

SPEECH THERAPY AS A HOSPITAL SERVICE

THELMA STOHR, M.A.LOG. (RAND.)

Head of Speech Therapy Department, Johannesburg General Hospital

and

DIANA M. WHITING, B.A.LOG. (RAND.), L.C.S.T.

Man's ability to communicate is taken too much for granted. It is only when this ability to communicate is seriously impaired that attention is drawn to it. Inability to communicate freely will lead, in many instances, to serious educational and vocational crises, and may cause emotional disturbances and give rise to family difficulties. The question then arises—what is to be done for the patient?

Every large General Hospital should provide adequate facilities for the diagnosis and treatment of the various problems of communication with which the medical staff are frequently confronted, whether the origin be congenital (e.g. cleft palate), developmental (e.g. retarded speech development), the result of disease (e.g. voice weakness following laryngofissure), or traumatic (e.g. aphasia).

A Speech-Therapy Department offers the following services:

1. *Diagnostic Consultations*

The diagnosis of the type of problem, whether of speech, language, voice or hearing, presented by the

patient, together with recommendations for the handling and treatment of his case.

In order to assess the patient's specific problem of communication various tests and examinations are employed. These include:

(a) Phonetic Inventory Test, designed to test the patient's ability to articulate each speech sound when used at the beginning, middle and end of words, e.g. T in Tie, wriTing, haT.

(b) Linguistic Assessment, to ascertain the patient's level of language ability in relation to his chronological age. In cases of cerebral damage, the purpose will be to assess the facets of language which have been retained and those which have been disrupted.

(c) Examination of the Speech Mechanism—a complete assessment of the structure and function of the organs of speech. This will include the mechanisms of respiration, phonation, articulation and resonance. Abnormalities of any one or a combination of these may give rise to a disorder of communication.

(d) Hearing Tests, carried out whenever a hearing loss, however slight, is suspected. Hearing loss inter-

feres with the reception of speech and thus impairs communication. It may also prove to be a causal or contributory factor in disorders of articulation and distortions of vocal patterns.

(e) Laterality Tests, carried out in order to ascertain eye, hand and foot dominance. Confused or changed dominance may be a contributory factor in some cases of retarded speech development and stuttering, reading and writing difficulties.

(f) Non-verbal Intelligence Tests, particularly important since they rule out low scoring due to speech and/or hearing impairments. Many diagnostic errors have been made in the past by accepting as valid the results of verbal intelligence tests for patients with speech and/or hearing disabilities.

(g) Assessment of Educational Quotient, particularly important in cases where brain lesion is the cause of the distorted communication. Regular assessments will indicate whether or not deterioration is taking place. These tests are applied to children who have received some education before the brain lesion occurred, and to adults whose pre-morbid level of intelligence and education was normal.

(h) Observations of Emotional and Social Maturity, and Hand-Eye Co-ordination, particularly important as a lead to diagnosis in the pre-school child.

2. Specific Tests to Aid Medical Diagnosis

The aids most frequently requested to assist medical diagnosis are measurements of Intelligence and Hearing. Further tests that are beginning to come into their own are those designed to measure fine phases of mental deterioration following brain damage.

3. Treatment of Disorders of Communication

The aim of treatment is not necessarily normal communication but, rather, the best communication of which each individual patient is capable.

4. Regular Follow-up After-Treatment

Most departments follow up their patients after discharge at regular intervals, to assess the long-term results of treatment. It is then possible to institute further short periods of therapy at the most appropriate times, should these be necessary.

Patients handicapped by disorders of communication generally reach the Speech Therapy Department by referral from the Paediatric, Ear, Nose and Throat, Neurological and Neuro-surgical, Medical and Plastic Surgery Departments.

PAEDIATRIC DEPARTMENT

1. Defects of Articulation

These are substitutions, omissions and distortions of consonant sounds which render a child's speech difficult to understand, thus impairing his chances of adequate education and social adjustment. In other words, the child's speech pattern is inferior to the norm of speech development for his chronological age. The causes are:

- (a) Poor auditory memory.
- (b) Some degree of hearing loss in the speech fre-

quency range, either permanent or transient, during the critical early stages of speech development.

(c) Malocclusion or other dental irregularities.

(d) Poor co-ordination of the speech musculature. It is possible that in some cases this is resultant from the development of abnormal sucking, chewing and swallowing reflexes in infancy and early childhood.

