

ASSOCIATING SULTANA METHOD AND THERAPEUTIC SWIMMING WITH THE TREATMENT OF SPASTIC DIPLEGIA

ASOCIEREA METODEI SULTANA ȘI ÎNOTULUI TERAPEUTIC ÎN TRATAMENTUL DIPLEGIEI SPASTICE

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Abstract: We present in this study the case of a 10 years old child (V.I.) suffering of spastic diplegie, whit the goool of highlight a certain performance due to the effort and perseverance of using complex rehabilitation treatment since birth, including the Sultana method and the aquatic education.

The Sultana Method of psychomotric stimulation of the new-born and young child, registred with OSIM in 2001, represents an alternate method to that of traditional care, which ensures a harmonious development of the new-born and young child. The method involves three steps: massage, gymnastics and aqua-therapy. In the above-mentioned case, the Sultana method has been applied on a daily basis starting right from birth and until the age of 3.

V.I achieved the perfonmance for his neuro-motor deficiency and this is due to his parents who have resorted to alternative treatment methods(Sultana Method) even from the first they of life.

The conclusions are that although spastic diplegia is a disabling disease,the subject managed to reach good results in the somatic-functional development because he has received since the birth the Sultana Method and after the age of 3 years he practiced therapeutic swimming.

Rezumat: În această lucrare prezentăm cazul unui copil de 10 ani (V.I.) cu diplegie spastică cu scopul de a evidenția o anumită performanță motrică la care a ajuns datorată efortului și perseverenței de a folosi tratamentul complex de recuperare încă de la naștere, printre care Metoda Sultana și educația acvatică.

Metoda Sultana de stimulare psihomotorie a nou-născutului și copilului mic, înregistrată la OSIM în anul 2001 reprezintă o metodă alternativă celei tradiționale de îngrijire, prin care se asigură o dezvoltare armonioasă a nou-născutului și a copilului mic. Metoda cuprinde 3 etape: masajul, gimnastica și hidroterapia. În cazul prezentat metoda Sultana a fost aplicată imediat de la naștere și până la vârsta de 3 ani cu o frecvență zilnică.

V.I. a ajuns la o performanta prin ameliorarea deficiențelor neuro-motorii cu care s-a nascut și acest lucru se datoreaza părinților care au apelat inaca din primele de viata la metode alternative de tratament (Metoda Sultana).

Concluziile sunt că deși diplegia spastică este o boală invalidantă subiectul a reușit să ajungă la rezultate favorabile în dezvoltarea sa somato-funcțională deoarece a beneficiat încă de la naștere de metoda Sultana, iar după vârsta de 3 ani de practicarea înotului terapeutic.

Nonprogressive cerebral palsy are not ereditary, are caused by the lesions of central nervous system and induced to the child before birth, during labour or early after birth. As early present is neurological simptomatology, and affects especially the voluntary motor activity. Spastic diplegia (Little condition) is one of the spastic of this group of affections.

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Spastic diplegia affects all limbs, but the most present is motor deficit of the lower limb; this will be always in flexion, semiflexion or extension, adduction and internal rotation. Very often it associate with prematurity in 80% from cases.

From anatomic and pathologic view there are focuses of periventricular leucomalacia, and it means focuses of necrosis in the white substance, to the border between superficial and profound circulation and affects the ascendent tracts that coordinates the motor activity, especially of the lower limb.

Leucomalacia is present mostly in germinative matrix and it is very often associated with intraventricular bleedings. The clinic aspects associates: congenital strabism, normal intelect or a certain degree of mental retardation, epileptic crisis. The evolution of the illness is gradual. In the hypotone stage, the child has feeding difficulties. In the dystonic phase (after 6-12 weeks) it shows buco-lingual dyspraxia and jumpy muscular tone. At 8-9 month it shows the pyramidal syndrome (spasticity).

At neurologic exam can be seen crossed legs when walking and a certain kind of support characteristic for pyramidal syndrome of lower limbs and fine motricity troubles, specific of a pyramidal syndrome of upper limbs.

Classification of spastic diplegia:

1. Easy spastic diplegia – subjects walk after 3 – 4 years old.
2. Mild spastic diplegia –waking with aids, with help, pathological walking.
3. Severe spastic diplegia – child never walk.

The associate symptomatology consist of: oftalmologic affectation, epileptic seizures, hip luxation due to vicious position, lumbar lordosis, vicious postures of lower limb. Treatment consist of neurologic and motor rehabilitation.

The case presented in this paperwork is from a 10 years old childboy, who obtain a certain motric performance due to his permanent effort and to perseverance to correct by different means, his deficiencies. The purpose of this paperwork is to bring into discussion the efficiency of treatment by applying the Sultana Method, based on the age of the client, of Sultana Method and on therapeutic swimming.

We suppose that association between Sultana Method and conventional rehabilitation means and methods in case of spastic diplegia leded to the improvement of client performance.

Sultana Method® for psychomotor stimulation of the infant and little children was officialy registred at the State Office for Inventions and Brands (OSIM) since from Decembre 2001 and represents an alternative care method, that offers a spectacular evolution of the child, from the moment he is cardiorespiratory stabilized.

