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THE TREATMENT OF PARALYSIS OF MOTION.

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DURING the past two years and a half, my associate and myself have had twenty-three cases of paralysis of motion, none of them immediately after the first attack, but all of them after the ordinary treatment in such cases had been employed, to the satisfaction of physician and friends that the extent of its usefulness had been long past. They were thus all of a chronic character, being from six months to twenty-three years' standing—averaging, probably, two or three years. Four of these cases were broken-down "fast men," who, with one exception, were not benefited by the treatment pursued. Of the others, embracing *nineteen cases* of long-standing paralysis, most of which had long since ceased to show any signs of improvement, while in others there was an evident decline, *all* were very much improved; some were enabled to walk, who before were helpless; some (children) were perfectly restored—the strength of a paralyzed limb, for instance, being only less than the other as its size is less—and in every case the results of the treatment have been much greater than we could anticipate when the present mode of treatment in these cases was adopted.

While in Europe, during the summer of 1856, my attention was called to a system of exercises for those cases given over by the ordinary practitioner, which seemed so rational, and based upon such well-known physiological laws, that I spent some time in becoming acquainted with all its details, and have since put it into practice with the above results.

The theory is this:—paralysis of motion is a disease of the nervous centres, the muscles being only secondarily affected from want of use, by having their normal stimulus and contraction cut off. The disease of the nervous centres, causing this inability of the nerve to conduct the impulse of the will to the muscle, is clearly divisible into two parts, namely, the *organic*, and the *functional*—

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organic, to the extent of the actual obstruction by reason of the existing disease, whether softening, effusion and pressure, or an apoplectic clot; and functional, to the extent of the original shock producing a suspension of function, and the continued inability to take up its manifestation at any given point after such suspension, although the original organic cause may have ceased to exist. The converse we also find to be true; that is, a disease of the brain may exist, but if not of a nature to produce a shock, or sudden interruption of function, the function will continue up to the full extent of the capacity of the nervous system. The latter, of course, is incapable of being ameliorated, for at the first step we are met by the organic lesion, which we here suppose to be incurable. But where amelioration of the organic lesion does take place, it does not follow that there is a corresponding amelioration of the paralysis; and it is necessary to have a resource for keeping the function up to its full capacity. Now it seems rational to suppose that so much of a paralysis *as is functional* (and in many cases it constitutes all there is remaining after the absorption of an effusion or clot, &c.), can be cured under favorable conditions.

The principle in the treatment of paralysis consists in ascertaining the conditions best adapted to call out any latent power. In accordance with the pathology, the primary conditions of the treatment should have reference to the *nervous* system, rather than to the muscular, which is only secondarily affected. A mere contraction of a muscle, as such, whether produced by strychnia, electricity, reflex action, or otherwise, possesses no ability to relieve the interruption of function in the organ which is the seat of the disease. A contraction, to be remedial, must be produced by a *coördinated volition*, which would be a functional manifestation capable of *development*.

Ordinary exercise, for these cases, has connected with it several unfavorable conditions. In the first place, the *morale* is unfavorable. The patient cannot *will* with adequate intensity and desire. No one can seriously and efficiently *try* to do what he knows he cannot do. A paralytic can no more really endeavor to raise a limb, or contract a muscle, which a thousand unsuccessful efforts have convinced him he cannot do, than he can seriously essay to fly. He can scarcely *try to try*.

And secondly, if he *does* make an effort, other muscles are so much more sensitive to the stimulus, and act so much more easily, that the impulse of the will is diverted to other parts, and another movement than the one intended is the result. And so the pernicious habit of the system is kept up. Thus it is, that these cases re-act to a certain extent, and then stop far short of their actual ability to recover.

The following rules may be laid down as guides in the treatment of these cases:

1. Secure, in the first place, a right *direction* of volition, by placing the patient in such a position that no other muscles can act than the ones toward which the impulse is sent.

2. Or (where there is some power remaining), cause a *greater* contraction in the affected muscles, *by the necessities of the position*, than can exist at the same time in any other part—the contractions converging toward, and accumulating in the feeble muscles.

