https://doi.org/10.52058/2695-1592-2023-11(30)-413-420

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SPEECH THERAPY WORK WITH CHILDREN OF EARLY AGE WITH ORGANIC OPEN RHINOLALIA

Abstract. This article examines speech therapy for young children with organic open rhinolalia. The authors consider various aspects of speech therapy that are adapted specifically for young children and take into account the anatomical features resulting from congenital cleft lip and palate.

The article provides a comprehensive exploration of the diagnostic process, highlighting the significance of early identification and assessment. A multidisciplinary approach, involving speech and language pathologists, otolaryngologists, and other appropriate experts, is necessary to create a comprehensive treatment plan. The paramount importance of comprehending the fundamental physiological factors underlying organic open rhinolalia is highlighted by the writers, as this knowledge enables targeted therapeutic strategies.

The article explores therapeutic approaches and exercises that enhance articulation, nasal resonance, and communication abilities in children with rhinolalia.

The authors also acknowledge potential challenges and limitations concerning the treatment process, emphasizing the importance of continuously assessing and adapting the therapeutic strategy based on the child's progress. The authors highlight the need to adhere to conventional academic structures, use objective and value-neutral language, and ensure grammatical correctness and precise word choice in the text. Valuable guidance is offered on engaging parents in the therapeutic process, acknowledging their pivotal function in promoting their child's speech development beyond formal therapy sessions.

The article is a valuable tool for speech-language pathologists participating in early intervention for children with organic open rhinolalia. Please find the revised version below.
It covers the details of this disorder and provides useful advice and evidence-based measures to enhance the efficacy of speech therapy for this particular cohort of children.

Therefore, achieving positive outcomes in the remedial process relies not only on consistent speech therapy sessions to enhance speech breathing, articulate processes, and phonemic perception but also on timely medical procedures, surgical intervention, and the child's psychophysiological wellbeing.

**Keywords:** rhinolalia, speech therapy

**Problem statement.** Congenital clefts of the upper lip and palate are among the most common developmental anomalies. They occupy 3–4 places in the structure of congenital malformations. According to statistical data, there is a tendency to increase this number due to the increased exposure of the human body to toxic substances as a result of the development of the industrial and chemical industries. A severe speech disorder called rhinolalia is caused by cleft lip and palate. Rhinolalia is a disorder of voice timbre and pronunciation caused by anatomical and physiological defects in the speech apparatus. In rhinolalia, cleft lip and palate is a factor that causes a number of other pathological changes and functions of the articulatory apparatus that exacerbate speech disorders.

Open rhinolalia, caused by congenital cleft lip and palate, is a subject of study for speech therapy, psychology and a number of medical sciences. This pathology leads to a lack of isolation of the oral and nasal cavities, resulting in manifestations of functional disorders that complicate the psychophysical development of a child from birth. Corrective work involves systematic, consistent and comprehensive interaction between surgeons, orthodontists, speech therapists and educational psychologists.

Surgery only creates the anatomical and physiological conditions for the development of correct pronunciation. After urethroplasty, children still have a pathological position of the tongue in the oral cavity, disorders of the muscles of the soft palate, which leads to a disorder of the timbre of the voice, its prosodic characteristics and a specific disorder of pronunciation. Complex treatment includes orthodontic and orthopaedic measures aimed not only at eliminating severe dentition deformities but also at normalising impaired functions. This emphasises the importance of early surgical intervention.

Corrective and developmental, psychological and pedagogical work with children with congenital cleft lip and palate is based on the need to understand the specific features and problems of this pathology, which determines the social orientation of the study of this problem. In the modern world, a person with a congenital pathology of the maxillofacial region should be considered not only as an object of medical treatment and social and educational assistance, but also as an active subject of society, creating conditions for self-realisation. Thus, the problem
of rehabilitation of children with this type of disorder is one of the most pressing in the modern world.

