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Diagnosis and neurologopedic therapy in a child with sensory-motor alalia

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Summary

Introduction: Alalia sensory-motor mechanism is a disorder of understanding speech, words expressing thoughts, auditory perception, shaped on the basis of physical hearing, as well as mechanisms for creating movements and create their accuracy. Alalia is dysfunction, which reveals the source of difficulty for up to 2 years of age. The reason is usually damage to the structure of the cerebral cortex, which may take place during fetal life and perinatal time. Most often alalii sensory-motor are confused with autism spectrum disorders, of both are in fact similar.
Objective: The aim of the study was to develop and apply individual therapy neurologopedic alalia a child with sensory-motor and the answer to the question whether such therapy can improve speech perception and the ability of the child.
Material and methods: The research method of work is an individual case study. Diagnosis was obtained from intelligence, surveillance, indicative speech testing and research neurologopedic. The result has been supplemented with the child's medical records.
Results: Therapy neurologopedic brought the desired results. Results achieved in the field of manual and motor skills and eye-hand coordination. Improved memory and perception of auditory-visual and extended the time attention. Significantly enriched vocabulary. Developed the ability to play, a desire to follow suit. Improved ability to eat independently and function of organs oral-facial area. The patient became me sensitive to stimulus, more stabile, the central muscle tone has been reinforced.
Keywords: alalia sensory-motor, neurologopedic diagnosis, therapy

Introduction

Language is the most important for a man, the easiest and most valuable means of communication [1]. Genetically it was created to use the verbal code, which is its origin in the brain [2]. Language has become the key to human consciousness and comprehension skills themselves. Normativity of language development starts from ontogenesis (ontogenetic development of the child's speech) [3, 4].

Processes approximate-cognitive, emotional and motivational actuator (motor) are closely related to the ontogenetic development of the child's speech [5]. Motility is responsible for the implementation of small motor patterns: sounds, words, sentences and large: a global movement muscles and fascia [3, 6]. Any kind of interference caused by damage to the brain during prelingwalnym, giving its consequences for implementing processes is eligible for a group of disorders psychomotor [7], among which stands out alalia [8].

Alalia sensory-motor is diagnosed when verbal communication is impossible, or when it exhibits a significant delay in the development of all possible language skills phonology-phonetic inflection, word formation, lexical semantic and syntactic narrative. What's more, this range alalia disorders are noticeable auditory perception (hearing and prosodic and phonemic)

[9, 10], which arise from damage to the structure of the cerebral cortex (the location in the temporal lobe) [11].

Alalia child with sensory-motor is characterized by a poverty of passive and active vocabulary, and thus difficulty understanding speech word; understanding is usually global in nature, the child understands situational context, prosodic contour of speech and single words [5]. Anatomy of mouth creates the conditions of readiness verbal, but still described children with a disorder characterized by abnormal somaesthesis (feeling the body) and kinaesthesia (corresponding movement of articulation organs) [6,7,12]. In addition, to form many agrammaticals, neologisms and which are often not structurally connected, alter the structure of words, form-contamination within the words [13].

Communication with children with sensory-motor alalia is usually correct (good emotional contact, but impaired intellectual contact, despite adequate intelligence level) [14], Although the rate of language acquisition – because of damage to cortical structures – rather slow [15]. The consequence of sensory-motor alalii in children of school age are the most difficulties in school skills such as reading, writing, networking, social, emotional and behavioral disorders [16]. Recent research on sensory-motor alalii children prove diagnostic difficulties, because the disorder is often confused with autism spectrum [17, 18, 19].

Subject matter and objectives of research

The research is a diagnosis neurologopedic, support the development of the child's speech at the age of 5 years and 9 months, and verify the effectiveness of therapy.

Objectives of research:

1. Neurologopedic attempt to diagnose a child with sensory-motor alalia.
2. Developing and conducting individual therapy program neurologopedic alalia child with sensory-motor.
3. Obtaining and presentation of therapeutic effects.

The work erected following research problem:

1. Do you support the development of methods of speech will help to compensate for delays and communication deficits in children with sensory-motor alalia?

Hypothesis:

1. There is a close relationship between assisted the child's speech and the improvement of its functioning in everyday life.

Method, techniques and research tools

The research method of work is an individual case study. Diagnosis was obtained from intelligence, surveillance, indicative speech testing, research, and the processes neurologopedic and processes Sensory Integration.