3. Make every movement *very slowly*, so as to secure the maximum effect in the muscle (contraction of fibre), with the minimum expenditure of nervous force.

4. Cause every movement to be perfectly definite; a *mere* movement does no good, but a *definite* one is coördinated by the nervous system (cerebellum) and has an initial effect there.

5. Secure an effective *volition* by having each movement, no matter how simple, made only under a definite command.

6. Do not exhaust the feeble resources of the nervous system by over-doing. This is exceedingly important. One or two well-sustained, definite impulses of the will are worth more than any number of the contrary ones.

7. Always assist the patient in every movement, and never allow him to attempt one that he does not execute apparently with his own force, even if extraneous aid is given, which aid is always necessary in the beginning. Assist or resist, according to the ability of the patient and the effect desired; but always *direct* by actual contact.

If the above rules are strictly adhered to, the result will be truly gratifying. Two cases will illustrate the proceedings.

In October, 1858, I was called, by the advice of the attending physician, to see a lady 74 years old, who, ten months before, had experienced an apoplectic attack, followed by complete hemiplegia of the right side. Reaction to a certain extent followed, so that when I saw her she could walk alone, and get up and down stairs with help, but she had never been able to move, in the least, the right arm. She walked, as such persons usually do, dragging the right leg.

This had been her condition for some months. Two months' treatment on the foregoing principles enabled her to get considerable control of the right arm and hand (the fingers were previously strongly contracted into the palm), and she could get up and down stairs alone, lifting the right foot and putting it forward as others do. In all other respects the improvement was as marked. Here was a member (the right arm), previously entirely useless, to a certain extent restored to use.

On the first of last December, a lad of ten years was brought to me with paralysis of the left side. Five years before, he was kicked by a horse in the right fronto-parietal region, and a portion of the skull, 3 inches long by 2½ broad, was depressed and forced

under the adjoining parts. The brain was lacerated, and the fragments of skull removed with great difficulty. He was comatose for twenty-four hours, when consciousness returning, he was found to be paralyzed on the left side. After a tedious convalescence of a year, during which unhealthy granulations had to be ligatured, an abscess formed, &c., the wound healed and he was able to walk, but he never regained the use of his hand. The fingers were flexed, and he had not the least control over them; the arm he could move about feebly; and the leg would support about one fourth or one fifth of the weight of the body. His position was inclining toward the left side, and that side was deficient in development. His mind was not affected. This was his condition when he commenced treatment. After three months of the systematic exercises, he could use his hand to climb a ladder, carry things, and even began to feed himself; he could stand on the foot of that side, sustaining the *whole* weight of the body for fifteen minutes (as long as most people could). His form is erect, he walks with only a slight hitch in his gait, and is otherwise remarkably changed. He has since had a severe attack of pneumonia, and was obliged to suspend treatment and return to his house in the country; but I saw him yesterday, and find that he has lost none of the control gained over the paralyzed muscles. He continues the treatment. This case is interesting because we know definitely what the lesion is, and also that during so great improvement there could have been no corresponding change in the brain, which had cicatrized four years before. I ought to have said, that for a year or two past he had sensibly failed as to the use of the paralyzed muscles.

For a more extended description of the treatment and reports of cases, see *American Medical Monthly* for November, 1858.

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VESICO-VAGINAL FISTULA.—(SECOND ARTICLE.)

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BY GEORGE HAYWARD, JR., M.D.

THE second publication of Dr. Hayward contained fewer original ideas than the first; but, in requital for this, we find information of great utility, and such as surgeons are usually too sparing of. I will now give his statement of several unsuccessful cases, which induced the author to endeavor to seek out the causes of failure, and to modify his first operation in those points in which it appeared to him to be defective.

We cannot too much insist upon the necessity of publishing, with full details, an account of the hindrances experienced in performing operations; it is the only way to pass judgment upon what has been done, and warn others against new mistakes, and to pre-