

Speech And Language Development Disorders In The ENT-Practice

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Abstract

Recommendations are made to otolaryngologists in ENT-practices for an effective diagnostic management of disorders in speech and language development.

INTRODUCTION

Children who fail to develop adequate language skills or appropriate social skills are often referred for otolaryngologic examination and evaluation of possible hearing deficits. The diagnosis and therapy of speech and language development disorders in children asks for multidisciplinary approach and close cooperation between pediatricians, otolaryngologists, psychologists, and logopedic personnel. The following article makes recommendations to otolaryngologists for an effective differentialdiagnostic management.

SPEECH AND LANGUAGE DEVELOPMENT DISORDERS

Deficits in speech and language development may show evidence for neurologic disorders, cognitive difficulties, and abnormal hearing. They can also be signs of emotional, social, family and behavioral problems. Finally, they can signify the need for evaluation of abnormalities of tracheal and laryngeal function and oral-motor development. (Tab. 1)

Figure 1

Etiology of speech and language development disorders
• genetic
• brain damage
o prenatal, e.g. by infections
o peripartal, e.g. because of asphyxia
o postpartal, e.g. because of meningitis, encephalitis, trauma
• symptom of mental retardation, e.g. metabolic disorders
• deficiency of speech organs: clefts, severe malformation of the jaw, malalignments, macroglossia
• social deprivation
• psychiatric diseases, e.g. early infantile autism, psychosis

Diagnostic measures must be taken, if an 18 month old child is not able to speak single words with a clear, specific signification. A systematic approach to the child with suspected language or speech development disorder includes

screening of expressive and receptive language, general development, and hearing. Besides of the hearing test, brain function disorders must be detected, and an examination of the vocal, hearing, and speech organs are mandatory. Besides of this, there is need of information about auditive perception, auditive-linguistic perception, active vocabulary, general and oral motor activity, emotional development, phonation, and grammar and syntax abilities of the young patient.

The examination of the child is most effective, if initially its parents fill out an history report before consulting the physician, so to get valuable information about the prenatal and natal period as well as the period of early infancy. Diagnostic measures should be taken according to the degree of priority, e.g. in case of possible hearing disorder with a hearing test. Examination should be done in an adequately supplied room suitable for children. Otolaryngologic reflection should only be done at the end of the first examination, so to achieve best diagnostic results. Especially reactions to acoustic stimuli are in high gear, if the child is relaxed and without fear. In spite of a slightly higher time exposure required for these organisational measures, this method leads to precise and rapid results.

In case of congenital hearing disorders the hearing test should be done prior to the verbal sensitive phase of the child, i.e. at the age of 6 – 12 months. Bilateral hearing is marginal for language development, which asks for a hearing ability of 300 – 3000 Hz according to the frequency of the human voice.

The diagnosis of infantile cerebral disorders is performed easily, if the child shows disorders of cerebro-motor

disturbances with increased or decreased muscular tonus. Children with minimal brain dysfunctions show psychiatric symptoms such as emotional or behavioural disturbances, delay in speech development, neurological microsymptoms, disturbances of minute motor activity, and pathological findings in psychological tests. Children with speech disabilities need a precise diagnosis of visual and auditive perception, as speech and voice disorders often appear because of partial failure of the auditive perception.

FUNCTIONAL VOICE DISORDERS

Are of different etiology. They may occur in connection with organic diseases of the larynx, inflammation, injuries and after operations. Severe general acute or chronic diseases and excessive weight loss should be mentioned, too.

Minimal deformities of the vocal cord, poor development of the vocal apparatus with asymmetric larynx or weakness of the larynx muscles often lead to persistent dysphonia because of infectious diseases, even after only slight functional or emotional stress. Functional voice disorders also occur because of excessive and inexpedient use of the voice.

Dysphonia because of depression or psycho-social problems should be taken into account, too. Bad housing conditions, school problems, excessive demands on the child, social strains such as alcoholism or delinquency within the family are some of the possible aspects. Besides of this, there are various neurotic voice disorders, one of them to be mentioned as psychogenic aphonia.

To achieve the correct diagnosis, the history of the child is marginal. As differential diagnoses voice disorders because of endocrinological diseases and residuals of brain function disorders must be taken into account.

HEARING LOSS

Can impair the individual development during the entire childhood. Especially moderate hearing losses are difficult to diagnose because they rather present as speech or learning disorders. Therefore all children with speech or language delay should undergo audiologic testing, regardless of how well the child seems to hear in an office setting, and regardless of whether other disabilities are present which might explain the disorder.

There is a significant relationship between the conductive hearing loss resulting from recurrent otitis media during the

first 3 to 5 years and subsequent problems in speech and language development. The serous otitis media is a frequent disorder, as 80 % - 90 % of children up to the age of 8 years have at least one episode of middle ear effusion. However, there is a spontaneous recovery rate of about 95 %, so that initially conservative treatment should be preferred (Valsalva maneuver). In cases of persistent middle ear effusion, adenoidectomy and myringotomy should be discussed, and, in cases of recurrence, a ventilation tube should be inserted to reduce pathological changes in the middle ear and subsequent delayed speech development. In conclusion, all infants and young children, especially those at higher risk, should be examined for otitis media during regular medical checkups, and speech and language treatment should be undertaken as early as possible.

Patients with mucopolysaccharidoses are frequently hard of hearing. This disorder is often the result of chronic serous otitis media. Such patients frequently undergo myringotomy. A progressive neurosensory hearing loss is less often observed. Examination of temporal bones suggest arrested development including incomplete pneumatization. Hair cell dysfunction is implicated.

