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PREVENTION OF SPEECH DISORDERS IN CHILDREN WITH CONGENITAL CLEFT LIP AND PALATE AFTER EARLY URANOPLASTY

Abstract. The article is devoted to the question of providing speech therapy services to children with congenital cleft lip and palate after early palate repair (uranoplasty). Early uranoplasty at the age of 12-15 months restores the peripheral vocal apparatus and provides the basis for spontaneous development of proper articulation, breathing and voice; however, timely logopedic aid is necessary to facilitate typical speech development.

The specificity of logopedic intervention with regard to infants reveals itself in the fact that it cannot be focused on speech correction: the foundations of oral speech are only beginning to be formed at this age. The logopedist regulates speech development indirectly, through the development of sensory-motor sphere and the immediate emotional-personal communication of the mother with the child. Thus, logopedic support is not aimed at correction, but at prevention of speech disorders.

The second peculiarity of logopedic intervention consists in active work with the child's family. Psycho-physical peculiarities of infancy do not allow for structured speech therapy classes lasting 30-40 minutes, but parents who have mastered the techniques of logopedic intervention can organize several successive trainings each lasting 2-7 minutes and totaling 1.5-2 hours every day. Logopedic family support includes familiarization of parents with the special needs of children with congenital cleft lip and palate, teaching methods of logopedic intervention, and reduction of anxiety and emotional stress connected with the fears of the child's future.

The author describes the methods, principles, techniques and types of logopedic intervention and some organizational issues in the work with infants with congenital cleft lip and palate in cases of early uranoplasty.

Keywords: rhinolalia; speech disorders; preschool logopedics; infants; early age; uranoplasty; children with congenital cleft lip and palate; logopedic aid; logopedic work; maxillofacial pathology; congenital cleft lip and palate; anatomical and physiological disorders.

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A system of logopedic aid for children and adults was created in the 20th century and has been actively improved in the course of

recent decades. Creation of the service of early logopedic aid and logopedic intervention is one of the ways of its modernization.

The terms "logopedic aid" and "logopedic intervention" (from Greek *logos* – "word, speech" and *paideia* – "education, teaching") refer to the sphere of medico-pedagogical assistance. Logopedic aid is provided for people with functional or organic speech disorders (dyslalia, rhinolalia, stammering, aphasia, dysarthria, alalia, etc.). Modern rehabilitation-pedagogical measures allow boosting speech development, repairing existing defects, and preventing secondary impairments of intellect and personality brought about by speech disorders. Logopedic aid is provided by logopedists together with specialists in accordance with the child's disorder: by doctors – pediatricians, neurologists, psychiatrists, otolaryngologists, orthodontists, maxillofacial surgeons; by special and neuro psychologists, tiflo- and surdo-pedagogues, defectologists, etc. The modern technologies of providing assistance to children with disabilities radically expand the logopedist's scope of activity; there appear new opportunities:

1) to embrace the maximum number of children;

2) to carry out speech screening of children;

3) to reveal risk group children in accordance with speech disorders;

4) to diagnose early prerequisites of speech development;

5) to carry out rehabilitation-educational work with the risk group children in accordance with speech disorders.

Logopedic intervention is interpreted as a pedagogical process effected by means of teaching, education, rehabilitation, compensation, adaptation and prevention of speech disorders. In infancy and at an early age, logopedic intervention may be accompanied by medical treatment – medicamentous, physio-therapeutical, psycho-therapeutical, etc.

Provision of complex medico-psycho-pedagogical aid to children with congenital cleft lip and palate is a traditional principle of rehabilitation. Palate repair (uranoplasty) in children with congenital cleft lip and palate during pre-speech period (from 12 to 18 months of age) when verbal speech has not yet developed radically changes the approach to logopedic intervention. Articulatory skills formed during the pre-speech period make it possible to prevent formation of a pathological speech stereotype [2; 3; 6; 9]. The logopedist does not correct speech defects but prevents them. This fact is corroborated by a number of researches: thus, E. P. Vasil'eva [5] argues that early uranoplasty allows creating normal physiological conditions for speech development, yet a complex of special exercises is neces-

sary to ensure normal functioning of the vocal apparatus.