**Analysis of the latest research and publications.** According to a large-scale multicentre study conducted under the auspices of the World Health Organization by a group of specialists who combined databases from 30 countries from 2000 to 2005 and created a common database, the International Perinatal Database of Typical Orofacial Clefts, the prevalence of cleft lip and/or cleft palate is 9.9 per 10,000 newborns (IPDTOC Working Group, 2010). Medical studies by Volkova, Gulyuk, Kharkiv, Williams and others indicate that the prognosis for reducing the number of births of children with cleft lip and palate is unfavourable.

The problem of correctional and developmental work with children with congenital cleft lip and palate has been the subject of study by such scientists and practitioners as: S. Konoplyasta, N. Cherednychenko, V. Tyshchenko, M. Sheremet, Z. Martyniuk, H. Gavrilova and others. When describing disorders of the phonetic side of speech of children with rhinolalia, researchers draw attention to the fact that their sound pronunciation disorder is quite specific. The peculiar nature of sound distortions, characteristic only of rhinolalia, is due to disorders of the articulatory pattern, both organic and functional.

The analysis of psycho-pedagogical and speech therapy literature allows us to conclude that the directions of correction of sound pronunciation in preschool children with rhinolalia caused by congenital cleft lip and palate are not sufficiently studied. Also, the peculiarities of speech therapy work that should be carried out to correct this disorder are not fully considered. Therefore, it is necessary to pay increased attention to modern methods and principles of correctional and developmental work of a speech therapist with children with rhinolalia.

**The purpose of the article –** theoretical generalisation and analysis of the peculiarities of correctional and developmental work of a speech therapist with children with congenital cleft lip and palate at different age periods. Determining the importance of differential diagnosis of children for the correct choice of correction methods.

**Presentation of the main material.** When choosing tasks and methods of correctional and developmental work with children with cleft lip and palate, differential diagnosis is of great importance. The purpose of a child's examination is to assess the level of speech and language development, to identify the influence of anatomical and physiological features on speech disorders.

In the speech therapy diagnosis of rhinolalia, an important task is to distinguish between disorders that differ in mechanism. Not all symptoms present in children with cleft palate are due to this anatomical disorder by mechanism. For example, there are many cases when, in addition to anatomical and physiological defects of the dentition, children have impaired innervation of the muscles of the articulation apparatus. In fact, these are cases with complex comorbid disorders
involving two different mechanisms: central innervation deficiency and structural anomaly of the dentoalveolar apparatus. In this regard, for the correct choice of tasks and methods of correction, differential diagnosis of various mechanisms of linguopathological syndromes is necessary (Kornev, 2019)

After cheiloplasty and uranoplasty, a speech therapy examination of the child is carried out every six months, including differential diagnosis between open rhinolalia, dyslalia and other speech disorders and redefinition of tasks and methods of corrective work at each stage of rehabilitation.

During the examination, attention is paid to the following indicators
- the type of congenital cleft and the age at which lip plastic surgery (cheiloplasty or cheilorhinoplasty), hard and soft palate plastic surgery (veloplasty, uranoplasty) were performed (Kharkiv, 2013)
- the anatomical structure of the articulatory apparatus, taking into account the structure of the hard palate, the length of the soft palate, the possibility of active and passive closure of the soft palate with the back of the pharynx, the structure of the dentition, the nature of the bite, assessment of nasal resonance, its severity, and the constancy of hypernasal resonance; voice disorders;
- compensatory facial movements; - sound pronunciation; - general speech intelligibility;
- lexical and grammatical structure of speech;
- function of the palatine pharyngeal closure;
- hearing examination. Based on these data, a speech therapy conclusion is formed and, if necessary, additional specialist examinations are prescribed.

The tasks of corrective work with children with congenital cleft palate differ depending on the period of comprehensive treatment.

In the preoperative period with children under 1.5-2 years of age, correctional work should be aimed at stimulating the child's speech development. Stimulation is carried out through teaching parents how to interact with their child in play when babbling, words and first phrases appear.

