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PROGRESSIVE LOCOMOTOR ATAXY.

Read before the Boston Society for Medical Observation
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THIS disease was known formerly as *tabes dorsalis*, and as such is well described by Romberg; but the whole of the group of symptoms belonging to it was not fully recognized until Duchenne (of Boulogne) communicated a memoir on that subject to the Society of Medicine of Paris in 1857. This memoir is reproduced in all its essential particulars in his work "L'Electrisation Localisée." Since that date, observers in other places have continued the investigations, and an extensive literature on the subject has been created.

The two cases here related illustrate two different forms of the disease; but in neither do all the symptoms occur which are sometimes met. For a fuller description reference may be made to Trousseau's *Clinique Médicale de l'Hôtel Dieu*, t. ii.; to St. George's Hospital Reports, vol. i.; an article by Dr. J. L. Clarke; or to Reynolds's *System of Medicine*, vol. ii. Dr. Radcliffe, in the last work, sums up the distinctive symptoms as follows:—

"A peculiar gait, arising from want of coördinating motor power in the lower extremities—a gait precipitate and staggering, the legs starting hither and thither in a very disorderly manner, and the heels coming down with a stamp at each step.

"No true paralysis in the lower extremities or elsewhere.

"Characteristic neuralgic pains, erratic, paroxysmal, in the feet and legs chiefly—pains of a boring, throbbing, shooting character, like those caused by a sharp electric shock.

"More or less numbness in the feet and legs chiefly, in all forms of sensibility, excepting that by which differences of temperature are recognized.

"Frequent impairment of sight or hearing, one or both.

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"Frequent transitory or permanent strabismus or ptosis, one or both.

"No very obvious paralysis of the bladder or lower bowel.

"No necessary impairment of sexual power.

"No tingling or kindred phenomena.

"No marked impairment of muscular nutrition and irritability.

"No impairment of the mental faculties.

"Occasional injection of the conjunctivæ, with contraction of the pupils."

Dr. Radcliffe takes no notice, in this summary, of the usual order of precedence in the various symptoms. This, as described by Duchenne, is shown in the first of the following cases. The first period is characterized by "paralysis of one or several of the motor nerves of the eye, complicated with paralysis of the optic nerve, and by erratic, boring pains; the second, by the appearance of defects of coördination, and, soon after or simultaneously, by muscular and cutaneous insensibility, generally in the lower limbs, or sometimes in the upper limbs; the third, by generalization of the disease."

CASE I.—Mr. — came to me last February, in accordance with the suggestion of Dr. Knight. He said he wished to know whether electricity would be of any use in restoring his lost power. He seemed to have very little faith in any kind of treatment, and his mental condition was one of great despondency. As he expressed himself, he thought he might as well die of this disease as of any other, if he was going to die at all.

He is about 59 years of age, has been married thirty years and had one child, which is dead. His business has been to construct and fit the wood-work for machinery. His father died of paralysis. He says he has had rheumatism very severely and frequently in every part of his body for the last thirty years. He is not aware of any cardiac trouble. He has many times during the last thirty years strained himself by lifting heavy weights—has at times been laid up for several days on that account; as he said, has had a "crick" in

[WHOLE No. 2109.]

his back by turns for several years. But nothing of this kind had occurred for months previous to his paralysis.

For many years he has had attacks of numbness in his right thumb, so that he could not write, especially in winter. For this he had rubbed his thumb with alcohol. If the attack was very severe, he might have only one during the winter; if less severe, he might have more.

Three or four years ago, his eyes were affected, on which account he consulted Dr. Williams, who told him he had amaurosis. The right eye was the worst, and was almost blind. The affection of the eyes came on rather suddenly. Subsequently, the amaurosis improved. He acknowledges no trouble in the head and no vertigo.

About one year ago last January, he noticed, while at work, that he had suddenly lost power over the left leg. He could not, while sitting on his stool, extend his leg. He did not fall down when he tried to walk, but could draw his leg after him. If he stumbled, however, he could not recover his balance. At the same time with the motor paralysis, there was a slight loss of sensation in the same leg. He seems subsequently to have regained considerable control over the muscles of his leg, or else the paralysis was not so complete as he stated, since, when I saw him, it was not very marked.

For several months there was a slow advance in the paralytic symptoms. The paralysis extended to his right leg, and that became worse than the left. It gradually extended up the right side to the right arm and then to the left arm.

Last December, he had paralysis of motion and somewhat of sensation in the right side of his face, and ptosis of the right eyelid. This did not last long. He wet his face in the morning in cold water, and used friction with a coarse salted towel; to this he ascribes the improvement which took place in his facial paralysis.

He thinks that since December he has been losing ground slowly, and that the disease has been gradually advancing.