A. S. Balakireva [1] argues the necessity of logopedic training in cases of early lip and palate repair. She states that speech development in such children has no signs of rhinolalia but there is underdevelopment of the articulation basis formation, and logopedic training should be preventive in character, and the methods and techniques of logopedic work should be differentiated in accordance with the age and functional state of the vocal apparatus.

The research undertaken by T. V. Volosovets and E. A. Soboleva [13] demonstrates the complex nature of speech disorder in children with congenital cleft lip and palate, a combination of the anatomic defect with distorted muscle tone typical for spasticity (50%), hypotonia (18%), and dystonia of articulatory muscles (32%).

Practical logopedists and researchers attribute effectiveness of logopedic intervention for children with congenital cleft lip and palate to the following factors:

1) degree of defect manifestation;
2) child's age;
3) child's somatic state;
4) psychological peculiarities;
5) peculiarities of the emotional-volitional sphere;
6) impact of micro-social environment;
7) time of beginning and duration of logopedic work;
8) opportunity to use complex intervention;
9) professional competence of the pedagogue.

The modern medical technologies implemented in the Center "Bonum" (Ekaterinburg) are aimed at early rehabilitation of the basic disorder in children with congenital cleft lip and palate – restoration of functionability of the vocal apparatus [2; 3; 9; 10]. Surgical intervention is performed during the first year of life in the period of pre-speech development. The child and the parents need pedagogical and psychological assistance at this time [11; 12]. Traditional methods of pedagogical rehabilitation of children with congenital cleft lip and palate worked out by A. G. Ippolitova, I. I. Ermakova and L. I. Vansovskaya [7; 8; 4] and other specialists have been designed for pre-school and junior school children. Pedagogical literature contains scarce recommendations about treatment of infants, which cannot create the whole picture of pedagogical aid to infants with congenital cleft lip and palate and their parents.

In order to make prevention of speech disorders in children with congenital cleft lip and palate effective it is necessary to change the methods and organization of work with the children of this category. Rehabilitation-educational work

with infants presupposes 4 methods of logopedic intervention: development, stimulation, formation and rehabilitation.

Development is viewed upon as natural formation of psychological structures under the influence of various factors.

Stimulation consists in boosting the infant's activity as a result of influence on the part of an adult person. Stimulation appears when an adult creates conditions for spontaneous development of the child, for example, selects the toys correctly.

Formation means setting a concrete pedagogical aim and its achievement for the formation of certain psychological functions, for example, teaching handgrip facilitates the development of tactile-kinesthetic and visual-motor coordination.

Rehabilitation in reference to infants presupposes elimination/reduction of primary (if they have been formed) or possible secondary developmental disorders.

These guidelines make it possible to single out *the principles of rehabilitation-educational aid* to infants with congenital cleft lip and palate.

1. Principle of natural development. Infancy is characterized by impetuous tempo of development. Brain, musculoskeletal and nervous systems grow fast and develop; feelings, perception of all modalities (visual, auditory, tactile, gustatory, olfactory), and emotional and motor responses are formed. Common activity of an adult and a child contains a powerful stimulus for development and perfection of the functional systems. Realization of the given principle may allow stimulating the course of natural development of children with special needs.

2. Principle of information flow management. Impetuous development of an infant is connected not only with physiological and genetic peculiarities but also with impulses coming in from the external environment. Additional adult's actions on organization and efficient functioning of the information field would create the necessary conditions for development of the child's psychological functions.

3. Principle of indirect intervention in the course of speech development. Absence of real speech is characteristic of infancy. But it is during this period that the fundamentals of communication and comprehension of speech of the surrounding people and acquisition of the phonetic aspect of language take place. Mobility of functions of brain structures and close sensory-motor interdependence of analyzer systems allow indirect intervention on development of the brain speech zones in infancy. That is why the formation of attention, perception, memory and thinking using sensory-motor kinds of activity paves the way for speech development. Gradually, sensory-motor development is sure to manifest itself in vo-

cal-auditory, gesture-visual and manipulative-situational ways of communication.