Interviewed had formal and open to the public. Mother gave details of the child. The data collected included: family, pregnancy, childbirth, treatment, neonatal period and infancy, psychomotor development and speech development. While individual therapy with the child interview was supplemented with information derived from observations of the child, ie. the language behavior, ability to establish contacts, emotional attitude to speak, facial expressions, curiosity. Neurologopedic study included analysis of the development: speech, fun, social behavior and emotion, the level of dominance sided, simultaneous and sequential memory, motor skills and manual, visual and auditory perception. Testing was performed using a variety of accessories, kit toys, pictures, audio materials, picture stories, suspended equipment was also used (to a diagnosis of motor and sensory). Neurologopedic diagnosis results were compatible with the results of the diagnosis process Sensory Integration.

Organization and conduct of the study

The first step in starting the research work was to familiarize parents (mother) with the object and purpose of the study. Received written consent for their child's participation in research and the use of diagnostic data (including medical records) to write the work. Research and treatment continued for a period of 10 months with a frequency of 2 classes per week, the duration of one treatment session was 60 minutes. Guided by the age of the child therapy was conducted as creative play, by mobilizing the movement to think, speak and mindfulness. Using the potential of the child started on what is easiest for him, then consistently and systematically increased the difficulty of the exercise. They used a reward system in order to stimulate the child's motivation to speak. Therapy was held in the presence of a parent. What is important is contact and cooperation on the therapist-child-parent gives measurable effects of therapy because it allows immediate change potentially adverse effects of therapeutic interventions for implementation of new work in the office and at home. Contact parent was very strict. After each visit the child's mother was granted reliable feedback on the diagnosis and management neurologopedic. Concluded a contract with the parent of mutual assistance and participation of the child in therapy

Individual case study of a child with impaired

Characteristics of the child

The boy was born with IUGR (intrauterine growth restriction), perinatal hypoxia. The child's mother did not work before pregnancy, took care of the elder son; He had health problems – congenital kidney defect, motor dysfunctions associated with degeneration of the lumbar spine. The birth took place by Caesarean section in 37 hbd threatening asphyxia due to amniotic fluid of the green. Child birth weight of 2,850 g, received a 7 point Apgar due to the incorrect color, low muscle tone and reflexes. The patient after removal of the tonsils and after an infection with Staphylococcus pharyngeal cavity. Currently, very often ill, suspected of childhood asthma. Diagnosed intolerance to lactose and hen egg, during testing for celiac disease.

NDT Bobath therapy method lasted 12 to 14 months of age (she was an indication of intensive rehabilitation, parents could not meet the recommendations of the reasons for the poor state of health of the mother and father work). The patient began to crawl at 14 months of age, to sit alone in 16 m., walk at 22 months. Currently, moving alone, but the walk is disturbed, unstable, he notes the large imbalance and coordination. It is still poor orientation in space. Clubfoot, foot arranged to rotate the inner and pelvis in anteversion. Diagnosed with a significant right-sided asymmetry and low muscle tone. The boy can not dress themselves, do not use the toilet alone, but washes and dries his hands. Isolated wearing shoes. Motility big and small are significantly delayed.

Motor skills are quite small delayed. The boy puts blocks of various shapes to the appropriate holes, but for his age makes it very imprecisely. He knows colors, contrast is not wrong. Communication dialog is poorly educated. Eye contact the boy is at the stage below normal.

Impaired physiological functions within the organ of speech. Baby bottle-fed for 36 months. Currently, only soft food, pasty foods. The patient is highly selective in eating, notes the sensitivity of oral-facial area. Impaired development of language communication. During the current stage of development billing and cooing very late stage of babbling. The first words (mom, dad) appeared at the age of 28 months, after which there was a significant inhibition of speech for about three months, accompanied by vaccination. Very narrow vocabulary limited to the names of everyday life. It begins with the step of folding the two words. Emotionally disturbed child. Quickly nervous, frustration and dissatisfaction forces into tears, vomit on demand. Calms down the television, but this limited from 6 months – has intensified the fear

and frustration. Muted while the vacuum cleaner and drier. Quite often there are (auto)stimulatory movement: rhythmic movements of the weaker limb. He is interested in small figures from Kinder Surprises. Concentration of attention is low. The patient is not able to establish social relationships with their peers, withdraws, ashamed, accompanied by sweating and crying. It is raised by parents, an older brother for four years.

The first study neurologopedic made in September 2015. Using the tools AFA-Scale [20], MFDR – Munich Functional Developmental Diagnostic.

