SPEECH DEFECTS AND REMEDIES

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Speech and its intelligibility may be affected in various neurological, psychiatric and emotional conditions resulting in communication disorders. Speech defects are classified under various nomenclatures like stammering, dyslalia, dysarthria, aphasia and aphonia. All these defects result in loss of discrimination of speech and its intelligibility to varying degrees. These defects are amenable to improvement by speech therapy to obtain better intelligibility of speech. Various causes of speech defects are highlighted and treatment modalities are discussed.

Keywords: Speech intelligibility, speech therapy.

Speech is an essential element for communication. Its intelligibility depends on the correct pronunciation of words and its quality depends on rhythm, intonation and pitch. Many organic defects may cause defective speech. Speech is said to be defective when it attracts the attention of others on its own or when it is not appropriate to the age, sex and personality. Defects are broadly classified as stammering or stuttering, dyslalia or dysarthria, aphonia and aphasia and also speech problems associated with cleft palate and lips, cerebral palsy and deafness. The method of treatment and the remedial measures require extensive interaction between the fields of medicine, neurology, psychiatry, psychology, computer science, physics and linguistics, helping in the various rehabilitation programmes.

Stammering

Stammering is an anticipatory, apprehensive struggle reaction. It is sometimes referred to as cluttering or stuttering of speech. The universal features of stuttering are repetitions and prolongation of sounds and syllables (7). About 83% of the repetitions are sounds and syllables and the rest are phase repetitions (5). It results from an internal conflict between conscious and subconscious urges, and thus is an emotional reaction which may have origins back in early childhood. The attributable causes of stammering are poor motivation at home, parental suppression, not allowing the child to assert his personality, severe punishment of the child, pampering or over protection of the child, frequent emotional disturbances, persistent imitative behaviour, lack of opportunity to the child, stunning of ability to express and social deprivation. Rarely, deformity of the oral cavity and a poor model for learning either at school or at home can also be the causes. Stammering is neither a disease nor hereditary in nature. The severity of stammering varies from blocking a sound to other mannerisms like, blinking the eyelids frequently, clenching of teeth, holding the breath for long duration, nodding of the head or any other parts of the body and tensing of neck muscles. The degree of stammering varies from individual to individual, from time to time, and also with change of environment. A child who stammers with its parents may not show the same degree of stammering while talking to known friends and neighbours. He might stammer on reading a passage while he may not exhibit it at all while singing a song or narrating a poem. Therefore, it is very necessary to take a detailed account of the environment before planning the treatment.

It is difficult to specify a particular line of treatment for all stammerers. The first step would be to make him or her aware of the problem and correct any mannerisms. A few techniques employed are breathing exercises, exercises for the lips, tongue and other oral structures, prolongations of vowels, relaxation

therapy, behaviour therapy, shadowing techniques, correction of speech associated with psychotherapy, etc. The reduction in the severity of blocks and their frequency is a sign of improvement. Most of the cases discontinue after a few therapeutic sessions due to various reasons. The therapy should start at the early stages of onset. Parents counselling is another additional approach to stammerers. Success of the treatment depends on the patient's motivation and co-operation from the parents. Table I shows that 28 cases (45%) showed good improvement among 50 cases who could regularly attend the therapy classes. The techniques used with them were one or the combination of various methods mentioned above depending on the severity of the case and the age at which therapy was begun.

Table-I
Results of Treatment in Various Speech Disorders

Speech Defect	Number of Patients		
	Attended	Discontinued	Improved (%)
Stammering			
Mild	30	0	24 (80)
Moderate	20	10	3 (30)
Severe	10	0	1 (10)
Total	60	10	28 (45)
Voice Problems			
Puberphonia	40	-	40 (100)
Aphonia	3	-	1 (33)
Hoarseness	10	-	9 (90)
Nasality	20	-	18 (90)
Pitch disorders	5	-	4 (80)
Total	78	-	72 (92)
Dyslalia			
Omissions	10	-	10 (100)
Additions	10	-	10 (100)
Substitutions	60	-	60 (100)
Distortions	29	-	20 (100)
Hemiplegics	20	-	20 (100)
Total	120	-	120 (100)
Deafness			
Severe	20	5	15 (75)
Hard of hearing	200	-	200 (100)
Total	220	5	215 (98)
Mentally Retarded	60	40	5 (25)
Cerebral Palsy	30	-	10 (30)
Cleft Lips/Palate	10	-	5 (50)

Voice Problems

Adequate loudness, clarity of tone, pitch appropriate to age and sex, constant inflection of pitch and force are normal characteristics of voice. Any departure from these norms should be considered abnormal (6). Various disorders of aphonia are puberphonia, nasality, husky or harsh voice. Puberphonia is mainly psychological in nature and can be treated within a few sessions of speech therapy. Phonatory problems are many like hoarse voice, pitch disorders, breathiness, hysterical aphonia, and hypo- and hypernasality (3).