4. Principle of conscious communication type modeling by parents. Communication problems are typical of a child with speech disorder. The existing compensatory (gesture-vocal) model of communication does not often satisfy the requirements of the society; and then the problem affects the child's emotional-personal sphere. Children with congenital cleft lip and palate are faced with the given situation on the first days of their life. The parents' shocked state creates estrangement and breaks the biogenetically determined tie "mother-child"; the child's need of communication with the surrounding world remains unsatisfied, takes a passive form and develops specific and/or compensatory manifestations. In the course of realization of the given principle the parents become acquainted with the natural course of development of infants and with the peculiar features of infants' communication, and learn to understand the specificity of disorder, determine compensatory mechanisms of development and use them to their own advantage.

The methods and techniques of training used in the work with infants with congenital cleft lip and palate may be classified according to the notion of method generally accepted in didactics [15; 14].

1. Visual methods organize sensory experience of the child in general with the help of vision, hearing, tactile perception, and movement:

a) direct methods; their purpose is to accumulate sensory perceptions.

Techniques: observation of static and mobile objects, inspection of a room and objects, listening to surrounding sounds, speech comprehension, manual-bodily touches and grips;

b) indirect methods; they are based on using visual, auditory and tactile support. They are aimed at accumulation of sensory perceptions, audio-visual and kinesthetic comparison and sensory-empirical identification of an object or quality.

Techniques: looking at real three-dimension flat objects and images, listening to speech and non-speech sounds, and tactile and manual kinesthetics.

2. Verbal methods are used, as a rule, in combination with other kinds. Their purpose is to evoke the child's emotionally positive response to verbal speech and stimulate reaction.

Techniques: conversation, vocal-emotional game, repetition of a sound after the child, intonation accent, synchronic dubbing of the child's voiceless phonation by the adult, choral speaking and reflected speech of an adult.

3. Practical methods. Such methods are considered to be the

leading ones in the work with infants and are used to accomplish all tasks of rehabilitation-educational activity:

a) direct intervention of an adult as the main method of education and rehabilitation. Techniques: manual techniques, massage, games and exercises (emotional, manipulative, object-related, process-focused, articulatory-mimic, imitative, etc.), accompaniment of verbal speech with paralinguistic means (movements, gestures, mimicry, and intonation);

b) indirect intervention of an adult associated with organization of the information field and the child's independent actions imitating the actions of the adult, as well as modeling the child's movements by the adult.

A characteristic feature of work with infants consists in the character of pedagogical intervention. Direct pedagogical consultation of the infant in an out-patient clinic produces little effect because of a short duration of counseling sessions; that is why work with the child should be carried out indirectly, through training the parents.

Group and individual forms of work are practiced.

Individual form of work is recommended for parents and children of the first half year of life. Consultations for parents are obligatory not less than once a quarter (two times during the first half-year). Children whose first half year of life falls on the autumn and winter months may get counseling at home.

Example of the first consultation of a family caring for a child with congenital cleft lip and palate.

Tasks.

1. *Pedagogical task* — to inform the parents about the causes of cleft lip and palate, about developmental peculiarities of children with cleft lip and palate, and about the stages of the child's rehabilitation. Diagnostics of the child's starting level of development. Guidelines for looking after the child with congenital cleft lip and palate (feeding – position and choice of nipple, walks), taking care of the child's mouth cavity, demonstrating techniques of the upper lip massage (for infants with cleft lip), and development of sensory and motor structures.

2. *Psycho-therapeutical task* — acquaintance with the child's family, elimination (reduction) of stressful situations in the child's family.

Example of the second consultation of a family caring for a child with congenital cleft lip and palate.

Tasks.

