Logopedic Therapy of Children with Cleft Palate and Velopharyngeal Insufficiency

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INTRODUCTION

The diagnosis and habilitation of cleft palate (CP) and velopharyngeal insufficiency (VPI) is a complex medical and logopedic task.

The purpose of the treatment is to develop a physiologically intact speech through medical and logopedic activities. Each year we examine about 300 VPI children with or without cleft palate at the Phoniatriec-Logopedic-Pedaudiological Station of the Heim Pal Hospital for Sick Children in Budapest. The habilitation of CP and VPI children is one of the most important tasks of our department. 4) 8)

THE LOGOPEDIC TASKS IN HABILITATION OF CP AND VPI CHILDREN

The speech therapist’s tasks in habilitation are extremely varied. These are:
1) advising the parents
2) keeping track of speech development
3) registration of correct speech status
4) participating in setting up indication for pharyngoplasty
5) speech therapy

1) It is for the speech therapist to advise the parents of the cleft palate child as early as in infancy and to point out the difficulties involved in the development of speech. We believe that it is of major importance to furnish the parents with information, as the preparation, on the part of the parents, of the child for speech therapy and relevant exercises. It is the duty of the speech therapist to advise the parents on the most different kinds of blowing exercises, so that they can be started as soon as the child reaches the age appropriate for cooperation.

2) As commonly known, the delayed development of speech is one of the most significant symptoms in the cleft palate child.

We have made studies of the successive order of development of different speech sounds. The examinations were carried out with the help of personal observations (lasting 2 to 3 hours at one time), questionnaires and comparative analyses.

According to our observations, the infants usually produce the vowels [a], [e] at the
right age, pronouncing them correctly. The vowels which have to be produced with the aid of formation of the lips ı, ı, they use at a later time and less frequently.

As far as the consonants are concerned, we have noticed several defects. Also the cleft palate infants use those consonants which the healthy ones learn to pronounce by the age of 3 to 4 months. These are the ı, ı, ı and ı. The ı, ı and ı only appear sporadically in the infants with CP. Our observations concur with the findings of Isshiki, Honjow and Morimoto that the plosives which have nasal counterparts ı, ı can be substituted much more easily with these nasal counterparts ı, ı than the voiceless ı, ı, ı and ı. We have also found a connection between the type and extent of the cleft and the seriousness of the speech disorder.

3) The basic task in phoniatric-logopedic work involves the evaluation of the speech of CP and VPI children. We are convinced that, besides etiology, the most important task in diagnosing velopharyngeal insufficiency is the evaluation of speech.

In the registration of logopedic status, we suggest to evaluate the following parameters:

- vocabulary
- articulation
- speech intelligibility
- nasal resonance
- nasal escape

The detailed examination of articulation is of primary consideration, which takes place according to the following schema:

Besides evaluation of articulation, it is very important to judge the speech intelligibility, too, which informs us about the speech as a whole, i.e., about the extent to which the child’s speech is understood by its surroundings. Our department has worked out a test of 25 and 50 words and a special list containing mainly ı and ı phonemes for evaluating the speech intelligibility on the basis of a standard vocabulary. A panel of six persons who do not know the text listen to the standard material of words recorded by the patient on a tape in standard condition. The judges (a panel of six persons) write down what they have heard. The correct scores, i.e. the ratio of words correctly understood (correctly pronounced by the patient), represent speech intelligibility in percentage.

A part of speech examination concerns the observation of the change in nasal resonance. We assess the change on the basis of a 5-point descriptive scale:
4) It is important to decide whether conservative techniques are sufficient to correct the child’s rhinophony or (velo) pharyngoplasty is ab ovo essential.

We have worked out a teachability test which is designed for everyday practice and quick information about surgery. Accordingly a speech correcting operation can probably be avoided if there is at least one vowel that is devoid of hypernasality or can be made so by artificial means (increase of sound intensity, hard onset of voice etc.), if nasal escape occurs only in fricatives and affricatives; if [k], [g] or [p] exists in the young child or can be developed in a short time. The result is doubtful if the child does not perceive the difference of nasality and if at least the intraoral air pressure necessary for the production of the voiceless plosive can be brought out. Logopedic treatment in itself is certainly insufficient if none of the condition persists or can be fulfilled. Naturally, a quick test cannot be considered an alternative to a complete speech examination.

5) In addition to the registration of correct speech status and the participation in setting up indication for surgery, the speech therapist’s primary task is to conduct exercises aimed at speech correction.

**SPEECH THERAPY**

Speech therapy can be done all on its own, but it may also be ancillary to surgery, drug treatment or instrumental therapy. The three main questions concerning logopedic treatment are these:

1) When should the therapy be started?
2) How long should the child be treated and within the framework of what arrangements?
3) What principles should govern the treatment?

There is no lower age-limit as to the question of when effective logopedic treatment can be started. This means that the treatment can be started as soon as the child is able to participate in it and the development of speech has begun. A child whose ability to speak is overdue may also be involved in preparatory arrangements, on the level of advising the parents. The general rule is that speech therapy may be started at the age of 2 to 2 1/2 years if the child has a satisfactory level of intelligence.

There are different arrangements for speech therapy. These are:

1) out-patient treatment
2) institutional (hospital) treatment
3) home-training (supplementary solution)
4) hotel system (intensive therapy)
5) school

Out-patient treatment, twice a week, is the most frequent practice. Home-training is a supplementary procedure, carried out by the parents according to the instructions provided by the speech therapist. The best solution seems to be the hotel system. The procedure is that with one parent present, the child is given individual treatment several times a day, for a period of 2 to 3 weeks. The treatment can be repeated 2 or 3 times in the course of a period of 8 to 10 weeks. Our experience shows that this is the best method to eliminate speech defects.

Individual treatment is much more effective than group therapy. Logopedic therapy consists of the following steps:

1. The development of proper breathing while speaking by means of blowing and sucking exercises, for example, by blowing paper strips, cotton-wool, a mouth-organ or a recorder. Sucking through a straw.
2. Articulation exercises:
   Lip exercises (opening, closing, pulling apart and pursing the lips; massaging surgical scars: holding paper strips between the lips).
   Tongue exercises (sticking out and raising the tongue, clicking and rocking the tongue).
   Exercising the palate (chewing exercises, yawning, the pronunciation of the words ['abba'], ['ebbe'] with the nose closed, puffing up the cheeks).
3. Once we have managed to develop breathing through the nose and the mouth (separately), and the child has performed the articulation exercises, we can begin developing the speech sounds.
   The first task is to develop the vowels without nasality. Taking a deep breath the child should be encouraged to say aloud the vowels ['a'] and ['e'].
   There is no fixed order with the consonants, but it would be useful to start with the ['p'] and the ['b'].
4. In developing the speech sound it is very important to improve the ability to differentiate among the sounds because - as is known - conductive hard of hearing is of frequent occurrence in a cleft palate child, due to serous otitis and incorrect function of the Eustachian tube. Hence it is essential that we practice, in a playful form, differentiation among sounds; it also helps improve the perception of speech.
5. The content of the therapy is to be determined on an individual basis, and the treatment should be continued until speech becomes perfect or, taking all circumstances into consideration, it reaches an optimal stage.

In instances where no progress is noticed in the course of the therapy or progress is too slow, it is by all means essential that we take counsel with the phoniatrician and the surgeon and that we pursue further examinations.
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References

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