There is wide agreement that the traditional medical treatment between functional and organic disorders of voice can be confusing to the Speech Pathologist (4) whose responsibility is to correct the deviant vocal behaviour. The therapy for voice disorders should start from finding out an optimum comfortable pitch level, regular practice, breathing exercises, variation of pitch along with prolongations and blowing exercises. The voice probem arising out of unilateral or bilateral paralysis (or paresis) of vocal cord or singer's nodule should get the attention of the ENT specialist for treatment before the speech therapy. In the case of laryngectomy patients, an oesophageal speech can be developed. The nasality is more common in females than males; slight degree of nasalised voice in women may not be much noticeable than in men. The voice changes due to hormonal deficiencies have to be attended to before the therapy. The bowing tendency of

72WHqâ▣ 'BO voice disorders. More than 80 % of cases in the present series showed good improvement on speech therapy (Table I).

Dyslalia (Misarticulations)

Improper pronunciation is dyslalia. If it involves any organ, it is termed as dysarthria. Omissions, distortions, additions and substitutions are the types of dyslalia. All children do misarticulate sounds in the commencement of their learning a language and gradually acquire to pronounce correctly. Certain consonants like S, Ch, R are learnt during late childhood. Intelligibility of speech will be affected if dyslalia persists even after the age of 7 to 8 years. The incidence of misarticulation is more in younger children. The cause might be organic or faulty learning. This may be present even with the cases of cerebral palsy, mental retardation, aphasia and cleft palate and lips. Dysarthria in hemiplegia can easily be treated to get greater intelligibility of speech. About 60% of the childhood speech problem is dyslalia. These misarticulations can easily be corrected by regular tongue exercises, by giving correct models, mirror practice and by imitation methods. The duration of therapy might vary from 10-15 sittings to about 3-4 months depending on the severity of the problem and the age at which the therapy has begun.

Deafness

Congenital deafness causes speech defect in children. The child born deaf will remain dumb till he is rehabilitated. There are very rare cases of absolute tone deafness. There will be a certain amount of residual hearing which could be made use of by selecting a suitable hearing aid and provide auditory and speech training. Various causes of congenital deafness are known to the medical profession. The child approach. We can use individual or group auditory trainers, visual glow apparatus, pitch indicators, charts and pictures, and computers to develop verbal skill and concepts. Mostly imitative method is best suited for therapy. Again the progress of the case depends on the degree of deafness, the age of onset of deafness, the earliest intervention of therapy, the intelligence of the child, the auditory and visual cues that the child gets at home, at school and immediate environment, and the placement of the child in a normal environment. The most important of all is the interest and efforts of the parents. The main linguistic barrier in these children is the exposure to multiple languages. The child should be made to wear the hearing aid throughout the waking hours.

Mental Retardation and Delayed Speech and Language

More than 80% of the mentally subnormal children have some kind of speech problem. It ranges from severe misarticulations to no speech. Some of them find it difficult even to vocalise vowels. The speech is severly delayed along with the other milestones of development. Speech may be delayed in some of the children due to sensory deprivation, poor motivation, lack of stimulability, over protection or severe punishment, poor models at home, lack of opportunities for the child to express verbally, exposure to different languages, lack of memory and inability to concentrate, hyperactivity, short attention span and the level of intelligence. The development of speech in these children is a long process and should be included in a structured environment either individually or in group. The main problem with these children is lack of concentration, sometimes associated with hyperactivity. Table I shows that only a few could attend speech therapy regularly with limited success.

Cerebral Palsy

This is characterised by involuntary movements of the various parts of the body involving the oral structures in many cases. Many possess unintelligible speech due to poor co-ordination of the speech organs associated with improper breathing patterns, poor motor kinetic ability, hyperactivity and lack of concentration. All spastics need not exhibit speech defects. The main speech problem with them is dyslalia or the difficulty to speak in sentences. Early treatment of these children is to start with oral exercises, repetitions and mirror drill along with physiotherapy and occupational therapy. There may not be much intellectual impairment in those children and so the speech therapy has to be planned systematically. About 30% of our cases showed good improvement (Table I).

Cleft Palate and Lips

This congenital abnormality involving either lips (unilateral or bilateral) or palate, or both may be corrected surgically as early as 6-8 months. Mostly, the speech is nasalised with misarticulations making it unintelligible to others. Surgery at infancy would probably help to overcome the severity of the speech problem. The therapy involves making the child to learn to blow and do oral exercises with imitations. Sometimes the velopharyngeal insufficiency might also cause nasality for which a prosthetic treatment may be tried. Many have shown good improvement by speech therapy.

Aphasia

The aphasics will have problem either with reception or expression. An adult expressive aphasic can be treated more easily than a child. Receptive aphasics take a long duration of therapy and it is still difficult to achieve greater intelligibility of speech. Right sided hemiplegics are most likely to develop speech defects, but immediate therapy will help them to speak well. If there is no involvement of the memory function, it is still easier to develop speech and language in these cases.

Conclusion

The problems associated with each disabilityare different and there is no general method of treatment. Individual, as well as group therapy sessions with structured environment will help the child to develop intelligible speech. An early start of therapy is better for the child.

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