1. *Pedagogical task* – to work out the rehabilitation plan in detail (the expected time of *cheiloplasty or uranoplasty) together with the child's parents; specify the process of feeding, give recommendations about spoon feeding; instruct the*

parents how to carry out lip and palate massage; inform them about the developmental peculiarities of children with cleft lip and palate at the ages of 3-9 months.

2. *Psycho-therapeutical task*. To motivate the parents to carry out active pedagogical work and to prepare the family emotionally for the operation.

Starting with the second half year of the infant's life, group training of the families begins. Group sessions broaden the scope of the methods of pedagogical intervention in the child's family as several families take part in them. Accordingly, the pedagogue's task becomes more complicated. The pedagogue should pay special attention to family grouping (they should take into account the children's age, level of their physiological and mental development, etc.). The average number of families in a group is from 3 to 5. Training is held once every two weeks (or each week). More frequent sessions are tiring for both infants and parents.

Organization of the working space depends on the children's opportunities. If they cannot sit at all or cannot sit well enough, they can train lying on an individual rug, on the floor or half-sitting in the mother's lap. If all children can sit well enough they may sit on a common carpet in a half-circle; the mother is to be behind each child.

The following kinds of rehabilitation-educational work can be used:

- didactic games;
- didactic exercises;
- organization of the "information field";
- spontaneous training;
- lessons.

A didactic game is the basic form of pedagogical intervention of an adult. Depending on the activity focus, didactic games are subdivided into emotional, articulatory-mimic, imitative, manipulative, object-related, and process-focused ones.

During the first year of life didactic exercises represent a special kind of rehabilitation-educational work. While doing exercises the adult teaches the child, practices or consolidates the child's skills and habits. The required actions are performed in the form of playing or training and may be further on included in a didactic game or lesson as a constituent part, and may also be taken outside these activities and be treated as an independent kind of learning. Training exercises are long enough for an infant – they last for 8-10 minutes. Exercises on development and consolidation of a habit are done several times during the day.

Infancy is the time of active psychological development of a child. A helpless newborn does not only learn to move his own body but also learns to handle objects during the first year of life. The

given specific feature of this age sets specific requirements to the organization of the environment which fulfills the semantic function of an "information field" lying in the center of the child's activity. The set-up of the field depends on the didactic goals, and the time of its existence varies from several minutes to some days. Changeability is the necessary condition without which the information field becomes meaningless.

Spontaneous training is the main kind of teaching a typically developing infant at home. It is realized while caring and performing hygiene procedures. The adult is stimulated to carry out this kind of training by external affect and deep internal motivation. Spontaneous training is effective enough as it is built on love and attachment and biological and physiological relationship "mother – child".

Individual didactic games and exercises make up the organizational core of the pedagogical process. They are aimed at training the special skills and habits spontaneous development of which is late or distorted. As a specially designed kind of training, lessons are held for the whole group of children and parents and solve general problems urgent for all members of the group.

Now we will enumerate *the conditions of optimization of the rehabilitation-educational work* with infants with congenital cleft lip and palate:

– rehabilitation-educational games and exercises with children are conducted individually;

– the child performs playing actions with the mother or another exemplary (important) person;

– it is desirable to organize the child's playing in the natural environment which does not need additional adaptation;

– the time of playing depends on the emotional state of the child; more often than not, these are periods of wakefulness after sleep, feeding or walk;

– duration, frequency and intensity of rehabilitation intervention are determined by the child's working capasity;

– the work on formation of skills and habits is carried out systematically; one and the same exercise should be done several times during the day;

– it is possible to combine several exercises or divide an exercise into parts ("steps");

– it is advisable to transfer the formed skill into new space-temporal environments involving the closest adults;

– structural design of rehabilitation-educational work presupposes its modification and creative approach;

– it is recommended to follow the requirements relating to toys and other didactic materials.

Thus, timely purposive logope-

dic aid to infants with congenital cleft lip and palate includes logopedic intervention not only in normalization of peripheral vocal apparatus (articulation, voice and breathing) but also in communication and speech (impressive, gesture, etc.) in general and in sensory-motor, cognitive and personal spheres.

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