Providing a hearing aid to a child with proven hearing disorder is decisive for the social, psychological and speech development of the child. Depending upon the age of the child, the fitting of a hearing aid requires a variety of strategies most different from those applied to adults. The early fitting of a hearing aid is more difficult, needs more time and very much patience and experience. In addition, the child requires intensive early and long-term aftercare to ensure normal speech development. Close communication among pediatrician, otolaryngologist, and speech and hearing personnel is essential to maximize the communicative skills of those children.

RESONANCE DISORDERS

Occur as rhinolalia clausa or aperta. The etiology of rhinolalia clausa are adenoids, foreign bodies, and strictures of the nasal cavity. Operative procedures in the oro-, naso- and hypopharynx may lead to more or less severe speech disturbances (Moller 2001). Open nasal speech may occur after tonsillectomy. Especially in children with cleft palate, deterioration of pronunciation after tonsillectomy always must be taken into account. In dependency to the cranio-facial morphology in the vertical dimension, the configuration of the bony nasopharynx and the sagittal jaw

relationship are of significant importance. Both the position and function of the soft palate are essential for the development of an open nasal speech. All children with cleft palate must undergo oto-audiological testing within the first 18 months for the early diagnosis of catarrhal otitis, serotympanon, malformation of the ear and conduction deafness, which have adverse influence on the child's speech development.

Malformations of the palate should be detected prior to adenotomia and tonsillectomy. There also may be a submucosal cleft palate, or, more often, a short palate, in which the distance between uvula and posterior pharynx is too wide. Congenital velopharyngeal insufficiency or paresis is not rare, in most cases they occur as residual after infantile supra-bulbar palsy. In their history these children had difficulties when drinking, with nasal and tracheal swallowing up.

ALLERGIES

Children with diagnosed allergies may also develop vocal disturbances, articulation errors, and hearing disorders. Vocal quality disorders may occur in relationship to bronchial asthma in association with other allergic reactions. There is a strong relation between allergic rhinitis, misarticulations and hearing loss, too. The presence of speech sound omissions in allergic rhinitis children above age 8 may predict the presence or history of fluctuating hearing loss.

INTUBATION AND TRACHEOTOMY

In a study on 31 children Hill/Singer (1990) described the speech and language development after intubation. In all cases intubation occurred before the age of 13 months and remained in situ for more than 3 months. Non of the children had primary neurological, developmental or mental disorder. The results based on the children's age showed a clear pattern of language disability in the expressive language of the oldest group of children, although they were previously thought to develop normal speech and language skills. A report on children with tracheotomy for more than 12 months (Arvedson et al. 1992) showed similar results, so that these children should undergo early diagnosis of speech-language pathology.

CONCLUSIONS

Because of its particular importance of speech for the psychosocial development of the child, early diagnosis and therapy is vital. Both speech and language should be adequately developed until school enrolment. In case of delayed therapy the sensitive stage of speech development is missed.

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References

1. Plinkert PK: Pathologische Veränderungen des Mittelohres und Sprachentwicklungsverzögerung. Vermeidbare Folgen von Tubenfunktionsstörungen und Seromukotympanon? HNO, 1995, 43, 2:53-7.
2. Zorowka P, Heinemann M: Behandlung und Rehabilitation bei kindlichen Hörstörungen. Treatment and rehabilitation in juvenile hearing disorders. Fortschr Med, 1990, 108, 22:429-32.
3. Beitchman JH, Hood J, Inglis A: Psychiatric risk in children with speech and language disorders. J Abnorm Child Psychol, 1990, 18, 3:283-96.
4. Hill BP, Singer LT: Speech and language development after infant tracheostomy. J Speech and Hearing Disorders, 1990, 55, 1:15-20.
5. Eimas PD, Kavanagh JF: Otitis media, hearing loss, and child development: a NICHD conference summary. Publ Health Report, 1986, 101, 3:289-93.
6. Moller KT: Interdisciplinary care for persons with cleft lip and palate in the year 2001. Northwest dentistry, 2001, 80, 1:29-36, 51.
7. Dinces EA, Yang S, Balogun AO: Pediatric fluctuating sensorineural hearing loss: problems in medical management. The Laryngoscope, 2001, 111, 1:21-5.
8. Rosenfeld RM, Bhaya MH, Bower CM et al.: Impact of tympanostomy tubes on child quality of life. Arch otolaryng - Head & Neck Surg, 2000, 126, 5:585-92.
9. Morello-Castro G: Communications disorders and the interactions and relation(s) to other disorders susceptibility. Int J Ped Otorhinolaryng, 1999, 49, 1:45-9.
10. Lane H, Bahan B: Ethics of cochlear implantation in young children: a review and reply from a Deaf-World perspective. Otolaryng - Head and Neck Surg, 1998, 119, 4:297-313.
11. Rosanowski, F, Hoppe U, Pröschel U, Eysholdt U: Chronischer Tinnitus bei Kindern und Jugendlichen; Chronic tinnitus in children and adolescents. HNO, 1997, 34, 11:927-32.
12. NN: COchlear implants in adults and children. NIH consensus statement, 1995, 13, 2:1-30.
13. Dobres R, Lee L et al.: Description of laryngeal pathologies in children evaluated by otolaryngologists. J Speech and Hearing Disorders, 1990, 55, 3:526-32.

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