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CASES OF LOCAL PARALYSIS.

By S. G. WEBBER, M.D., Boston.

NOT unfrequently loss of power is noticed arising from pressure by the head resting on the hand, or by the arm thrown over the back of the chair. Generally such cases recover after a few hours, or at most a few days, without other treatment than friction, bathing or cold showering. The following cases are of a more serious character, and as they were seen within six months of each other, possibly the disease is not so very infrequent in its occurrence. One or two of them had been mistaken for other forms of paralysis; as, however, they have all been attended by the same assemblage of symptoms, though differing in degree, it may be that their narration will aid in the diagnosis of such cases in future. The marked success attending the use of electricity, and the simplicity of its application, render their treatment satisfactory and easy.

CASE 1.—Hugh T., æt. 35. Sent to me from the out-patients of the City Hospital, by Dr. Lincoln, August 31, 1870. Three weeks or more previously, while visiting friends, he indulged pretty freely in liquor, then lay on a sofa and slept for three hours. He lay in such a position that his right hand rested on the floor, flexed on the forearm, but scarcely any weight was borne on the hand; the arm, just above the elbow, was pressed between the sofa and his body. On awaking, he had a slight amount of the peculiar sensation felt when a limb "falls asleep"; there was also numbness of the radial side of the hand and wrist, and loss of power over the extensor muscles. During the three weeks there had been no change, though he had rubbed, bathed, and showered it, according to the advice of a physician.

The extensors were almost entirely paralyzed. The position of the hand and wrist recalled the drop-wrist following lead

poisoning. He never worked in lead, being a private coachman. He had drunk beer which passed through lead pipe. He had never had lead colic, and there was no line around the roots of the teeth. The motions of the elbow and shoulder were good. The flexors of the wrist and hand acted well; the fingers were constantly semi-flexed, but could be still further flexed, and there was more power of pressure in the right than in the left hand. There was considerable trembling, especially on trying to use the hand, but not so much as when he was first attacked.

Sensation was diminished on the back of the hand and fingers over the space supplied by the branches of the radial nerve. The power of recognizing two points being about equal on both ulnar and radial side of the arm and wrist, it was less over the thumb and index finger than over the little finger. Over the back of thumb and up to wrist the two points were recognized at $1\frac{1}{2}$ inches; at root of the index finger at $2\frac{1}{2}$ inches; when one point was on the lower part of the lower phalanx and the other over the metacarpal bone, two points were recognized at 2 inches. At root of middle finger two points were recognized at $1\frac{1}{4}$ inch. The same was true of the ring finger; but if the points were placed one each side of the metacarpo-phalangeal joint, the two points were recognized at $\frac{3}{4}$ inch. At root of little finger two points were recognized at $\frac{7}{8}$ inch. On the palmar aspect two points could be recognized at from $\frac{5}{8}$ to $\frac{1}{2}$ inch distance.

The sensation of pricking seemed diminished over the same space over which the sensation of touch was diminished, as compared with the other hand. On the left hand, too, the sensation caused by a prick lasted longer than on the same place of the right hand. Over the space affected the electro-cutaneous sensibility was diminished.

The back of the right hand was much more purple and the circulation more sluggish than left, pressure leaving a white spot which lasted longer. The radial side of the back of the right hand he thought

perspired more freely than the ulnar or than the other hand; it seemed to him to be colder, and was somewhat swollen.

The temperature of the right hand was half a degree lower than the left hand.

His digestion was not very good. He was troubled with sour stomach; his bowels were regular.

Electricity was employed. The index finger was moved less readily than the others, and the affected muscles responded less readily than those of the other side, though the difference was slight. Sulphate of quinine was prescribed, gr. i., t. i. d. He was directed to bathe the affected arm in hot water, and to rub it for half an hour night and morning, rubbing up.