In the postoperative period, the main goal is to include the formed anatomical structures of the soft and/or hard palate in the speech process.

In sessions with a speech therapist, the focus is on the development of correct speech breathing, the formation of directed oral exhalation, and the activation of the palatopharyngeal closure.

Existing methodological approaches to the development of soft palate mobility and normalisation of voice timbre can be divided into power and natural, and the methods used can be divided into active and passive.

The use of power approaches was based on the idea that the initial excitation caused by excessive stimuli has a wide range of effects, activating the maturation of speech mechanisms in the structures of the speech apparatus formed by the surgeon. However, it should be noted that excessive tension of the muscles of the speech and
language apparatus and increased speech exhalation can provoke additional nasal expiration, overstrain the vocal cords and make it difficult to consolidate correct pronunciation in independent speech.

Natural approach is the formation of natural, unstressed articulatory movements based on previously developed correct breathing and voice formation. The natural method is physiological and allows achieving the optimal ratio of speech intelligibility with the lowest nasal expression and vocal cord tension. The child uses natural pronunciation patterns in independent speech.

Passive methods of training soft palate mobility include massage, mechanical closure with a spatula, and physiotherapy procedures.

Active methods include training soft palate mobility in physiological acts (yawning, swallowing, coughing) and during phonation (pronunciation of vowel sounds).

The combination of natural approaches and active methods is the most physiological and accessible for the child. The task of correctional work is to obtain an optimal acoustic result with the least muscle tension, soft voice attack and correct pronunciation (Bryukhovskikh, 2013).

Speech therapy work with young children in the context of cycloplasty and uranoplasty before the formation of phrase speech is an urgent issue in modern speech therapy. Based on the results of the speech therapy examination, a plan of correctional work and a form of interaction between the speech therapist and the child are developed - individual and subgroup sessions or a programme for home lessons with parents.

At the preliminary stage, the tasks are as follows:
- reinforcement of all vocalisation attempts;
- development of kinetic sensitivity;
- development of a directed jet of exhaled air through the mouth;
- encouragement of repetition of general and articulatory movements;
- development of auditory attention and auditory perception.

At this stage, the speech therapist's counselling and educational work with the child's parents plays an important role. It is important to explain to parents how to properly stimulate the child's speech development by introducing speech games and exercises into everyday life. The speech therapist's advice should be provided to parents in an accessible form, including a list of games and exercises, the frequency of their implementation and the expected results. It is advisable to define the areas of work, the content of games and exercises for each area, and methodological recommendations for interacting with the child during games.

Reinforcement and encouragement of baby babbling at the age of 3-6 months involves the use of any natural communication situations, joint activities (e.g., dressing, bathing) and any moments when the child responds to the sound of the mother's voice. Communication with the child should be emotional, and expressions
of joy, surprise, and questions should be emphasised in tone and somewhat exaggerated. At 7-8 months of age, it is advisable to start playing games aimed at reinforcing and encouraging imitation of movements following an adult. In the process of psychomotor development, a child's ability to repeat body movements is ahead of imitating more precise, small movements. Gradually, games include repetition of facial movements - yawning, blinking, smiling.

Repetition of tongue and lip movements is the ultimate goal of games. Encouraging sound imitations of simple adult vocalisations is used to some extent by all parents. If soft palate plastic surgery is performed at 6-7 months of age, then in the first weeks after the surgery, it is necessary to include the formed soft palate in phonation. First of all, the exercises include the vowels [a], [e], pronounced by an adult calmly, long, on a soft voice attack. After one to two weeks, the vowel [o] is included in the exercises, and after three to four weeks, the vowels [u], [y], [i] are added. The sequence of work on vowels is conditional, as it is important to reinforce and encourage any attempts by the child to pronounce vowel sounds and any combinations of them. The development of auditory and phonemic awareness is a continuation of these games. In ordinary everyday games and activities, whispered speech is used, whispered instructions for a child standing with his/her back to the speaker. The development of auditory attention is carried out in the process of well-known games with boxes or jars filled with cereals, with musical instruments and toys. The development of oral motor skills is the repetition of tongue and lip movements. It is possible to use the sucking reflex to stimulate tongue protrusion, lip smacking - everything that contributes to the formation of new kinesthesia necessary for speech actions in the postoperative period. The purpose of exercises for the development of directed oral exhalation is to develop a directed jet of exhaled air for further correction of pronunciation.

