

2. *Mental*: At a clinic held in 1952 the child was assessed as being *mentally retarded*.

Since treatment began in October 1953 he has *improved* greatly in writing and general school work.

He has an excellent ability to concentrate and follow instructions, and despite adequate testing, on his school work it is felt his I.Q. is average.

3. *Speech*: Marked limitation in basic functions. Articulates are poorly utilized.

Treatment :

By constant repetition of specific movements e.g. grasping, it is hoped to *train new brain pathways*. Occupational Therapy and the general school programme give the child *everyday experiences* and opportunities for normal development.

There are various methods of achieving *relaxation*, a very satisfactory method is one of a calm, friendly relaxed approach on the part of the therapist, this is transferred to the patient.

1. *Weaving*: (a) on a frame which involves *grasp*—the shuttle is made a suitable size to involve use of all the fingers in flexion.

(b) *co-ordination*—the shuttle is darned in and out of the warp threads thus involving slow controlled movements.

(c) *elbow flexion and extension*—as the shuttle is drawn out of the warp. This teaches the same arm movement required in feeding.

(d) *abduction of the fingers and extension of the wrist* in beating down the weft threads. This child has some tension and requires movement at the wrist joint.

2. *Constructional toys* such as "Teachem" toys are given for *co-ordination and grasp*.

3. *Skills*: The patient is to button up and unbutton large buttons on a frame.

4. *Feeding*: The child practises feeding in front of a mirror. Being unable to supinate the child is taught to flex his elbow with the wrist in pronation, to bring the spoon to his mouth. The mirror assists him to reach his mouth directly.

5. *Drooling* is checked by constantly reminding him to keep his mouth closed. He is given gum and sweets to check the flow of saliva. This carried out in conjunction with the speech therapist.

He is a co-operative and keen patient. Unfortunately, due to lack of time both on the part of the therapist and the child, who has a full programme of therapy and school, he is unable to participate in *group activities*, which would be particularly beneficial for—

1. *Art and finger painting*—which gives opportunity for self-expression and finger dexterity.

2. *Games*—this promotes a healthy spirit of competition and an outlet for excess energy not forgetting the normal desire of children to play.

No child is treated in isolation. Each therapist and teacher work as a closely knit team to equip these children to take their place in society, despite their handicap.

Observation :

As it can be seen from the treatment of the aforesaid case histories it is impossible to draw a well defined barrier between the function of the various medical auxiliaries—for upon the closer co-operation only, between the medical staff, physiotherapist, speech therapists, social worker, teachers and the occupational therapist, depends the success of the Rehabilitation of the patient.

Thanks :

We would like to thank the Occupational Therapy Departments at the General Hospital, Johannesburg, Baragwanath Non-European Hospital, Edenvale Hospital and the Forest Town School for Cerebral Palsy Children for their co-operation in providing the case histories.

THE HABILITATION OF THE CEREBRAL PALSIED CHILD

By

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IT cannot be denied that Cerebral Palsy and its treatment presents a growing problem all over the world today, not least in South Africa.

From about the mid-nineteenth century, when Dr. William Little gave some attention to "Spastics," Cerebral Palsy cases were all labelled Little's Disease, and those dealing with it, accepted an associated mental deficiency with a hopeless prognosis. Only in recent years has it been realised that the Cerebral Palsied had potentially greater abilities than hitherto suspected.

Much of the pioneering work in this field began in the U.S.A., under the direction of such as Crothers, Phelps, Fay, Perlstein and others. It was emphasized that a damaged brain did not necessarily indicate mental deficiency, and that the condition is manifest in several forms, of which Spasticity is only one.

Definition.

Cerebral Palsy is commonly defined as a condition characterised by paralysis, weakness, inco-ordination, or any other aberrations of motor functions, due to malfunction of the motor centres of the brain.

The types of Cerebral Palsy are described according to clinical findings rather than to aetiology, and the following classifications are generally accepted :

Spasticity.

The cases in this group may be quadriplegias, paraplegias, hemiplegias and the rarer monoplegias and triplegias.

The main features reveal postural deformities, e.g. internally rotated, abducted position of the legs; increased tendon reflexes and the presence of the hyperactive stretch reflex. Thus, when a muscle group contracts, the stretched antagonist contracts simultaneously instead of relaxing to allow a smooth normal movement, as referred to in Sherrington's "Law of Reciprocal Innervation."

Athetosis.

These cases are commonly "quadriplegias" and also hemiathetoids have been described. Athetoids exhibit involuntary unpatterned movements, disturbances in balance, co-ordination and often tone.