Speech reception in the step of a 3.5 year-old patient, and the passive phase of a 3.0 year-old. patient:

- reluctantly speaks spontaneously,
- provide short answers, sometimes complex, but agrammatical,
- a low level of concentration,
- it responds to simple messages, but also complex (increasingly),
- no problem with auditory processing complex commands, ie. „Sit down on the mattress, open the box, pull it out of its beans", it may not then nothing distracting, do not always understand the message (uses non-verbal speech),
- most do not understand the meaning of adjectives, verbs, prepositions,
- they understand simple sentences, mainly commands and prohibitions, knows the basic emotions, does not understand the spatial relationships of time ,
- the description of the images uses the terms 2-words, and sentences – can not arrange the story of cause-effect type (sequence of events),
- usually responds to prompts and guiding questions,
- articulation is not understood in the speech are present simplification the voice, neologisms, agrammatical words,
- quiet voice, still uncertain, although in situations of high interest can shout, speak with exaggerated motility oral,
- jamming happens, speech is illiquid,
- drool excessively,
- childish way of swallowing, abnormal resting position of the tongue,
- low muscle tone in the area of oral-facial,
- anatomy of the mouth – correct,

- the hearing today in the diagnosis, suspected auditory processing problems at the level of acoustic reflex; abnormal levels of hearing phonematic,
- delayed development of eye-hand coordination,
- lateralization swallowtail,
- Sensory Integration disorder in the processing and modulation of sensory stimulus difficulty in regulating (hypersensitivity tactile, auditory, visual, olfactory and taste, high reaction of proprioceptive and vestibular low level of visual-aural-mobility).

In situations requiring greater intellectual effort or the difficulty of the task discouraged, leaves, began to play the same – non-verbally, refused further participation in the classes.

Individual therapeutic program

Based on the results of individual therapy program developed neurologopedic. Therapy are conducted 2 times a week, but there are long breaks due to frequent infections boy. Activities is a creative play, during which the patient spends time pleasantly. During the therapy were observed principle of individualization, active and conscious participation, systematic, grading difficulties polisensory activities, preservation and development of the rules of correct behavior at a personal and emotional.

Implemented a program aimed at:

1. The development of motor skills and manual while enhancing eye contact, strengthening muscle tone. Exercises in sensory stimulation.
2. Programming language: symbolization auditory, auditory exercises, simultaneous-sequential memory.
3. The development of aural-visual.
4. Development of speech and understanding in the play/fun.
5. The development of social behavior and emotions.

Ad. 1. The development of motor skills and manual while enhancing eye contact, strengthening muscle tone. Exercises in sensory stimulation.

The therapist shows the child to exercise and encourages its follow:

- organization of thematic area: preparation of equipment to play, insertion and pile toys with drawers,

- drawing on different textures, different gear lines, circles, crosses – in parallel with the therapist, with the patterned redraw, joining dots,
- replenishment of the image scene, e.g. drawing windows in a building, wheels to vehicle,
- setting blocks in a row or vertical (tower) of the sequence and pattern,
- applying pads on sticks (categories by shape or color) – sorting crystals, beads, feathers color,
- mapping simple figures during the laying of blocks – tangram (learning material) adapted to the age and abilities of the patient,
- mimicking the sequence of movements hangstrap, while moving and singing songs,
- fast and slow repetition of words onomatopeic,
- matching four thematic images/athematic glued to the box,
- extracting the differences and similarities in the picture,
- laying form, fit items of clothing,
- building a puzzle 8, 10 and 15 elements,
- repeating the therapist movements of the lips, tongue, jaw, facial gestures – playing in front of a mirror,
- repeating for the therapist – arranging a sequence of blocks of red, yellow, red, while verbalise; walking on the colourful fishes,
- stacking sequence of colors, animals, dots,
- fun in the memo black and white,
- football and beach fun in aiming for the basket,
- volleyball with using ball of Bobath type – alternating bounce once hands, feet again,
- maintaining balance on the ball, lying on his stomach and on the back with the inclusion of calm breathing - inhale nose, exhale his breath x 3, inhale nose, exhale through the mouth: x 3,
- small motor exercises.

Ad. 2. Programming Language: symbolization auditory, auditory exercises, simultaneous-sequential memory.

- for transmitting audio objects, actions, eg. swing [hu-siu], walking duck [człapu-człap], drum [bum-bum, bim-bam],

- imitation of the sound of the motor creations while listening to and singing songs with short range sound improvement „Muzyczny domek. Śpiewanki pokazywanki”,
- remembering the child illustration, which was shown and an indication of its two, three, four, etc. different images,
- playing sounds saved by auditory information assisted the picture: first two images gradually increasing difficulty,
- stacking blocks in the correct order in a variety of colors.
- hand tapping sounds, syllables with [la, ba, pa, sa] – repeat new initiating by child,
- repeat with hearing the words, sentences, syllables spoken quickly,
- heard the sound and assignment to received images.