The tasks of speech therapy at the stage of first words (from 10-12 months) are as follows:
- consolidation of vowel and consonant pronunciation in speech;
- development of articulatory motor skills, stimulation of the child's experimentation with his/her own articulations;
  - development of soft palate mobility during phonation;
  - development of smooth speech breathing;
  - continuation of work on the formation of directed oral exhalation;
  - formation of auditory and speech differentiation of speech sounds;
- production of consonant sounds with correct sound and articulation pattern by imitation.

Consolidation of vowel pronunciation is necessary as a basis for the development of sound pronunciation skills, correct distribution of speech exhalation and as a material for further training of soft palate mobility and normalisation of resonance. Consonants in syllables, words and phrase speech are consolidated on
the basis of sounds selected from sound imitations and simple words: the speech therapist can identify a group of sounds that are pronounced correctly or are available in the nearest developmental zone. The development of tactile sensitivity continues with the use of gentle stroking, tapping the lips, nasolabial folds, and cheeks. Depending on the state of muscle tone, the actions can be more or less intense, but their main goal is to make children aware of sensations in the susceptible areas of the peripheral articulatory apparatus and facial muscles (Konoplyasta, 2006).

The development of articulatory motor skills becomes more differentiated. Articulation exercises are selected for groups of sounds based on the results of phonetic and phonological studies. Too many articulation exercises make it difficult for the child to master them, it is recommended to focus on the most important ones.

The development of directed mouth exhalation using various blowing toys remains the most important stage of work. For the child's active participation, you should look for new objects and toys. The objects should be light and the toys should not require forced exhalation. These can be leaves, fluffs, dandelions, dew drops on leaves during a walk.

For children who have numerous errors in the processes of word formation, word change and disorders of coherent speech, work is carried out to correct the lexical and grammatical side of speech and develop coherent speech, taking into account the child's age.

The presumed cause of the disorder of voice pronunciation and timbre determines the tasks and methods of work for each area. Speech therapy work is based on the method of dyslalia correction, taking into account the specifics of sound substitutions. Fricative and liaison consonants can be replaced by nasal exhalation, so differentiation of nasal and oral exhalation is necessary at the preliminary stage of work (Volosovets, Kutepova, 2007). In case of dyslalia with congenital cleft palate, despite the functional integrity of the palatopharyngeal junction, increased exhalation should be avoided. During pronunciation, the articulums should be light, unstressed and natural.

At the same time, step-by-step work is carried out on the development of phonemic awareness. The basis of phonemic awareness is phonemic hearing, i.e. the ability to isolate and identify speech sounds.

In the process of studying the peculiarities of the correctional and developmental work of a speech therapist with children with congenital cleft lip and palate, it was concluded that the system of correctional and developmental work of a speech therapist must ensure: development of mobility of the soft palate, elimination of nasalisation, formation of correct articulation of all sounds, development of phonemic perception. The content of speech therapy work may vary depending on whether the child has been operated on, whether a speech therapist worked with them before the operation, how long the preparatory work was, whether they are psychologically ready for speech therapy, etc. Based on the study of the
speech activity of children with open organic rhinolalia, conducted using the principles of a systematic approach, complex interrelationships between individual components of speech activity were identified, which make it possible to determine the purpose, tasks and directions of correctional work.

References: