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CLINICAL NOTES AND COMMENTARIES.

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TREATMENT OF HEMIPLEGIA BY GALVANISM.

Thomas P——n, aged forty-six, glass-blower, for a long time, however, an inmate of St. Nicholas' Workhouse, Newcastle, came under my care on the 21st of June, 1838, for the relief of hemiplegia of three years' standing, having been recently submitted, but without benefit, to the most judicious treatment ordinarily pursued in such cases, by Sir J. Fife, who considered him a very favorable subject for the trial of galvanism.

June 21. The patient is a man of middle stature, and rather robust frame; his appetite is good; his digestion more natural than is usual in the disease; bowels frequently require purgatives; intellectual faculties undisturbed and active; complete loss of sensation on the left side of the body; almost complete loss of motion on the same side; cannot tie his shoe or neckcloth; cannot use a fork, or in any way employ his left hand; he walks, or rather crawls along, leaning on two strong sticks, and sweeping his left leg forward in a semicircle; it appears that the only muscles that have in some measure resumed their power are those which, attached to the trunk, perform this semicircular movement; the muscles of the arm that correspond to these have also for some time recovered a certain degree of voluntary power, but the palsy of the left upper extremity is otherwise as complete as that of the lower; mouth drawn to right ear; a feeling of constriction on left side of the head; some dimness of vision.

The palsy came on three years ago, being preceded by nausea, vomiting, dizziness, and temporary suspension of consciousness. Three months after the seizure a slight improvement was noticed, but since that period the palsy has not diminished.

Bowels to be maintained open. A seton to be inserted in the nape of the neck, and galvanism to be daily administered for more than half an hour.

Aug. 4. The seton was inserted on the 21st of June; the galvanism has been daily administered, and the bowels have been kept open; he says the dimness of vision is much diminished, but in other respects he has not improved.

9. Galvanism has been daily employed; on the 6th, during its administration, he joyfully exclaimed that he felt an intense tickling in his hand, caused by a fly walking upon it; since then he has improved with unexpected rapidity; he has already recovered the sense of touch almost perfectly; the power of voluntary motion is gradually returning, but not by any means so rapidly as the power of feeling; the same number of plates, which a few days ago produced strong sub-

sults from muscular contraction, now only cause a tingling in the skin and along the course of the nerves, without muscular action. The galvanism has hitherto been directed through the upper extremity only.

Galvanism to be directed through the lower extremity.

Sept. 2. The galvanism has been daily sent through lower extremities, to which sensation and voluntary motion have returned; the return of sensation noticed first; he has been practising all kinds of movements with the view of strengthening his muscles. He can now tie his neckcloth and shoes, and walk firmly and quickly, but with a halt, like a man with shortening of the limb from fracture.

This poor man having received (through the benevolent exertions of Mr. Walker, then curate of St. Andrew's) a small sum of money, contributed by a few charitable individuals, was enabled to leave the poorhouse, and for some time carried on the business of a hawker, selling various articles to the seamen of the Tyne, daily walking several miles and frequently crossing into vessels by planks laid from the quay or shore.

I had forbidden his returning to his former occupation, which I thought would bring on a fresh attack.

I heard of him a year ago, when he was nearly in the same state, which was no more than I expected, as he occasionally drinks freely; the muscular power is much diminished in very cold weather and during the operation of a drastic purgative; but this occurs in all cases in which recovery is not complete, and indeed in some of the cases in which sensation and voluntary motion have been quite restored.

REMARKS.

Galvanism has seldom been employed in the treatment of disease except in large cities, where its administration has been too generally entrusted to persons possessed of little medical knowledge, who strictly observe a quackish secrecy; hence, although it is frequently prescribed by some eminent physicians and surgeons, the profession are but imperfectly acquainted with the practical details to which attention must be sedulously given, in order that this powerful agent may be at once a safe and efficient remedy.

The first point to which a perusal of the preceding case directs attention, is the determination of the order in which galvanism should be administered in reference to the usual remedies. Patients having chanced to hear of its wonderful effect in certain cases, earnestly urge upon the medical practitioner its immediate employment. Now, according to my experience, galvanism, if it be cautiously and judiciously applied, is a safe remedy, not only in cases of paralysis from cold, lead, or hysteria, but also in that which follows apoplectic seizures. But it is not an ordinary remedial agent; it has been often and rashly wielded by empirics, and its effects are not as yet fully known, even to the most accomplished physi-

cians; I, therefore, consider it proper to try previously the more ordinary means, namely, in the first instance setons or issues, a mild mercurial course, hot douches shot from a considerable height, *not* upon the head, spine, or trunk, but upon the extremities alone, stinging with nettles, &c. &c.; and, secondly, if these means fail to give relief, strychnine.

