DYSPHASIA (SPEECH DISTURBANCES), CAUSED BY HYPOACUSIS
(Phoniatric aspects)
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The clinic-social and pedagogic ob-
servations testify to the fact, that
the absence of the auditory control in
the formation of the communicative
means is leading to the disturbance of
the speech- and voice-formation. Due to
the tedious work a hard hearing child
may rehabilitate the speech communi-
cation and become social adequate member
of our society.

People with the defect of hard hearing
are regarded as people with damaged
hearing in their speech communication,
needing special measures for preventing
these defects.

The communication abilities limitations,
the decline of the working capacity and
intellectual development of the people
with defect of hard hearing are promoting
the infringement of their psychosocial
development. The aggravation of the de-
defects of general and linguistic develop-
ment is determined by the type, degree
and time of the beginning of the hearing
damage, the individual conditions of life
and the social-cultural environment, as
well as by the inadequate level of education
process at special schools and it de-
mands a particular form of influence,
corresponding to the modern stage of soci-
ety development. The speech-vocal dis-
turbances of people with the defect of
hard hearing are serving as risk factors
for preserving the full working capacity,
their social adequacy and integration in
the federation of hearers.

With advance of the scientific-technologi-
gical progress the need of the national
economy in the labour reserves has in-
creased, thus the social and vocational rehabi-
lation of people with the defect of hard
hearing is of special significance.

The study of the peculiarities of the
speech of the earlier- and later-deaf
pupils of special schools ( who have ear-
lier had normal speech function) has been
carried out at the age of (7-17). The de-
termination of speech distinction has
been carried out by the method of syllabic
articulation with subsequent phonetic
analysis of mistakes and it has helped to
determine, that in the result of hypoacu-
sis is occurring in the deterioration
speech distinction percentage, directly
depending on the degree and remoteness of
the hearing disturbance. Predisposition
to the replacement of the soft consonants
by hard ones, the deviating of the voiced
consonants is typical. With the increasing
degree of hypoacusis the deterioration
of vowel distinction process (particular-
ly a,e,o ) is observed.

It has been noted, that if within
the range of 500 - 3000 Hz the hearing loss
constitutes more than 30 dB, speech delay is taking place and its melodies and tone
formation are broken. If the hearing loss
is more than 60 dB the acoustic ways of
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of children, during the pronunciation of the low sounds, the resonant cavities of the larynx are widening or are deeping, but in case the high sounds they are narrowing. The degree of volume changes of the resonant cavities is directly depending on the hearing acuity and the functional condition of the vocal apparatus.

The duration of the separate sounds and especially the vowels is shortened or lengthened, due to it the disturbance of rhythmnics is observed already at the age of 5-7. The melodies of speech is sharply changing since the ability to discern the pitch of the acoustic stimulus is being violated.

In case of the full absence of the hearing sensibility (the third and the fourth degree of hypoacusis), the rightness of stresses in the speech is violated. The disturbance of the hearing acuity with respect to the high and low tones are negatively influencing the function of the vocal folds right up to its complete cessation. The disturbances of the functional condition of the vocal apparatus, revealed during electronic laryngoscopy, expressed in the motor violations of the neuromuscular apparatus of the larynx of the functional character, the degree of which was not indirect dependence of the laryngoscopy data, but on the contrary it depends on the degree of hypoacusis and the time of its acquisition. So, in case of the first and the second degree of hypoacusis the vibrations of the vocal folds, uneven and asynchronous in amplitude have been revealed, when examining the phonation phases hypokinesia of the vocal folds in case of the phonation has determined their incomplete closure, the presence of displacement of the mucosal membrane on their internal edge. In case of hypoacusis of the third and the fourth degree closure of the vocal folds is strong, that determines the hard attack of the voice.

The pressure of the expiratory air is diminishing with the increase of degree and time of hypoacusis, closure force of the vocal folds is changing, the detonation of voice is observed, falsest sounding is becoming evident. The above-stated pathology of the voice formation process is leading to the nodulation on the vocal folds in the vibration centre.

The investigations data of the speech quality at different degrees of hypoacusis testify to the dependence of the speech distinction on the degree of hypoacusis. Predisposition of the replacement of the soft consonants by the hard ones and the devoicing of the voiced consonants, apparent already at the second degree of hypoacusis is typical. The time of maximum phonation is representing a motley picture and it is in close interdependence on an attack of the sound and correlation of inhalation time to exhalation. With the aggravation of hypoacusis and shortening expiration the time of maximum phonation has been decreasing. Phonation coefficient of people with the defect of hard bearing is increasing with the hearing impairment.

The speech of people with defect of hard bearing is characterized by disturbances, concerning all the three types of stresses: rhythmical, dynamic and melodious. The investigations data of the external respiration function are testifying to the fact, that voice disturbances of people with the defect of hard bearing is connected to a considerable extent with disturbance of the phonation breathing. Often during the phonation an inhalation is being used, instead of exhalation, that it is distorting the articulation and is making it impossible, inspiratory phase is being shortened in this position. Coordination between expiratory phase and phonation is violated. During roentgenoscopy observations the paradoxical function and asymmetry between the right and left half of the diaphragm is being revealed from I2 to I4.

The results of the carried investigations are indicating to the fact, that the phoniatric treatment of hypoacusis should be expressed in the elaboration of the number of the conditioned reflexes: breathing, phonation and articulation. The results of speech rehabilitation are better, if logophono rehabilitation begins earlier, since in the peripheric department of speech-vocal apparatus, functioning quite satisfactorily at the beginning (up to 4-5), in due course (at I4-I5 years and older) the mechanisms of speech formation are acquiring steady disturbances of phonation breathing, function coordination of the vocal folds, resonant cavities and articulation. Due to the tedious and purposeful work of the specialists a hard bearing child may rehabilitate the speech communication and become a social adequate member of our society, that will help to expand the volume for the choice of professions during the vocation guidance.