The method is conceived as an educational program with profilactic role in body strenghtening, representing a secure mean for a harmonious growth. The program includes specific techniques and respects the own growing rhythm of each child, during some personalized sessions.

Having as starting point the concern for offering the adequate developmental frame, special care and respect for child's personality, this method is accessible and appropriate for being used both by specialists and parents.

Sultana Method has 3 steps: massage, gymnastics and hydrotherapy, with effects on immunity strenghtening, psychomotor development, harmonious development of a strengthened muscular system and bones, improving the capacity of cardio-vascular system, that offers a very good general oxygenation, strenght neuronal links, solving some postural deficiencies, improving the degree of emotional intelligence, of the ways of how they manage to solve extreme situations, beginning with very early ages, keeping the primary reflexes and changing them in automatic movements.

From 4 month and a half - 6 month, this method is completed by aquatic education, representing the ensemble of procedures in water for children, adolescents and third age persons of

persons with deficiencies, having prophylactic and leisure purpose due to adaptation to aquatic environment.

The case presentation is made with the help of parents and caregivers observation, but from medical files also, that we have.

From medical file we find that the pregnancy evolution was difficult, with several interments of the mother, because of bleedings. Client was born on 27.08.1999, after 6 month of pregnancy.

The first file of hospital release specifies: premature new-born, third degree, mild perinatal hypoxia, 1000 grams weight, 35 cm length, PC 23, PT 22.

Birth was spontaneous, cranial presentation, APGAR Score 7, resuscitation necessary. First month of life was marked by cardio-pulmonary complications, apnea episodes, augmented oxygen additio, medical treatment, assisted ventilation, cardio-vascular support, blood transfusions.

At hospital release in 19.10.1999, after 7 weeks of hospital internment, V.I. has 1600 gr, 39 cm length.

At 9 weeks, V.I. has 1950 gr weight, 43 cm length, PC 29 cm, PT 30 cm.

At 5 month, V.I. has 3950 gr weight, 53 cm length, PC 35cm, PT 37 cm, a good muscular tonus, good turgor, grasping and treadling reflexes present.

At 7 month, V.I. has 5700 gr weight, 59 cm length, PC 40cm, PT 40 cm, good general status, is attentive, doesn't grasp toys, keep crossed fingers, doesn't turn from one side to the other.

At 9 month, V.I. has 6500 gr weight, 64 cm length, PC 41 cm, PT 42 cm.

At 8 month V.I. is kept at Gomoiu Hospital, where he is diagnosed with spastic diplegia, tetraplegic form. From psychomotor point of view, the development is satisfactory: head is up at 4 month, assisted sitting at 7 month, smiles, looks. Clinical exam describes increased spasticity in upper and lower limb.

In another medical file from 2001, 1 year and 8 month old appears: spastic paraparesis, motor retardation, cerebral motor infirmity due to perinatal ailment. Doesn't stand up and waking is made with aids only.

In 2002, he was hospitalized twice in the Dezna Rehabilitation Hospital, with the diagnostic of spastic paraparesis after sechelar encephalopathy. In the release note from the hospital is mentioned that psychic development corresponds with the age, spasticity is mild at lower limb level, with osteotendinous hiperflexia mostly on left side, left foot in valgus, with 1 cm difference between the two feet, flat feet, coordination difficulties, slow motion – in lower limbs, waking is possible with a larger base, unsecure due to spasticity. The rehabilitation program applied consist of subacval shower, ionizations, masage, physical therapy, occupational therapy.

In 2004 at 4 years old, our subject V.I. has supported a surgical intervention at Medical Centre Vaudois, from Lausanne, Elvetia. Was made an elongation of Achille's tendon from left lower limb, with immobilisation in contention device for 6 weeks. In this period of time of 2 month, client followed ergotherapy and fiziotherapy. Were made recommendation for a continuous physical therapy program, until the end of growing period..

Sultana Method was applied to V.I. from the hospital period early after birth and than at home until the patient has 3 years old.

Masage manouvres were made as follows:

- on the lower limbs – Shiatsu presopuncture;
- sole – press-point;
- foot fingers – pressions, rotations and pullings;
- at abdominal level – with split fingers and with 3 fingers in clock direction, following the colon trajectory;
- at thoracal level – tapping;

- on upper limbs – Shiatsu presopuncture;
- at back level – eflouraj and tapping;
- at the skull – circulary, gentle movements;
- at facial level – with forefinger round about eyes;
- at the neck level – roling with dorsal part of the hands.

After that follows the second part of Sultana Method, exercises, for relaxation and reducing spasticity of flexors.

- Putting the right lower limb in contact with the left upper limb and viceversa;
- Touching the both soles, with gentle tapping. By touching of soles it is made a gentle masage, that stimulates the internal organs activity;
- Rotation movements of lower limbs and crosing them;
- Swinging. With child in phrone position, he will be lifted with the back near the therapist chest. The child is held by the ankles above, with fingers bound. The child is left to slipp with the head down, held only by ankles and he is balanced as a swing, than back to phrone position.