Now, he has some difficulty in seeing, especially with his right eye, which reacts rather sluggishly under the influence of light. He has no abnormal sensations, as of itching, tingling, formication, &c. He has a sensation as of a cord bound round about the middle of the left arm. This sensation exists nowhere else. He complains of a sensation of cold nearly all the time, especially in the feet, up to the middle of the leg, and to a less degree in the

body, but most marked in the left great toe and along the inside of the foot to the heel, and here it is accompanied with numbness. It exists to a less degree in corresponding parts of the right foot. The numbness also extends partly up the leg.

He balances tolerably well, and with his eyes shut can walk, though with a very unsteady gait. He can stand with his feet together and eyes shut, but sways backwards and forwards more than is natural in health. He thinks he has most difficulty in moving his legs in the morning, after lying a-bed all night.

When walking, he feels as though he must go fast, so as not to fall forwards, so that his feet may keep up with his head.

Sensation is not very good in the back of his head, and he is very sleepy. He feels best when lying down.

His appetite is poor; he is constipated, but is not troubled with flatus.

The examination ceased here, owing to the lateness of the hour, and I told him I would call the next day at his house for the purpose of examining the condition of the various sensations. The next day, excuse was made that his wife was sick, and I have not heard from him since.

CASE II.—O. McG., a laborer, I saw at the City Hospital, in the service of Dr. Blake, who has kindly permitted me to make use of the case to further illustrate the subject. The hospital record states that he was a hard drinker till eight years ago, and since that time has indulged immoderately in whiskey, but has always been well and strong till last May. About one month before that time he was knocked down by a horse, which trod upon his right side. He is not aware of any injury to his head or back, though after the accident he had much pain in his side on breathing.

About May 1st, he first experienced a cold sensation in the left foot, as of a wet stocking drawn over it. In a month, the right foot was affected in a similar way. The sensation gradually extended, and in three months had reached the knees, when he was obliged to give up work.

He had no headache nor any trouble with his head for three months after the trouble in the lower extremities commenced. He then had sharp, darting pains in teeth, face and head, and since that time has felt light-headed.

At present, the sensation of coldness has invaded the whole of the lower extremities and the body below a line passing through the lower ribs. There is also marked impairment of sensibility, which is worst at

the feet and decreases upwards. Reflex action is very much diminished or lost in the feet. Sensation and motion of the upper extremities seem to be impaired. Eyesight but little affected; he sometimes sees specks floating before his eyes. April 1st, the day of entrance into the hospital, in the afternoon, he complained of a cloudiness of vision for the first time. Pupils act naturally. Taste and smell unimpaired.

He is obliged to micturate quite frequently, and sometimes when he feels the desire to do so, he has a passage of urine unwittingly. He never passes urine while asleep.

His gait, when walking, is peculiarly characteristic of this affection; much more so than in the previous case. When attempting to walk, even if supported on each side, his legs are moved about in a very disorderly manner, sometimes sideways, sometimes forwards and backwards, sometimes crossing each other, and the heel comes down with emphasis upon the floor. If his eyes are shut, he cannot stand when the feet are brought together.

He became dissatisfied and homesick, and left the hospital in two days.

Only occasionally, as at the commencement of the attack in the first case, is there real paralysis of motion; the patient is unable to walk, and is perhaps confined to the bed, but can move his limbs with power, though in a disorderly manner and perhaps by jerks, not being able to check them at just the point desired.

The affection with which locomotor ataxy is most likely to be confounded is disease of the cerebellum, especially one of slow growth, as a tumor. But in an affection of the cerebellum there is found vertigo, sometimes vomiting, headache, or perhaps throbbing sensations in the head. The defect in motion is also different. The gait is unsteady rather from lack of power over the muscles, or on account of the vertigo, than from defect of coördinating power. The vision may be affected in both diseases.

The second case is one of the more erratic cases, commencing with the second period, the symptoms of the first period appearing only intercurrently.

It is certainly a long duration for the disease to have dated back thirty years, yet that is the date at which the rheumatic pains were first felt, and according to his description they seemed to resemble the tearing and boring pains of locomotor ataxy more than those of rheumatism. Though not stated in the notes, I believe he complained of the pains having been in his lower

extremities more frequently and more severely than elsewhere. It would also be very unusual that one should have rheumatism repeatedly, and the pains be so severe that their recollection was disagreeable, and yet be aware of no cardiac complication. I ought to say, however, that I did not make any examination, intending to do so while he was in bed next day. The disease is sometimes of very long duration; thus Mr. Carré refers to cases which had lasted 20, 21, 24 and even 28 years.

In the 2d volume of Reynolds's System of Medicine, Dr. C. B. Radcliffe does not recognize the fact that the upper extremities may be involved. Yet in the first case there was partial loss of sensation in the right thumb, occurring before the loss of motion in the lower limbs. Many other cases are on record, one by Duchenne, in which the abnormal condition was perceived in the upper extremity. Also, at *post mortems*, changes have been recognized in the cervical region of the cord. In a *post mortem* by Dr. J. L. Clarke, recorded in the *Lancet*, June 10, 1865, the change was noticed as high as the second cervical nerve.

