POLIOMYELITIS

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THIS paper is written from an unusual viewpoint, viz: that of the patient, and deals with the symptoms and treatment of the acute stage of poliomyelitis where physiotherapy is all important.

The disease begins like influenza, with malaise, headache, fever and pain in the muscles, especially in the lumbar region. These symptoms may regress temporarily for two days or so, at the onset, and then become more severe, or may be progressive from the start. Pyrexia varies from 100 to 104 deg. and may last one week.

Hyperaesthesia to light touch precedes paralysis and renders the pressure of the bed clothes uncomfortable or painful. At this stage the reflexes are generally increased. Flushing, mottling, coldness of the extremities and other vasomotor disturbances may occur. Restlessness may be marked during the first week, the patient having a continual desire to alter his position. This is the more distressing as he requires help in order to move. Anorexia, vomiting and diarrhoea occur in many cases.

Flaccid paralysis or paresis comes on the second to fourth day, and may increase in extent and severity for two or three days. In health, the ability to move with ease and strength is taken for granted. In polio, the loss of power is sudden and often occurs overnight. The patient suddenly finds himself seriously incapacitated or altogether helpless. It can be appreciated that this is an acutely alarming experience. Furthermore, recovery does not begin immediately. It is delayed for one or two weeks and commences very slowly. During this period of maximum disability it is only too easy for the patient to feel very depressed. Paralysis or paresis may affect the members of a group of muscles in varying degrees, or may involve a single muscle or a whole limb. Paralysis is commonest in the lower limbs, occurring in 80 to 90 per cent of cases; the arms being involved in 30—50 per cent of patients (Wiles[1]). Involvement of the intercostal muscles and diaphragm may lead to respiratory failure. Because the nuclei of the phrenic nerves and the nerves to the shoulder girdle lie close together in the spinal cord, diaphragmatic paralysis and deltoid weakness are often associated (Heymann[2]). Stiffness of the neck and back are common symptoms. Meningeal symptoms and involvement of the cranial nerves may occur. Constipation often occurs and defaecation is both difficult and tiring for a patient with weak abdominal muscles. Retention of urine may occur and last for some days.

Muscle tenderness occurs after the paralysis has started. This is a deep tenderness and may persist for many months, causing pain whenever the affected links are lifted unless held at the joints only. Muscle spasm is common in the early stages, and varies from a state of continual spasm in a muscle group to transitory spasm initiated by movement. Muscle atrophy begins during the third week.

The pressure of the cerebro-spinal fluid is slightly raised. The cell-count varies between 50—250 cells per cubic millimetre. Polymorphonuclear leucocytes predominate in the early stages, being replaced by lymphocytes later. The chloride and sugar content are normal, but protein is increased.

Depending on the incidence, severity and duration of the symptoms, the disease may be divided into types, such as: meningeal, bulbar, spinal and abortive types.

TREATMENT.

The first essential is to reassure the patient and give him as encouraging an outlook as possible. This should be continued throughout the illness so as to maintain the patient's co-operation and active interest in his exercises and treatment. The strength of all the muscles should be tested on admission and recorded at monthly intervals. The patient should be nursed on a fracture board and a cradle provided to support the bed-clothes. For the first week the patient is allowed to lie in any position he finds comfortable. After that the limbs should be kept in a neutral position by means of pillows or small sandbags. Plaster splints are useful. The patient is kept on his back. Knees and hips should be slightly flexed. The feet should be at right angles to the legs and neither inverted or everted. The arms are abducted about 70 deg.; the wrists slightly dorsiflexed and the elbows at right angles. Hot packs and dry heat in the form of electric cradles relieve pain and keep the muscles in good condition. Respiratory failure is treated by the physician. Raising the head of the bed helps in mild cases. Luminal is given for restlessness, Etamon for muscle spasm and liquid paraffin and enemas for constipation.

After the temperature has settled, massage and exercises are begun. All affected muscles are first

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massaged and are then exercised. Massage should be by light effleurage and petrissage and should be done gently so as not to enter the zone of deep tenderness and cause spasm.