HYDROTHERAPY – is the third phase of Sultana Method and begins with the srimulation of swimming primary reflexes and immersion in order to transform them into automatic movements.

For this phase was used an individual bathtub for infants, whisc was replaced after a few weeks with the bathtub from the bathroom of the house. The water temperature was initialy 37 Celsius degree, it means the temperature of the intrauterine liquid and reduse gradually month by month, by one degree untill 32 Celsius degree. The contact with water will be made gently and gradually, making the child feel comfortable and secure. The child is put on the therapist forearm, with the legs on one oth sides and the thorax sustained by the hand.

During hydrotherapy, the therapist sustained the child only in few tangent points, in order the child to have free movements as much as possible.

Contact with the child (Hand contacts):

- For supine position, was used a hand contact mode, in which the palm sustains a part of the head and neck and were made back and forth movements, in order to stimulate the swimming primary reflexes.
- Another type of hand contact, is the sandwich type, in wich palms are positioned gently on the child, one hand on the front side of the txorax and the other one on the back side of it. With this kind of hand contact were made turning manouvres from supine to phrone position and stimulations by back and forth movements.
- For phrone position, forefinger and innerfinger were put on both sides of mandibula, avoiding the soft tissues and structures of the neck, and middle finger was pu on the thorax, at 2 fingers distance up from the sternal bone, This type of hand contact offers the child the opportunity to move free, especially to upper limbs.

Immersion

Immersion was made after 10 minutes, when the child used to the water and the free movements. At first, the hands of therapist assisted the child through the same sustaining method. After 2 – 3 repetitions in the bathtub, came a moment of maximum relaxation, after that, the child was sustained in prone position, in order to have an immersion, simply by removing the therapist's hands. During swimming program, the child was left alone to swim under water and he managed to swim by himself making sincronized movements generated by primary reflexes.

Rotations

The child was rotated under water, as a new element added progresively in the swimming rehabilitation program.

Child on supine position, with the left hand of the therapist as support, with split fingers, was rotated with the sandwich hand contact, from left to right side, pushed gently under water, than lifted up gently and that back to supine position, in order to watch him and make him feel secure.

Divings

8 month after birth were introduced divings in the rehabilitation program of V.I. The therapist sustain the child's head and thorax with one hand, with the other hand he sustain the lower limbs, in the superior part of the calfs. The child's body and the water surface must have an ungle of 45 degree. The divings were made very easy, the left hand of the therapist having the first contact with water, and after that the child was easily pushed into the water. The child tried to pull over the water, being helped by the therapist with same sustainig manouvre, with hands as support.

The subject V.I. joined the aquatic education on age 3, at „Little Champions Club”, following the swimming program for beginners and therapeutic swimming.

At age 7 after a radiologic exam is discovered an associate scoliosis secondary to spastic paraparesis, requering physical therapy and correction corset. This scoliosis has a Cobb angle of 25 degree in 2007.

At age 9 the scoliosis was reduced due to physical therapy, but also swimming exercises according to his condition.

The proposed swimming exercises are:

CRAWL STILE – legg movements:

- an upper limb on the float, the other one near the hip, maintaining the torso in redressed position
- lower limb on the same side with the dorsal convexity is kikking hard and down.

CRAWL STILE – upper limb movements:

- upper limb on the same side with convexity rows hard
- inhale on the concavity side.

BACK STILE – legg movements:

- upper limb sided with concavity will be up, the other one will be down, near coapsă

BACK STILE – upper limb movements:

- rows the upper limb convexity sided
- the upper limb on the same side with the curvature is rows harder

BRASS STILE- legg movements:

- one upper limb is up, the other one is down, near the ham or on the back

BRASS STILE – upper limb movements:

- the subject will swimm only with the upper and lower limb on the same side.

BRASS STILE – as hole

- the subject will swimm only with the upper and lower limb on the same side with the convexity in order to shorten the muscles.

BUTTERFLY STILE - legg movements:

- one upper limb is up, the other one is down, near the ham or on the back

BUTTERFLY STILE - upper limb movements:

- it rows only with one upper limb

Conclusions

1. Spastic diplegia is a condition that requires early diagnosys and a complex treatment.
2. The treatment stages depend on age and associate pathology. The Sultana method can be use with good results, in case of the very young child (0 – 3 years old), who cannot respond to commands.
3. The case of V.I. presented here, followed since he was born the Sultana method, with positive results in his somatic and functional development.

4. These good performances for V.I. are also related to the parents perseverance, who applied all known rehabilitation means during all growing and developmental process.
5. The efficiency of therapeutic swimming is beyond doubt in the secondary pathologies of spastic diplegia, as scoliosis, by swimming elements which are promoted since the first sessions.

Proposals

1. Including the Sultana method in the complex rehabilitation treatment of neuromuscular pathologies of 0-3 years old children.
2. Accomplishing, in the future of a research paperwork having as purpose the analyse of differences between somato-functional and motric assessments of our subject, V.I., who followed the Sultana method and therapeutic swimming, and another subject who has the same illness but never followed these treatment means.

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