Treatment. Prophylactic measures can commence with advice to parents any time from about 2 years of age, whereas the child is unlikely to be accepted for individual or group treatment until 3 or 4 years old. Prognosis in most cases is favourable, and is dependent upon the cause, the severity, and the home background.

2. Delayed Speech Development

This is the delay of the onset and development of speech beyond the age at which commencement is expected, in a child who exhibits normal comprehension of language. The causes are:

(a) Psychological:

(i) Lack of motivation. If there is no desire to speak on the part of the child, speech development will be delayed; if his wants are continually anticipated there will be no need to express himself through speech.

(ii) Lack of stimulation. In cases where long periods of hospitalization occur during critical stages for speech development, linguistic delay is common. This has frequently been seen at the Transvaal Memorial Hospital for Children, where the paediatric services make wise provision for this problem by insisting on the services of a speech therapist.

(b) Shock due to trauma.

(c) Mental retardation.

Treatment. Parent counselling should be instituted as soon as possible together with stimulation of the latent speech processes through the various sensory channels. Mentally retarded children are rarely accepted for treatment in a busy department though advice may be given to the parents as to how best to stimulate speech at home.

3. Stuttering

Many controversial theories concerning the etiology of this common problem have been advanced, but no definite cause has been scientifically established to date.

Treatment. Prophylactic treatment during pre-school years gives the best prognosis. Parent counselling to eliminate the precipitating factors is usually undertaken immediately. The prevalent fallacy that children 'grow out of it' is strongly condemned. It should also be pointed out that such advice as 'take a deep breath before you speak', 'talk slowly', and 'start over again' precipitate or worsen the condition in the majority of cases. Older children and adults may require psychotherapy in conjunction with speech therapy.

4. Acquired Disorders of Communication

The treatment of tuberculous meningitis may result in complete or partial deafness. This in turn will lead to difficulty in understanding speech, and to a deterioration of speech and language ability, unless immediate steps

are taken by the speech therapist to preserve these processes.

Encephalitis often has the effect of bringing speech development to a standstill. Mental deterioration may result and behaviour disorders are common. Speech therapy may be attempted but the prognosis is often questionable.

Epilepsy. Speech delay may be associated with this condition in young children. Older children may exhibit a syndrome of sluggish articulation. It has been suggested that this may be due to the heavy sedation. Dyslexias are fairly common among these children and respond to treatment.

Diphtheria sometimes leads to paresis of the soft palate and/or laryngeal musculature. In the former the result is nasal speech and in the latter, breathiness and huskiness. These conditions generally improve with speech therapy.

EAR, NOSE AND THROAT DEPARTMENT

1. *Laryngectomy.* The laryngectomized patient can be taught to speak again by means of the acquisition of oesophageal or pharyngeal voice. Generally speaking the best results are obtained when the patient is seen by the speech therapist before the operation. Treatment should commence as soon as the wound has healed and before discharge from hospital. The patient has been deprived of the ability to phonate, but articulation remains intact. A new sound-producing mechanism must therefore be brought into operation. The patient is taught either to trap air in the pharynx and release it, causing vibrations of the pharyngeal walls and thus producing sound, or to swallow air and 'burp'. This 'burp' can be turned into a very acceptable, if slightly husky, voice.

2. *Laryngofissure, Arytenoidectomy and Recurrent Laryngeal Paresis.* Patients with these conditions will show a voice picture varying from complete aphonia to a weak breathy voice, with consequent interference with speech phrasing. In most instances these patients will also exhibit symptoms of fatigue and breathlessness following very slight physical exertion. Therapy is similar for all these conditions; the normal vocal cord is taught to compensate for the removed, fixed or paralysed cord by swinging beyond the mid-line. The development of this function assists the patient to overcome the breathlessness following exertion, in that glottal air-leak is reduced. The prognosis is generally good and treatment usually successful in 4-8 weeks.

3. *Voice Disorders Caused by Misuse of the Vocal Mechanism.* These include vocal nodules, chronic hoarseness with no organic basis, persistent puberphonia with normal development of the larynx, and so on. These disorders are frequently occupational, in that they predominate amongst those who use their voices continually in their work, such as teachers, lawyers, foremen in noisy factories and clergymen. Treatment for most cases begins with a period of complete voice rest, followed by gradual training in correct voice production for their occupational needs.

4. *Partial Deafness.* Cases of auditory deterioration with a poor medical prognosis can be assisted to under-

stand speech by the teaching of lip-reading, acoustic training, and the adequate use of hearing aids.

A modern method of teaching lip-reading is by means of films. Patients are given training in watching the speech patterns of different people, and should be tested continually for efficiency of understanding throughout the course.