Ad. 3. The **development of aural-visual.**

- identification and differentiation of new words,
- indicating the child's picture, showing the object or action,
- arranged thematically homogeneous among others eg. clothes or animals – the therapist asks: „Where is ...?” or „Where are we going?”,
- perform simple commands, ie. give the ball, throw it in the trash, high five!,
- the repetition of the melody with his eyes closed,
- drinking by twisted rhythmic straw, with eyes closed,
- exercise in the darkening of uniform light – the wall flashlight, light painting,
- flashbox exercises – laying light puzzle.

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Ad. 4. Development of speech and understanding in the play/fun

- pointing at objects and speaking their name (the child's attention focused on the subject), it may initially be onomatopoeia,
- repeating the sequence of vowels first two, then three,
- fun themes: the cooking, the doctor, in a shop,
- manipulative play: drag the laces through the holes in the wooden shoe, threading beads on a string,
- practicing follow: body movements, hands, fingers; facial expressions, movements of the lips, tongue, jaw; sounds; ways to use tools; self service activities; activities performed by the person shown in the illustration; activities adults; sequence of events according to the drawings; sequence of actions on the oral command,

- using dmuchajka (learning materials) speech therapy,
- blowing candles with nose – nose air intake, blow his nose.

Ad. 5. Development of social behavior and emotions

- reduction of stimuli that cause negative reactions in order to prevent undesirable curing behavior,
- child hypersensitive to certain stimuli gradually get used to them by increasing the stimulation intensity – integrated sensory,
- adjustable pace of work/study – activity, rest and meals,
- providing contact with other children,
- being on the playground, imitating other children,
- by arranging common adult playground, at the beginning of two children and one adult who can help you play,
- encouraging the sharing of toys, playing with joint, collecting gadgets,
- identifying emotions on schematic drawings, pictures situational, indicating the child's desired emotions,
- guided by the interests of the child and following rules: worst punishment is to take the prize,
- follow the sphere of proximal development, appreciation of the efforts and frequent motivation (reward verbal, not physical).

Final audit. Evaluation of the effects of therapy.

Speech therapy has brought the desired results. Providing an improvement of motor efficiency and the coordination manual and coordinations of aural-visual. Praxis both static and dynamic coordination of movement is at a higher level. For several months working alone in the class (mother in the waiting room) – the concentration is at a high level, perform the tasks perfectly, not always understand all the commands (it is important for the boy to support sensory-visual-auditory). Notes a much better communication, faster makes contact, quickly responds to auditory stimulus, often he raises his head and locates vision therapist. It is a boy's greater commitment to work – requires motivation on the part of the therapist, and we are participating in the activities, but at the same time looking for eye contact, if it does not find it directs the person's face, which communicates (his hand grasps the lower jaw). There was a significant improvement in the functioning of the respiratory and articulatory apparat – there

are fewer infections, breathing through the nose, the mouth is closed, circular muscles of the lips and cheek work better, it is still tight muscle genial. Speech is more pronounced – current correction speech, sounds series [s, z, c; sz, rz, cz; ś, ź, ć] spoken correctly, but should improve speech is active; boy happens speak without sounds or omit the last sounds of words; his speech is uncertain. He very often uses pronunciation conscious (willing enter into a dialogue, talks), it is more rich. Central muscle tension is more stable, note, however, continue to lower the tension in the small motor activity, lack of precision, motor clumsiness. Occasionally the defense touch.

The patient, through systematic and regular therapy, achieved significant progress. Therapy is conducted in the right direction, it is important to implementation of the recommendations in the house.

Summary

In the treatment of a child with severe communication disorders is very important interdisciplinary knowledge and the complexity of interactions. Boy, outside neurologopedic therapy, has classes with a psychologist, special educator, therapist and physiotherapist (Vojta method) and therapy of Sensory Integration A multi-specialty support and consistent actions are having the desired effects.

During therapy neurologopedic exercises were selected according to the level of development of the child, trying to ensure a higher level still, the boy could grade the level of difficulty. They tried not to discourage it too difficult exercise, give the opportunity to succeed. During the therapy there were moments of doubt, the effect achieved without the determination would be impossible.

The boy still has a lot of work, but in a very long period made very good progress. The effects thus allowing a positive outlook on further development. There are also positive stimulation for me as therapist of speech.

In summary neurologopedic treatment of a child with motor-sensory alalia we can conclude that the method of supporting the development of speech help to compensate for delays and communication deficits. There is therefore a close relationship between the child's speech supporting the development and improvement of its functioning in everyday life.

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