

Summary

Logopaedic and Linguistic Aspects of Diagnosis and Therapy in Children with Cleft Palate

Cleft palate or cleft lip and palate leaves a mark on the entire life of a person born with this defect. From the very first moments of life, anatomical abnormalities affect the way of breathing, feeding, and vocalizing by the child, which later translates into delays and disorders in speech development. The monograph is devoted to speech disorders in individuals with cleft palate (or cleft lip and palate), which are referred to as *palatolalia* or *cleft-related dyslalia/alalia*. These disorders have a varied nature but are largely associated with nasal resonance disturbances in the form of open nasality, or *rhinolalia*.

In Polish, oral, non-nasal sounds decisively prevail, during the articulation of which the soft palate plays a crucial role, as its contact with the back wall of the pharynx excludes the nasal cavity from this process, and the entire air stream is directed into the oral cavity. The movements of the soft palate (along with the movements of the back and side walls of the throat) are thus responsible for eliminating nasal resonance from the process of producing oral speech sounds. The anatomical conditions in children with cleft palate (or cleft lip and palate), even after surgical treatment, differ from those in healthy children, and their soft palate often does not provide full isolation of the oral cavity from the nasal cavity, resulting in open nasality (*rhinolalia*), characterized by an unpleasantly perceived voice timbre. Nasal resonance disorders, in turn, significantly affect the articulation of individual phonemes and the intelligibility of such a patient's speech, as articulatory abnormalities in such cases may involve several articulatory features at once and may vary depending on the speaking rate and existing habits. Both speech diagnosis and speech therapy are exceptionally complicated. The therapeutic process usually lasts many years. Often, progress depends on the support of other specialists, especially in cases of hearing problems or anatomical palatopharyngeal insufficiency. Surgical intervention in the form of pharyngofixation surgery plays a special role in the process of improving speech in patients with palatopharyngeal insufficiency. These actions are implemented as a last resort when there is no possibility of improving speech through speech therapy. The therapeutic practice after such a procedure requires appropriate knowledge on the subject.

Years of working with cases of this kind prompted me to gather and organize information on speech therapy procedures in clefts of the palate and to share my own experience and craft. Therefore, the monograph is devoted to ways of improving the speech of children with isolated clefts of the palate or lip and palate at different stages of their lives (and at different stages of treatment).

The monograph consists of three parts, a summary, and a list of cited literature. The chapters in the first part contain basic information about the developmental defect that is the facial cleft, namely: the pathogenesis of the defect, its classification, description of the anatomical conditions of persons born with various types of cleft, and a description of abnormalities in development, with particular emphasis on the influence of anatomical and functional differences on speech development, as well as general principles of surgical and orthodontic treatment. The core of the monograph is the second part, containing chapters dedicated to the characteristics of speech disorders in individuals with clefts as well as speech diagnosis and therapy, concerning younger (0–3 years of age) and older children (from the third year of life). In the case of younger children, the measures are mostly preventive, but are very important, as their absence may result in significant speech disorders later on. The therapeutic approach in the case of older children is presented in several chapters according to the type and intensity of speech disorders.

First and foremost, attention is paid to the therapy of nasal resonance disorders in children with palatal clefts (i.e. with a diagnosis of palatolalia along with rhinolalia). In the diagnostic process in such cases, it is most important to determine the cause of nasality (anatomical or functional basis), as this has great significance for planning the therapy of such a child. Depending on the basis of this disorder, two paths of action can be distinguished. In the first, if nasality has a functional basis, it is necessary to begin therapy with intense work on improving the articulatory organs focusing particularly on the muscles of the palatopharyngeal sphincter, to gain full control over the exhaled air stream and eliminate open nasality. Only after that can work on achieving the normative realization of individual phonemes begin (in an individually determined sequence based on the sounds deformed or altogether unarticulated by the child). In the second path – with nasality of an anatomical basis (or with an ultimately undetermined cause, but at a very intense level) – the goal of therapeutic action is to prepare the child for pharyngoplasty, namely to achieve mobility of the soft palate, which will facilitate the conduct of the surgical procedure, and subsequently the achievement of normative articulation afterwards. It is worth noting that in both schemes of action, in the initial phase of therapy, a huge role is played by exercises improving the muscles of the soft palate and the lateral and posterior walls of the throat cavity (especially isometric exercises, massage of the oral cavity along with the induction of the gag reflex, and electrostimulation).

In post-pharyngoplasty speech therapy procedure, to which the next chapter in this part of the monograph is devoted, it is important to consider the unusual

anatomical structure of the palatopharyngeal sphincter obtained as a result of the operation, and take this into account when selecting exercises. In the first months after the operation, speech therapy should be conducted with particular caution, so as not to damage the connection made by the surgeon between the soft palate and the back wall of the throat cavity. Not all children with structural nasality undergo pharyngoplasty. There are also cases when this procedure is ineffective. Speech therapy proves difficult then, and is usually ultimately unsuccessful. The speech therapist aims to achieve a state of speech where the articulated sounds are as close as possible to the normative realization, and the goal in such cases is to improve the intelligibility of such the person's speech.

The last chapter in the second part of the monograph describes the therapy of children whose speech development is delayed and disturbed compared to children developing at the age norm expected for this group (which is referred to as *speech underdevelopment* or *cleft-related alalia*). Disorders in such children may have a complex etiology, and the cleft is only one of the factors negatively affecting the process of acquiring verbal communication skills. Often this is conditioned by hearing impairment, but sometimes also by reduced intellectual efficiency, comprehensive developmental disorders, or central nervous system dysfunctions. Speech therapy is complicated then, as it involves shaping language skills within all subsystems. The speech therapist must therefore have knowledge both about the standards of diagnostic and therapeutic procedures in such cases, and about the structure of the language system, as this is necessary to fill the therapy plan with linguistic structures, according to the degree of their difficulty and the order of their acquisition in ontogeny.

The third part of the monograph presents selected case studies. They have been selected to offer a representative overview of disorders characteristic of children with clefts (occurring as an isolated defect or as part of a complex of defects), and also ways of their improvement. I therefore present the schemes of speech therapy for specific children, but which can be the starting point for creating an individual therapeutic program for other children with this type of defect.

The monograph is primarily addressed to speech therapists, speech therapy students, academic staff, researchers of speech and its disorders, as well as educators, psychologists, and other specialists working with such cases, and also to parents of children with this defect.