Ataxia.

Here defects of balance and kinaesthesia are the most prominent features. There may also be lack of tone and diminished reflexes.

Tremor and Rigid Types are two rarer forms mentioned. These types are similar but differentiated from the athetoid and spastic types respectively.

Mixed Types have also been observed.

Sub-classifications of all types have been made by some workers e.g. Phelps has noted twelve types of athetosis. Many Cerebral Palsy workers classify strictly, particularly those who practise a technique of treatment based on specific diagnostic classifications. However, it is controversial as to whether the classification should be so rigid.

Work carried out at the Forest Town School for Cerebral Palsy leaves us with the impression that a wider definition of Cerebral Palsy is more acceptable than the one we have quoted at the beginning of this article.

In addition to varying types and degrees of motor handicap, one finds all or some of the following disabilities: hearing loss, visual disorders, speech difficulties, aberrations of perception (visuo-auditory and others), differences in temperament and personal stability, convulsions. We ask therefore, whether Cerebral Palsy may not be: (1) A syndrome of several individual defects based on localised areas damaged in the brain, or (2) whether brain damage does not show effect in a general dysfunction. This may not indicate mental deficiency but creates disturbances of the "whole" child as outlined, and makes habilitation a complex problem.

The needs of the Cerebral Palsied Child include all those of a child, plus additional assistance to help him supply his own particular needs. The problem has many facets, educational, medical, psychological and social, to mention the most important. These factors are inter-related, and the Child requires attention to all. There is no other group of the handicapped for whom habilitation in the widest sense of the term, makes so much difference, and is so important. The range of improvement is a wide one. There is no relationship between the degree of handicap and the possible results of treatment.

Statistics show that at least 70% of cases are of mild or moderate involvement. Most of these have normal intelligence and should profit materially from treatment. Many show improvement out of all proportion to the habilitation given. Left without help, they could become hopeless cripples, uneducated and a continual burden to the State.

"Holism" in approach to Cerebral Palsy is essential. Multiple disabilities need a team of workers to overcome them. Each of these trained workers must not only evaluate the child and plan treatment in their sphere, but be aware of his limitations and potential abilities in all other aspects. At the same time, the accent must be on the child, and not on his defects.

In a rehabilitation team the word "I" must be replaced by the word "We." Individual ideas and techniques must be acceptable to all and there must be constant re-assessment of cases, and programmes of treatment.

What teamwork is required for Cerebral Palsy Cases?

- (1) A consultant panel of medical experts to assist in accurate diagnosis—and direction of habilitation. The Paediatrician, Orthopaedist, Neurologist, Psychologist, Ear, Nose and Throat Specialist are among the more important of these Specialists.
- (2) A team of trained experts to carry out treatment and education. The following personnel are usually necessary: Physiotherapist, Speech Therapist, Occupational Therapist, and Teacher.

The Habilitation Team should be localised in a centre functioning as a unit with an environment modified to the needs of the children. Treatment assumes the following aspects:

Physiotherapy.

The Physiotherapist concerns herself mainly with the prevention of contractures and the guidance of motor development towards independence. Co-ordination, balance, strengthening and posturally corrective movements are incorporated in the therapeutic exercises in association with the neuro-motor development. Play therapy is invaluable in the learning of motor skills particularly as this is being simultaneously integrated with the other important aspects of the child.

Occupational Therapy.

Activities in this department are mainly concerned with the skills of daily living. Cerebral Palsied Children have to be taught to do many things which, in normal children, are taken for granted. Feeding, dressing, washing, and toilet training must be successfully performed if these cases are to be socially acceptable.

Writing or typing is vital for School Work. From the functional aspect, the use of the hands and arms is more important than that of the lower limbs, and one must continually bear in mind the pre-vocational aspect of Occupational Therapy. With some children, crafts are used for this reason, and in addition, provide corrective movements and creative expression.

Speech Therapy.

In any Cerebral Palsied Children, chewing, sucking and swallowing are improperly developed. As development of speech is based upon these reflexes, one can expect to find defects which range from no speech at all, to a mild disability. Faulty articulation and poor breathing patterns make a child's speech unintelligible to many. Speech correction is an essential part of the programme devised for each child. It gives the child means of communication, and helps him fit into his social environment.

Play Therapy.

This is an important aspect to the basic approach to the child. Not only does it satisfy the need for play in the children, but builds up an awareness of the importance of achievement, develops competition, encourages the child to develop critical attitudes to his own efforts and teaches him to become a social member of his group. In play therapy there is freedom which promotes drive and self-confidence.

