

PARAPLEGIA

Its Physical Rehabilitation

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Paraplegia is defined as the paralysis of the lower half of the body.

Its causes are : (1) Injury, (2) Infection, (3) New Growths—all of which are often seen in any paraplegic unit. But, while injuries of the spine are comparatively common, the other two are not nearly so. Nevertheless, in a recent series of cases two were due to Encephalitis and one followed infection with Bilharzia—the latter must be a rare phenomenon. With regard to new growths, one of this series was found to be due to an angioma of the spine, i.e. a vascular tumour composed of a network of blood vessels.

Whatever the cause however, any severe lesion of the spinal cord produces a disablement of the greatest magnitude and results in an impairment of some of the most important functions of the lower half of the body. Thus there are:

- (a) Motor disturbances.
- (b) Sensory disturbances.
- (c) Vaso-motor disturbances.
- (d) Disturbances of the Bladder.
- (e) Disturbances of the Bowel.
- (f) Sexual disturbances.

Treatment has to be directed to alleviate each of these as well as to the patient as a whole.

In former years such treatment was characterised by passive methods which produced helpless cripples whose span of life was limited to two years.

Modern methods have veered away from this approach and emphasize activity as the keynote of all treatment. So that nowadays a highly active regime is pursued in the treatment with a resultant complete change in the outlook of these patients.

The general principles underlying all treatment is activation and the mobilisation of all compensatory mechanisms in order to shift the psychomotor capabilities from the lower to the upper parts of the body. Recumbency is avoided, especially prolonged recumbency even in the earliest stages. Plaster of Paris beds and casts are therefore deprecated and are never used. And, as a result of such measures, many complications hitherto common are avoided. Thus pressure sores, stagnation of waste products in bowel and bladder, the tendency to urinary infection and the formation of stones in the kidney and bladder are minimised or obviated altogether. In addition such activation has an important psychological effect on the patient. The elimination of toxins by this means avoids organic mental disorders and assists greatly in the dissipation of the accompanying depressions, hopelessness and resentment that many of these patients suffer from.

The Method of Physical Rehabilitation

The actual method of physical rehabilitation must be implemented as follows:

- (1) Firstly a constructive programme must be built up for each patient. This is reviewed regularly and modified as need be.
- (2) Two fundamentals underlie this programme:
 - (i) Start early.
 - (ii) Continue and persist.

The aims of the programme are:

- (a) Develop fitness.
- (b) Prevent atrophy.
- (c) Prevent contractures and other complications.
- (d) Institute compensatory muscle training of the normal parts.

In implementing this programme the following are emphasized:

- (1) Correct maintenance of position of paralysed limbs: This is a function of everyone associated with the case and is necessary to prevent the development of deformities of the limbs. These may occur in flexion deformities at the hip and knee, foot drop with contracted calf muscles, adduction of hips and clawing toes. The use of splints is discouraged and constant supervision is necessary to avoid these.
- (2) Passive movements: Are instituted immediately after injury—once or twice daily. These prevent and correct contractures, promote better circulation and prevent and delete spasms and maintain mobility.
- (3) Electrotherapy: This is indicated in lower motor neurone lesions, e.g. cauda equina and cervical nerve root involvement. Daily electrical stimulation with the faradic or galvanic currents delay atrophy of denervated muscles and improve the circulation.
- (4) The alleviation of flexor spasms: Especially of the lower limbs. These develop below the level of the lesion after recovery from spinal shock.

Various factors favour their development and these include:

- (a) Distended paralysed Bladder.
- (b) Distension of the Rectum and Colon.
- (c) Infection of
 - (i) Urinary tract.
 - (ii) Pressure sores.
- (d) Anaemia.
- (e) Contracted joints and tendons.

Treatment consists of the following:

- (a) Careful attention to factors (a) to (e) mentioned above.
- (b) Physical—passive movements carried out in a continuous warm bath, under water, at a constant temperature.
- (c) Surgical—neuræctomy and muscle and tendon section, etc.
- (5) Compensatory muscle training: This consists of intensively applied graduated resisted exercises to overdevelop the normal non-paralysed parts. This compensates for the loss sustained as a result of the paralysis following the lesion, i.e. to adapt the normal parts to take over from the paralysed parts. The long muscles of the trunk, e.g. abdominal, erector spinae, latissimus dorsi, quadratus lumborum, are particularly concentrated on as being of most value when thus strengthened and trained.

This results in:

- (a) Compensation for the loss sustained.
- (b) Restores ambulation.
- (c) Helps bladder function.
- (d) Helps bowel function.
- (e) Restores sexual function.

Methods used:

- (a) Free exercises.
- (b) Use of slings.
- (c) Use of resistance, e.g. springs, weights, etc.
- (d) The use of mats on the floor.
- (e) Includes training in:
 - (i) Balance.
 - (ii) Ambulation—using calipers.
- (f) Use of apparatus—parallel bars, etc.

National Council for the care of Cripples in South Africa

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The National Council for Care of Cripples in South Africa

ANNOUNCEMENT

“Cripple Care” today embraces every aspect of rehabilitation. It starts with the discovery of crippling conditions, whether these be congenital or caused by injury or disease; it involves treatment, transport, training, accommodation and employment; it concerns Government Departments, Provincial Administrations, Local Authorities and Voluntary Organisations; it affects hospitals, homes and human beings.

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- (g) Wheel-chair drill for:
 - (i) Balance.
 - (ii) Manoeuvre.
 - (iii) Negotiating inclines and curbs.
 - (iv) Transference from and to chair, etc.
- (6) Occupational Therapy: This is most important.
 - Aims: (a) Tonic/Diversional.
 - (b) Kinetic.
 - (c) Pre-vocational.
 - (d) A.D.L.

the (d) A.D.L. teaches the patient to care for himself, e.g. dress, bath, toilet, etc. It is a legitimate and often final aim of the rehabilitation process.
- (7) Psychological re-adjustment. This is most important to achieve as severe states of depression follow such severe injuries. This is achieved by:
 - (a) Development of a strong Doctor-Patient relationship.
 - (b) Development of a strong Therapist-Patient relationship.
 - (c) The use of A.D.L.
 - (d) The use of games: in bed—darts, etc.
in ward—ball games.
in gym.—archery.
outside—wheelchair polo, etc.

Further, the use of recreation in cinema, concerts, plays, lectures, etc. are cultural activities and will help in the same way.
- (8) Create new way of life: Above all it is necessary to show the patient that though paralysed there are many things he can do for his own benefit, advancement and amusement.
 - (a) He can work and earn his own livelihood and vocational training must be arranged for him at:
 - (i) School.
 - (ii) Technical College.
 - (iii) University.
 - (iv) Industrial Workshop.
 - (b) He can engage in many sports, e.g. Archery, Swimming, Table Tennis, Billiards, Athletics (Shot Putting, Javelin Throwing), Bowls, Wheel-chair Polo, Wheel-chair Basket Ball, Square Dancing and many others.

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- TO subsidize orthopaedic clinics in remote areas throughout the country, where cases can be seen by specialists and proper treatment prescribed;
- TO equip orthopaedic units at Hospitals so that facilities for the treatment of crippling conditions may be available to all races;
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