One of the latest trends in aural rehabilitation is the use of acoustic training. This is especially necessary in the patient's adjustment to a hearing aid. Memory for sound must be stimulated and training in discriminating the various auditory speech patterns through the medium of amplification is very necessary. With most dissatisfied users of hearing aids the reason is that they have not been prepared to enter the world of sound again, and therefore are at a loss to adjust themselves to the different acoustic conditions. Auditory training has often proved successful in cases of nerve deafness. A distorted sound pattern due to frequency loss is heard; the patient can be trained to make sense of this through various listening exercises, and thus make more effective use of his residual hearing.

5. *Disorders of Nasal Resonance and/or Distorted Articulation.* Various conditions such as gross adenoids and chronic catarrh and allergies, occurring during the early years of speech development and persisting for any length of time, are liable to disturb the acquisition of normal speech. Mouth breathing is enforced, which results in lack of tone of the speech musculature, and may lead to tongue protrusion and the associated distortions of consonant sounds. Transient periods of impaired hearing which sometimes accompany such conditions may account for the incorrect acquisition of some speech sounds. Deficient nasal resonance is a common feature, but may be replaced by excessive nasal resonance once the condition has been alleviated, due in part to habit and in part to lack of tone of the velo-pharyngeal mechanism. In these cases medical treatment must precede speech therapy, and when it is successful the prognosis for speech is good.

NEURO-SURGICAL AND NEUROLOGICAL DEPARTMENTS

1. *Aphasia.* Most patients referred from these departments are cases of aphasia, which may be of cortical or extra-cortical origin.

In aphasia of cortical origin the prognosis depends mainly upon the patient's age and physical condition and the length of time which has elapsed since the onset. Speech therapy commencing during the period of spontaneous recovery, i.e. during the first 6 months, proves more successful than if referral is delayed. The doctor in charge of this type of case should see that therapy is instituted within a few days of the onset, or as soon as the general physical state will allow. From the Medical Department also the patients most frequently referred are cases of aphasia of vascular origin.

Most cases of aphasia of extra-cortical origin can be rapidly assisted to regain their speech, reading and writing through a simple technique which restores these abilities simultaneously.

2. *Degenerative Neurological Disturbances.* Speech and voice disturbances may result from degenerative

neurological conditions such as myasthenia gravis and parkinsonism. In cases where the condition has been arrested, speech therapy may assist the patient to communicate more adequately.

PLASTIC SURGERY DEPARTMENT

1. *Cleft Lip and Palate.* The function of the speech therapist in the treatment of these cases is threefold:

- (a) To follow up regularly all cases repaired in infancy and early childhood. The purpose of this is to determine whether speech is developing normally, and to prevent certain anomalies which prove very difficult to eradicate later.
- (b) To assess pre-operatively the speech of all patients undergoing primary or secondary repairs of the palate after the acquisition of speech. Such assessments may aid the surgeon in his decision as to the best type of operation for the particular patient.
- (c) To treat all patients whose speech is defective in order to obtain the maximum improvement possible at any one time, taking into account the existing anatomical and physiological condition.

2. *Congenital Short Palate and Submucous Cleft Palate.* These conditions generally pass undiagnosed until adenoidectomy leaves the patient with grossly nasal speech. The speech therapist is often the first to recognize them. Referral to the plastic surgeon for diagnosis

and possible treatment is essential before speech therapy can be successful.

OTHER DEPARTMENTS

The work of the Speech Therapy Department is not restricted entirely to referrals from the departments mentioned above. Patients may be referred from any other hospital department. The Orthopaedic Department may refer cases of bulbar poliomyelitis in which cranial-nerve involvement has resulted in huskiness, nasality or sluggish articulation. These aspects of the problem require special consideration in planning the general rehabilitation of such patients.

Occasionally a case of glossectomy will be referred from a surgical department. These cases are comparatively rare, but are mentioned because, in our experience, they are capable of remarkable compensatory adjustments with treatment.

It is often the responsibility of the speech therapist to refer a patient to an appropriate rehabilitation centre, when long-term general re-education is necessary in addition to speech therapy. This is true in many cases of deafness and cerebral palsy when they are of such a degree as to require special educational techniques and vocational guidance. The success of the rehabilitation of each case is dependent to a large extent on the co-ordination of all the various types of treatment required for any one patient. The speech therapist in a hospital service is a member of a large team, whose aim is to restore the individual to society as an adjusted human being, able to realize his potentialities.