Education.

The multiple handicaps associated with Cerebral Palsy have direct bearings on learning processes. The therapists usually treat a child individually, but a teacher is expected to take ten or so problematical children and teach them all at once.

After evaluation by the Medical Panel, the Teacher has to plan a curriculum suited to the individual child.

The Teacher faces many problems. Visual, auditory, sensory and speech defects complicate reading and writing. Combination of these with lack of motor co-ordination means that a child must be taught slowly and carefully to read from left to right—to know the position on the page of given extracts, to apply correct pressure when writing, to distinguish the horizontal line from the vertical and to recognise differences in letter and number forms. Formal subjects of reading, writing and arithmetic must be carefully presented by the teacher. Initial learning is usually slow, and a long period of assimilation often required before progress of note can be measured.

Many Cerebral Palsied Children show typical behaviour patterns of the brain-injured child—Hyperactivity disinhibition and other signs of exaggerated response to environment and stimulus are difficulties in the class-room, and must be dealt with by counteracting methods.

It is obvious that many Cerebral Palsied Children cannot successfully fit into a normal school environment and specialised education is an essential part of the correlated programme necessary for habilitation.

Finally the parents must not be forgotten as important members of the habilitation team. They need much guidance and assistance in the handling of their children in the home, in close co-operation with the unit.

In this article, we are referring mostly to cases under the special environment of a planned unit, in particular we have in mind, the work being carried out at the Forest Town School for Spastics, Johannesburg.

However, the problem of Cerebral Palsy is a National one, and many necessitous cases cannot be admitted to this School, which is a Day School only. They are resident in isolated areas of the Union, and at best, one can only suggest suitable home treatment for the parents to carry out. Then too, most progress is noted if treatment is begun at the earliest possible age. It is obvious that small babies with Cerebral Palsy cannot attend a Day School. To provide the necessary home treatment and advise parents as to how this may best be carried out, the Forest Town School now runs a Clinic for Outpatients. Attending this Clinic, we find the following groups of children:

- (1) Cerebral Palsy cases transferred to normal schools who are still under observation.
- (2) Infant Cerebral Palsy cases. The parents of these children are advised on how to care for them in the home. They may return periodically for follow-ups on progress and further discussions.
- (3) Cases not able to attend School for reasons such as, too great a distance for transport, or not educable according to the conditions laid down by the Transvaal Education Department.

In view of the fact that most cases of Cerebral Palsy are first seen by the Family Doctor, it is worth while noting what general points are suggestive of a Cerebral Palsy condition.

I. The Case History.

The aetiology of Cerebral Palsy is often difficult to assess. Causes may be pre-natal, natal and post-natal. Thus the history of any abnormalities during the pregnancy, difficulties at birth and the immediate post-natal period, particularly where there is asphyxia with cyanosis or jaundice, and the subsequent post-natal events are important.

2. The Development History of the Child.

The usual development (especially of motor abilities) is delayed and seldom appears at normal age levels. Thus, one needs to know, for example, at which age the child held up its head, rolled, obtained reach and grasp, sat alone, used both hands in play, crawled, stood alone and walked. Early difficulties in feeding and inability to take solids successfully or to suck and swallow properly would indicate possible speech retardation and attendant defects should be noted. Inco-ordination in older children is apparent in inability to perform daily skills, e.g. buttoning coats, using spoon or fork, pouring water into a glass, climbing up and down steps, drawing and writing.

3. Abnormal Persistence of Normal Levels in Development.

The normal infantile reflexes may persist, e.g. the tonic neck reflex, the Moro reflex and the grasp reflex or the normal ataxia of a child commencing to walk.

4. Appearance of Abnormalities of the different Types and the associated handicaps as discussed above.

Conclusion.

1. Cerebral Palsy is a complex national problem. Most cases require the attention of trained staff, working as a team in a special habilitation unit.

2. There is a wide field open to research and investigation.

3. Most cases can benefit by training and education, and the expense and time involved is justified.

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Johannesburg,
July, 1954.

P. J. KLEM,
General Secretary.

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ERRATUM

It is regretted that in the article "The Development of Electrical Diagnosis and Treatment of Reaction of Degeneration" by Miss Hinz in the April 1954 issue, the figures in the text did not correspond with Diagram X.

On Page 5, column two, paragraph one, for "the quotient is ° is 25/5=5", read "40/10=4."