logopedic point of view). Previous pharmacological control of epilepsy was used, as well as stimulation with ozonotherapy via transrectal.

After a year of treatment we compared the obtained results.

Neuropsychological initial evaluation

Age: 13 months-old patient.

Evaluation date: August 10th, 1999.

Applied techniques: We applied Brunnet Lezine's test (first part) to measure the psychomotor development of early childhood. We interviews the parents.

Results: It showed a *development age* (DA) of 2,27 months and a *development coefficient* (DC) 22,43 which is diagnosed as a deep level of psychomotor development retard, yield by a great commitment of all development areas as followed:

– Postural control and motricity area

It resulted a DA of 4,20 months. Does not achieve the cephalic control because she can't sustain the head and shoulder. She can't turn from prone to supine and lateral position on bed.

– Oculo-motor coordination area and adaptation behavior to the objects.

It shows a behavior agreement with a DA of 2 months.

It doesn't realize visual pursuit in an angle of 90 degrees. No reactions are observed to auditory stimulation (bell noise), neither perform search of the sound source and carries out the grit only to the contact with superior limbs, as she takes the objects to the mouth, without carrying out other manipulative actions.

There is not intentional activity.

Maintains the right hand closed.

– Area of language:

Present a conduct according to a DA of 3 months.

She is on a phase of emission of vocalizations. the phase of vocalizations.

The behavior of screaming of happiness is not observed, she doesn't vocalize when we spoke to her.

Occasional sialorrea.

– Area of sociability.

A 2 month DA, does not fix the look in her face neither respond with a mimic to the stimulations. The behavior of playing with its hands and looking at them are not observed. Doesn't laugh and neither turn the head when she is called.

In a first cycle of 60 days of restorative program obtained the following progress:

- locates the sound source.
- achieves with a greater perseverance the pursuit of the objects.
- transfers the objects from one hand to the other.
- maintains her hands open for a time bigger predominance the left hand.
- increase of the articular arches in superior limbs.
- in supine decubitus position, she elevates the hips supported by her foot.
- significant increase of gurgle in frequency and in the presence of sound stimuli.

In a second cycle of 94 days, we obtained the following results:

- incorporates the hands to haulage for her transfer.
- begins social smile.
- cries when something wanted is retired from her reach.
- understands the prohibitions.
- imitates simple games.
- takes a cookie to the mouth and then places it in her hands.
- lingers for long periods with objects in her hands.
- begins with certain help to drink in a cup.
- phonemes appear in this babblings as "ca, ga, pa, ma, ja."
- when she is called by her name she answers.
- satisfactory incorporate mastication makes her able to chew the cookie.
- swallows without any difficulty.
- cephalic support in midline.

Photo 1: The patient stays sit with previous support during short periods of time.

- stays sit with previous support during short periods of time (Photo1).
- participates actively in all motor activities.

3rd stage of neurological restoration with a duration of 28 days.

- An increase of the muscular tone and decrease of the abnormal reflex activity
- stays sit down with previous support by longer periods of time.
- looks at the objects and follows them up and down in spite of her myopia.
- explores this hands and plays with them and she takes them to mid line.
- imitates the gestual games.
- takes liquids in a glass.

2nd Neuropsychological evaluation

Evaluation date: January 19th, 2001.

Age: 2.6 year old (30 months)

Brunnet Lezine's test (first part) was applied to measure the psychomotor development of early childhood. The parents were interviewed.

Results: Yielding corresponds to DA of 9,6 months and a DC of 34,94 which it is agree with a severe handicap (in the level with moderate) in the psychomotor development.

– Postural control area and the motricity.

Area of higher affectation. She has a DA of 7,20 months.

Presents a greater stability of the cephalic balance.

Limitations to reach the position of sedestation in an independent form and the maintenance in this position without support, besides difficulties for the achievement of bipedestation with support.

Generally realize the transfer of objects from the right to the left superior limb.

– Oculomotor coordination area and behavior of adaptation to the objects:

DA of 7,7 months.

She has limitations in the right superior limb which limit wrap and carries it out with a marked difficulty to adult insistence with limitations to carry out the opening, in general performs it with the left superior limb in rake form.

The manipulation of objects is limited to the grip of objects, put them into the mouth, move them and make them sound or throw them to the floor.

Doesn't realize more complex imitations of actions with objects.

The commitment in visual analyzer, together with the limitation of the right superior limb are factors that limit the development of new acquisitions.

– Area of language.

It is the area of greater development when she shows, a greater yielding in correspondence with a DA of 16.15 months.

She is in the phase of emission of simple words as "mom, dad, baby, why".

In the impressive aspect she shows a development of compression.

– Area of validism.

Show us a behavior in correspondence with a DA of 11 months.

Presents limitations in the sphincter control and in the development of certain manipulative actions, to drink with only one cup, to point out with finger what she wants.

Neurophysiologic Studies

1st Somatosensorial Evoked Potential of inferior limbs: Date of performance: August 11th, 1999

Stimulation of the posterior tibial nerve from behind the medial face of the ankle. No evoked response is registered, what evidences the existence of a damage in the somestesic via of probable corticosubcortical topography and of marked intensity.

2nd Somatosensorial Evoked Potential in inferior limbs (January 12th 2000): There are no changes related to the pervious one.

3rd Somatosensorial Evoked Potential in inferior limbs (January 12th, 2001):

Significant prolongation of the latency and a low replicability of cortical component whit increase of the central conduction time. A functional damage of the somestesic way with a superior topography to the lumbar level given by retard in the speed of propagation of the nervous impulse in such trajectory.

Results

- Control of epileptogenic seizures.

- With neurosensorial stimulation there are evident changes in their psychomotor development.
- Although slow, the functional response to the somestesic stimulation in both inferior limbs is evident.

Conclusions

- The neurorestaurative program applying the stimulation of different areas of the psychomotor development in a child with West syndrome without seizures is decisive in the psychomotor development.
- The neuroplasticity of the nervous system in the child allows the evolution of her superior psychic functions when receives an integral, personalized and intensive stimulation.

Bibliography

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