The affected muscles were faradized directly, and the radial nerve above the elbow was faradized three times a week for two weeks, then at longer intervals two or three times more. After four or five days he could write; the next day (after the third sitting) he could cut bread; after the next he stropped his razor for the first time, and the tenth day tied his neck-tie. The power to raise his wrist was longest in returning. Sensation was gradually restored.

Sept. 30, it is recorded that he could extend his fingers almost as well as ever, could raise the wrist a little above the level, adduct thumb not to full extent, and extend each finger separately. The hand did not swell as formerly, had its natural color and natural temperature. There was some uneasy feeling, which he called pain, a kind of dragging all along down the back of the arm, especially after using his arm; a tired feeling, which disappeared after resting. As the power of moving the index finger returned, the electro-muscular contractility of its muscle increased.

Treatment was discontinued, but subsequently I saw the patient, and learned that his hand and wrist were as strong as before the attack.

About three weeks later, Dr. Lincoln brought to me another patient similarly affected.

CASE II.—Michael F., æt. 40. His history showed nothing in his previous life to give rise to his trouble. The only thing likely to have caused it was that eleven days before I saw him, about 3 o'clock, P.M., he carried a wide board under his left arm, which pressed on the axilla, but not very hard. Between 12 and 1, that night, after cleaning out the fires in a kerosene oil factory, where he worked, he lay down for about three-quarters of an hour, dozed some, but did not sleep, and did not lie on his arm in any

way. When he got up all the fingers of his right hand felt numb and were drawn up, his hand being so firmly closed that it was difficult to get the shovel into it, and then he found he had no power over the wrist. He said he sometimes had headache and a rush in his head, eyesight dim, at times a little dizziness, perhaps once in 3-4 months. There was no syphilitic history.

When seen, the hand hung down at the wrist, the fingers were flexed, and the thumb slightly drawn in. The muscles were well developed. He could lift well, but could not strike a blow with a hammer, having no control over his wrist. He could supinate and pronate his forearm, and could use his elbow and shoulder well.

The following is the result obtained by the æsthesiometer:

Place.	Two points felt as such.	
	Right.	Left.
Root thumb dorsal, $1\frac{1}{2}$ inch	$\frac{7}{8}$ inch.	$\frac{3}{8}$ inch.
" middle finger "	$\frac{7}{8}$ "	$\frac{1}{2}$ "
" little finger "	$\frac{3}{4}$ "	$\frac{1}{4}$ "
" thumb palmar, $1\frac{3}{4}$ "	$1\frac{3}{4}$ "	$1\frac{1}{4}$ "
" little finger "	$\frac{1}{4}$ "	$\frac{1}{4}$ "
About 1 in. above wrist,		
radial side,	$\frac{3}{4}$ "	$\frac{7}{8}$ "
Do. do. do. ulnar side,	$\frac{3}{4}$ "	$\frac{7}{8}$ "
Middle forearm, radial		
side,	$1\frac{1}{4}$ "	$\frac{7}{8}$ "
Do. do. ulnar side,	$\frac{7}{8}$ "	$\frac{7}{8}$ "

He said his hand had improved some before he saw Dr. Lincoln, and that the electric treatment by Dr. L. had improved it still more.

Dr. Lincoln treated him by faradization and he at length entirely recovered.

It is not easy to say exactly what was the cause of the paralysis in this case. If it was the pressure on the nerves in the axilla, it is not easy to see why the paralysis did not occur earlier and why it was delayed nine or ten hours. It is of course possible that he may have pressed on the radial nerve while dozing, and not have been conscious of it, or it may have been the effects of cold as in facial paralysis.

The man had not used a hammer to any extent, his labor requiring chiefly the use of a shovel.

