

TRACING THE SOURCES AND LIMITING THE SPREAD OF INFANTILE PARALYSIS

THIRD PAPER

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We don't fear death, but only to die suffering. We are not terrorized lest our children contract poliomyelitis, since some cases are as harmless as the mildest chickenpox, but lest they contract the disease in a fatal or crippling form. Let us see if there are any mitigating circumstances which will lessen our horror of the after-effects of this dread disease.

It is of some consolation to know that improved methods in the after-treatment of infantile paralysis are saving a goodly number of cases from becoming paralyzed and from the necessity of actual surgery. During the recent epidemic there were 18,000 cases of infantile paralysis in New York State and four adjoining states. Of this number about two-thirds of the recovered cases were paralyzed to the extent of being incapacitated when the quarantine was lifted. It is hoped that with the present facilities for treatment, a large percentage of these cases will be greatly improved.

Formerly massage and electricity were the two means depended upon to assist in keeping up muscle tone until there was restoration of lost nerve function. Now electricity is no longer considered efficacious by the highest medical authorities, and massage, applied after pain and tenderness have disappeared, is given only under the direction of specialists, while reeducation of the muscles, or muscle training, is considered of great importance. The saving resource, however, has been found to lie in the support of every paralyzed muscle as soon as the paralysis occurs, so that they will not sag and when the nerves resume their function there will be no deformity to remedy. This reduces the number of cases requiring surgery in the sense of a cutting operation to a minimum. Such operations consist in a readjustment of muscle balance by transplanting, lengthening or shortening muscles and tendons.

In a New York Hospital there reclines or, rather, half sits in bed supported by his arms, a youth of seventeen, clear-eyed, smiling, with a courage born of a complete reconciliation to the unkindest of fates. This lad was stricken with infantile paralysis at nine months of age

and he has not walked nor sat upright since then. His back is twisted and crooked, his left hip slips in and out of its socket like a billiard ball in a pocket, and his left leg and foot have not grown beyond half the normal size, while his toes are cramped into knots. Five operations are to be performed on this boy and then, such are the marvels of modern surgery, he will walk, with his lower left limb in a brace. Aside from the years of inaction and suffering entailed by neglect of this case in infancy, there is also the economic loss to society to be considered by reason of the expense of the operation and maintenance during recuperation. Had there been support of the affected muscles and, later, massage and muscle training, this patient would have been restored as a child to the same degree of normality as he will reach after operation.

Many lateral curvatures of the spine are now being attributed to unrecognized cases of paralysis which occurred in infancy.

When post-polio cases are brought to the hospital for treatment, the roomy clinic at the New York Orthopaedic Hospital presents a scene of interesting activity. The building is in the form of an amphitheatre with the desk in the center and the white-curtained dispensary rooms in a circle, off of which are many ante-rooms provided with examination tables. Here from 1.30 until 6 o'clock on every afternoon in the week, during which time many disappointed mothers with children must be turned away for lack of space to accommodate them, case after case is examined with leisurely attention by the head surgeon who is a humanitarian as well as a surgeon.

He says "mother" this and "mother" that in the kindest manner unless some woman says she cannot give the time to bringing her child regularly to the clinic or that she hasn't time to remove the braces every three hours and give massage for ten or fifteen minutes, whereupon she has her duty to the young life for which she is responsible pointed out to her by an emphatic finger.

All degrees of paralysis are brought to the clinic for treatment (all parts of the body are subject to attack, but arms and legs are most frequently affected), from patients unable to walk or stand to others where only the practised eyes of the orthopaedist or the constant observation of a parent can discover any defect. Perhaps only a calf muscle may be paralyzed and the patient may be able to move in every way except to rise on his toes, or one foot may drag in walking almost imperceptibly, but most cases are more serious.

One tiny mite of a creature had a paralyzed back, arms, legs and abdominal muscles. She cried so pitifully on being examined that she appeared to be in pain, but when offered a yellow dahlia she smiled

through her tears as though a miniature sun had been created especially for her. She wasn't suffering physically, pain does not persist after the acute stage of poliomyelitis is past unless there is some complication, but she was frightened at having the doctor touch her, since she had been examined by one when she was in pain. Many children cry from a similar cause and when a mother says, "Now don't cry, the doctor won't hurt you," it makes matters worse because even the suggestion is upsetting. Temperaments and dispositions reveal themselves early and in no place more clearly than at the clinic. Fortunately the mind, disposition and general health of children are not permanently influenced by infantile paralysis. Many who recover are in perfect physical condition aside from a withered limb or other deformity. In the hospital wards such children lead practically normal lives. A teacher is engaged for them and they attend school daily. In this way they are being advanced so as to lose nothing in the way of schooling. They move about and play as much as their particular handicap will allow. A well equipped gymnasium furnishes means for exercises especially adapted to improve any particular defect. On each floor of the hospital there is a solarium and exercise porch and on top of the building the patients enjoy an Italian roof garden partly covered so as to be of use during summer rains. The New York Orthopaedic Hospital is a model in every respect for its purpose. The wards are 10 unit, admitting light and air from three sides.

The after-treatment of infantile paralysis at this hospital is given by specialists, massage by massagists and muscle reeducation by pupils from the physical training school at Columbia who obtain their clinical experience under the direction of a graduate of a physical training school.

Reeducation of muscles consists in their exercise by an operator while the patient is taught to concentrate on a particular movement required until he gradually becomes able to perform it himself. Excellent results are obtained in many cases, but in others none at all. This is due to the fact that the paralysis is caused by different conditions in different cases, and just which condition exists is not known except by results. That is why complete recovery cannot be prognosticated in any given case.

In one condition, the function of the nerve cell is interfered with by pressure of the edema in and around the cord. As the acute stage subsides and the edema is absorbed, function is resumed, so that within a few weeks certain muscles may be as good as ever.

A second condition exists when a large number of nerve cells have their vitality much lowered by small punctated hemorrhages in the

cord which press upon them. The hemorrhage is finally absorbed and more or less normal cell function is restored by nature. Power may be recovered gradually and improvement may continue for two or three years.

A third condition is due to complete destruction of a nerve cell in the anterior horn because of the cutting off of its blood supply by the pressure on the vessels of the surrounding collar of leucocytes. That cell is dead and no power ever comes back to it.

Good results are obtained in treating the first two conditions described but rest is also a very important consideration not only in the acute stage of the disease but during after-treatment. That is why this must be administered so carefully.

It is comforting to learn that so much can be done for the victims of poliomyelitis, but the fact still remains that an alarming number of children have been blighted like frost-bitten flowers and that others may be. Who is to save them in the future?

The nursing in these cases is important, the treatment is also important, and the watchful care of parents is essential, but it is the physicians and surgeons alone who can help supremely, the men who at a sacrifice of self are devoting themselves to a study of the disease, to its cause, nature, and remedy, those who diagnose it and treat it and who perform its intricate operations.

While investigations so far seem rather barren of results, at least Dr. Rosenau has discovered the germ and we may expect more enlightenment as a result. So let us honor these men as the future saviors of many youthful lives.

NOTE.—The writer is indebted to Benjamin P. Farrell, M.D., of the New York Orthopaedic Hospital for facts contained in this article.

A MESSAGE OF HOPE

Cancer is a curable disease and probably 60 per cent of the 80,000 yearly deaths are unnecessary and preventable. It is a popular misconception to say that we know nothing about the cause of cancer. Much is now known about the conditions, such as habits of life, predisposing factors and the various forms of chronic irritation, under which the disease arises. If this knowledge were more widely disseminated and utilized the mortality from cancer would undoubtedly be reduced.—*American Society for the Control of Cancer.*