The change usually found after death, as described by various observers, is degeneration of the posterior columns of the spinal cord, chiefly in the lumbar region, occasionally extending as high as the cervical, rarely confined to the latter region. This degeneration may extend to the neighboring posterior cornua and gray matter; it may even involve the posterior roots. This last is not a constant lesion, but is usually found where there is loss of sensation. "The degeneration is essentially characterized by gradual and progressive atrophy of the nervous elements, and by a gradual and progressive development of the connective tissue which separates them."—Carré, p. 189.

Similar changes have been found in the optic nerves, and also other cranial nerves when these have been affected, but more especially the motor nerves of the eyes.

Various influences have been assigned as the cause of this disease. Comparatively a large number of patients have suffered either from strains of the back or fatigue, or have been exposed to wet and cold during a long period of time. In both the cases herewith reported, there is a history of injury; in the first case often repeated straining, and the first pains appeared at about the same period as the first strain, or thirty years ago. In the second case, there is a history of an injury to the side, and

consequent difficulty of breathing, about a month before the peculiar coldness of the feet was noticed.

Duchenne states briefly — "Some patients accuse sudden or too prolonged cooling, suppression of transpiration; thus, for example, there is a sportsman who often has remained a long time with the feet and legs in the water. Once, the phenomena of this disease have shown themselves after a too prolonged sitz bath. Trousseau mentions hereditary taint, also, as a predisposing cause. This may appear in the first case, where it is stated that the father died of paralysis.

Out of 132 cases referred to by Carré, some of which, however, were not of this disease, 66 have no cause assigned, and no antecedents are given. In 17 there was a previous history of syphilis, in 8 of rheumatism, 6 had been exposed to unusual and frequent fatigue, 23 had been subjected to cold and dampness in various ways—either dwelling in damp houses, sleeping in the open air on damp ground, working in damp places, or were subject to sudden cooling while perspiring freely, and immediately after felt the first signs of the disease. In 9, there had been emotional excitement or long-continued anxiety. In 5, disease of the nervous system had existed among the ancestors. In 5, abuse of wine or venereal excess had been noted.

[To be concluded.]

RUPTURE OF THE UTERUS AND VAGINA.

By EDWARD BARTON, M.D., of Orange, Mass.

I was called, April 7th, 7 o'clock, A.M., to Mrs. —, Irish, aged 40, mother of three children, one stillborn. She was of medium size, rather fleshy, of uniform good health, except that she had a bronchial difficulty, with hoarseness. I learned from two female attendants and the patient, that she was attacked with labor pains about 5, P.M., the day before; that the full time for labor had arrived; that labor progressed apparently favorably till 10½ o'clock, when she had a very severe pain, accompanied with a tearing sensation low down in the left side, and an audible snap, which was heard in an adjoining room; that the pains ceased from that time; that severe hæmorrhage and free vomiting ensued, and that she became cold and languid. I found her with pale and sunken countenance, cold extremities and feeble pulse, and occasionally eructating dark-colored matter from the sto-

mach, which she frequently had done during the night.

Under these circumstances, I made a vaginal examination, but finding such a confused state of things that I could not ascertain anything satisfactorily by the feel of the finger, I carried the hand within the vagina and discovered a laceration, and an entire separation of the vagina from the uterus, with two longitudinal rents in the upper third of the vagina—one anterior, the other posterior—and both a little to the left of the median line; these rents extending into the left portion of the cervix uteri, and there meeting. This triangular formed flap was turned down and pendulous within the vagina, some three inches. The uterus was high up, its cervix resting to the right of the sacro-vertebral prominence, with its fundus turned to the right, and apparently empty and firmly contracted. The fœtus was not within reach while the hand was within the pelvis, but it could be felt through the abdominal parietes, above the umbilicus.

I could not satisfy myself whether the membranes had been ruptured before the accident, but the patient was sure that there had been no sudden gush of water.

It appeared very clear that the fœtus and placenta had escaped within the abdominal cavity, and I explained the nature of the case to the patient, and informed her of what the certain result must be. Under the circumstances, it seemed a serious question whether it would be an act of mercy to attempt to do anything with a view of delivery.

She was stimulated, had warmth applied to the extremities, and an opiate administered; after the lapse of several hours, the patient not getting materially worse, I decided to make an attempt to deliver. She was etherized; the hand, moistened with warm water, was carried through the rent to the left of the uterus, its fundus grasped within the hand, and found empty and firmly contracted. The hand passed up, with its dorsum to the parietes, above the umbilicus, and rested upon the breech of the fœtus, which lay transversely, with its head and shoulders in the left iliac region; but the omentum intervened, and the hand was drawn down and passed beneath the omentum, the breech gained, and then by degrees the right foot. Failing to secure the left, the right was drawn down and secured, and then the left found and brought down also; traction was commenced, and after some difficulty the patient was delivered of a large female child, and then of