CASE III.—Mike D., aged 22, was seen at City Hospital. Had good use of hand till five days previous. He then carried a basket of lemons on his right shoulder and arm, resting his hand on his hip, steadying the basket with his left hand. The weight was about 75 pounds. After carrying the basket an hour or so, his arm felt "dead," and he could not move his hand freely. He

continued to carry it in the same way, but without apparently becoming any worse. When seen there was a tender point just below the insertion of the deltoid, near the outer origin of the brachialis anticus or just above the origin of the supinator longus. He could supinate and pronate forearm, could shut fingers weakly, could not extend them fully; could flex wrist, but could not extend it beyond a straight line with forearm. The right hand was slightly more florid and colder than the left hand. The sensation to touch and pricking over the region supplied by the radial, and perhaps a little higher, was diminished; in the palm it was normal. The electro-muscular contractility of the extensors of the right thumb was considerably less than of the left. The extensors of the fingers seemed about normal. The electro-cutaneous sensibility was increased on the right. He was treated by faradization of the affected muscles, and in less than a month had recovered all the motions of the hand, though a slight amount of weakness remained, which will probably pass off.

CASE IV.—Timothy D., æt. 45, was seen January 31, 1871. Has had rheumatism at intervals for 6 or 7 years, from which he is a little stiff in left hip and knee. There is not much pain, only stiffness. His hand was first affected Dec. 24, 1870, when, on waking, it felt as if he had lain on it, the fingers being numb with pricking pains in them. This sensation of pricking was in the fingers, thumb and palm of hand, not on back of hand. On putting the hand in hot water, the pricking extended to the elbow, and he could not bear so hot water with that as with the left hand. There seemed to be little or no change in the other sensations. The whole hand was redder than the other and somewhat swollen. The motions of the wrist and fingers were entirely lost, both for flexion and extension, and the fingers remained semiflexed. There was apparently no atrophy. The electro-muscular contractility was somewhat diminished, especially in the flexors; the extensors acted better except the index finger. Electro-cutaneous sensibility was increased. The treatment was by local faradization of the muscles and nerves. After four days, a very slight motion could be seen in the thumb; after about a week, the wrist could be moved slightly. The improvement has continued to increase, and now the wrist can be easily moved; the tips of the fingers can touch the palm, the fingers can be nearly straightened, and the thumb can touch the tips of all the fingers

except the little finger. There is not yet much power in the movements.

This case is much the most severe of the four, and more nerves were implicated. The patient considered the paralysis due to his lying on his arm nearly all night, he being too tired and so sleeping too heavily to notice any discomfort; he had also taken a glass of whiskey before retiring, which may have served to increase his insensibility.

These cases are interesting from the similarity of the effects produced by different causes. Several cases of a similar nature are reported in the *Dublin Quarterly*, 1869, vol. i., where the paralysis was caused by pressure upon the arm during sleep. Billroth reports in *Wiener Med. Wochenschrift*, 1867, No. 69, one case, and refers to two others where there was paralysis from pressure on the radial by a crutch in the axilla; sensation was not affected. These recovered under the use of electricity.

The four cases now reported all had increase of redness and sluggish circulation, more or less swelling of the hand, and an apparent reduction of temperature, tested by the thermometer in only one case. These peculiarities may assist in the diagnosis. The absence of atrophy, the loss of electro-muscular contractility, the unilateral character of the affection and the history of its origin will serve as other means of diagnosis from paralyzes of different origin. In most if not all these cases the application of electricity at first gave rise to trembling in the hand.

PERTUSSIS CURABLE BY LOCAL TREATMENT.

By W. F. McNUTT, M.D., M.R.C.S.E., and L.R.C.P.E.,
&c., San Francisco, Cal.

It had not occurred to me that the local treatment of pertussis was not in more general use until I observed, in the *Boston Medical and Surgical Journal* for April 20, 1871, an article by Dr. Caldwell, of Brooklyn, N. Y., headed "A New and Successful Treatment of Pertussis." He says:—"Believing in Niemeyer's view of the pathology of this disease, 'that whooping cough is a catarrh of the respiratory mucous membrane, combined with intense hyperæsthesia of the air-passages,' I made my medication directly to the parts affected." His medications were made by the spray atomizer.

My own experience, as well as that of Dr. R. T. Maxwell, my partner, is that most cases of whooping cough can be cured by