Exercises are graded according to the strength of the muscles and may require slings and weights to assist in overcoming gravity. Care should be taken not to cause excessive fatigue. Trick movements must be guarded against. These are performed unwittingly by the patient who tends to concentrate on a gross result e.g. moving a limb, instead of contracting certain muscles and will result in strengthening strong muscles at the expense of weak muscles if allowed to persist. Doing the movements with the sound limb first, helps to eliminate trick movements. In the de Lorme method, the muscles are contracted first against half the maximum weight, then three-quarters the maximum weight and finally against the full weight. This is valuable as it allows the muscles to "warm up" and so contract against a greater maximum than would otherwise be possible. It also necessitates accurate records of muscle strength. It is most encouraging to refer back to these records.

Treatment in the Hubbard tank should begin early. It is very encouraging for the patient to see the extent to which he can move in water, hence exercise in the tank has an excellent effect on morale. It results in a feeling of well-being and increases both appetite and sleep. The temperature of the water should be 95—100 deg. F. and must be measured with a bath thermometer.

Electrical stimulation may be required for very weak muscles. Occupational therapy is a useful adjunct to physiotherapy. Special care must be given to the back muscles and sitting erect must not be allowed till these are strong. The crutch chair is a useful device to facilitate walking. The day when the patient first walks is a great triumph to both patient and physiotherapist.

In conclusion, I wish to record my very best thanks to the dictors and physiotherapists who helped me through the acute stage of polio.

REFERENCES:

1. Wiles, P. (1949) Essentials of Orthopaedica. London. J. v. A. Churchill Limited.
2. Heymann, S. (1950) S. Af. Med. J. 24, 20.
3. Mercer, W. (1947) Orthopaedic Surgery, Edward Arnold & Co.

PERSONAL

DURBAN.

Miss W. Blackie, Joint Secretary of the Natal Branch, sailed on the Stirling Castle for England on Friday, 1st December. She is going to manage the Ladies' Inter-Varsity Hockey Team.

Mrs. P. Sanderson (neè Body) gave birth to a daughter on 26th October.

NORTHERN CAPE BRANCH.

Miss Doreen Tredrea, a foundation member of the Society, has recently returned from a visit to England and the Continent. We are pleased to hear that Miss Tredrea's health has benefitted as a result of the trip.

SOUTHERN TRANSVAAL.

Miss Margaret Greenlees Barbour, of Johannesburg General Hospital, is engaged to Dr. David Allison Dodds, B.D.S. The engagement was announced at the Graduation Ceremony on 6th December, when they both received their degrees.

Miss Ada van Niekerk, of Johannesburg General Hospital, is engaged to Dr. Willem Kelfkens. The wedding will take place in April in Somerset East.

Congratulations to Miss Lois Dyer, of Coronation Hospital, who is leading one of the first Women's Inter-Provincial Cricket XI.

Miss Baines, of the Witwatersrand University staff, sailed for England in December, to take up her former post on the staff at Guy's Hospital.

We offer our sympathy to Miss S. Oosthuizen on the occasion of the death of her brother, Mr. Albert S. Oosthuizen, on December 16th.

BRANCH NEWS

NATAL.

Recently when the posts of Physiotherapist were re-designated into the Lower Professional group of the Public Service, the Commission decided to reduce the leave from 39 days to 31 days per annum. The Commission, however, reconsidered this when it was pointed out by the Secretary of the King Edward Hospital that Physiotherapists come into direct contact with sick people.

A small Jumble sale was held at the King Edward Hospital on Saturday, 2nd December, by the Branch. The fine sum of £31 5s. was the result of a small effort.

NORTHERN CAPE.

While the General Secretary for the S.A.S.P., Miss S. Oosthuizen, was visiting Kimberley for the Conference of the National Council for the Care of Cripples, a meeting of Physiotherapists resident in this city was held, at which it was decided to form the Northern Cape Branch of the S.A.S.P.

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