In my opinion galvanism, properly applied, is quite as safe a remedy as strychnine; indeed, if there be any difference, it is rather in favor of galvanism, the dose of which can be more easily graduated, whilst its influence can be immediately and completely withdrawn, should vascular and nervous excitement render this course desirable.

Before galvanism, is applied it should be ascertained that the pulse is quiet, the skin cool, and the bowels open, naturally or by medicine.

The maximum dose, whether the current be continued or interrupted, should be that generated by thirty-five pair of plates, four inches square, and arranged in a Cruikshank's trough at half an inch distance; or, if other apparatus be used, the equivalent of the battery I have described.

I have contrived a very convenient mode of applying the wires to the body of the patient, so that, whatever part they may be in connexion with, there may not be even for a moment any exposure of the patient's person; this is a matter of some importance, especially in private practice, when it is required in the treatment of amenorrhœa to connect the wires respectively to that part of the spine corresponding to the situation of the renal plexus, and with the pubes or thighs; thus an objection is removed to the use of galvanism, which speedily relieves a disease which, treated by other remedies, is vexatiously tedious.

From the centre of an oblong plate of copper, some inches long by one inch and a half wide, rises perpendicularly to the surface a thick and stiff copper wire, two and a half or three inches long; upon the extremity of this fits a short, sharp, steel needle, by means of a socket, like those of common fishing-rods—I mean those rods which join without screws; the socket is placed in the needle; this part of the apparatus closely resembles Bushe's needle for suture in vaginal laceration.

Two of these plates are required, one for the wire connected with each pole.

The copper plates should be muffled in moistened lint, and the patient should be directed to pass them beneath her dressing gown or other clothes, and press them against the points indicated by the medical attendant, securing them in these situations either by means of a broad tape, perforated in the middle by the perpendicular wire, or by strips of adhesive plaster passed transversely above and below that wire.

The armed point of the perpendicular wire is then carried through the dressing-gown and other clothes, and the steel point unshipped.

The plate, thus attached to the spine or scalp, must be connected with the wire of the battery by means of a little copper cylinder or slide (made to embrace the perpendicular wire and the wire of the battery), and a screw at right angles to its surface, like that which secures the rings of a retort stand.

No slide or screw is necessary for the other plate,

as even the patient can always, without inconvenience, by means of a glass handle or tube, keep the wire of the other pole in contact with that of the oblong plate, or interrupt and re-establish the current as frequently as it is prudent to do so.

I have always used Cruikshank's troughs, with plates four inches square; but I have just ordered an electro-magnetic battery of the power adapted to medical purposes. Here I must caution medical men against purchasing electro-magnetic apparatus of dangerously high power;—many sets having this fault are offered for sale expressly for medical galvanism in first-rate shops.

I am not familiar with the electro-magnetic form of apparatus, but knowing that the power may be increased or diminished according as the horizontal fasciculus of wires is pushed in or drawn out, I hope, in using it, to graduate the dose with nearly as much precision as with Cruikshank's battery. I need hardly add, that the electro-magnetic apparatus is much more portable, and requires very much less of the acid solution.

To the electro-magnetic battery is generally added a self-acting contrivance, by means of which the current is interrupted and shocks given with great frequency; but to this I object, as my experience has taught me that it is not prudent to administer the shocks with two much rapidity; I rarely prescribe, during a sitting of half an hour, more than fifty shocks;—at all events, a certain interval should be allowed to intervene between each shock.

In such cases as that of William P—, the galvanism should be occasionally directed through the cerebral convolutions, but never more than four or five times consecutively, and generally much less power should be applied in this situation, lest vascular and nervous excitement should be produced to a disagreeable or dangerous extent.

It is most essential that the plates should be rolled up in moistened lint; a neglect of this rule might be dangerous in asphyxia by the *delay* it would cause in producing a proper effect; and in other cases it may be injurious, by inducing the unwary operator to administer too powerful a shock or too powerful a continued current.

If the plates be not thus muffled, a powerful battery will produce comparatively a trifling effect for a while, until the skin becomes red and the capillaries turgid, when it will act with disagreeable or dangerous energy. Indeed, this increased energy, after the capillaries have become injected and the cutaneous pores distended with moisture, should be borne in mind in operating with a battery of suitable power.

Too much must not be expected from galvanism in this form of paralysis, which is, perhaps, that least likely to be benefited by galvanic treatment. I have tried it in several cases of this kind, but had no favorable results, except in that just related. Two of these cases certainly were very unfavorable, as there had been in each repeated apoplectic seizures and the paralysis had been of long standing.

Those desirous of further information on this subject will be gratified on consulting Dr. Addison's Memoir in "Guy's Hospital Reports," and Mr. Clarke's paper, published by Dr. Graves in his Clinical Medicine.

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