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CLINICAL LECTURE DELIVERED AT ST. PETER'S HOSPITAL, ALBANY.

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Professor of Diseases of the Chest and Nervous System in the Albany Medical College.

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GENTLEMEN,—The two students to whom this case was assigned several days ago present the following report:

G. A., aged eleven years. Her parents are dissolute and drunkards, and the child has been cared for by her aunts. At the age of two years she had scarlet fever, and since that time there has been an intermittent discharge from the left ear; otherwise she has been well. Eighteen months ago she was hit in the back by a brick, and in consequence was confined to the house during one week, but has experienced no trouble from this injury since that time. In November, 1890, she suffered from an attack of *la grippe*, which was accompanied by severe pains in the head and in the left ear, and since then she has been slightly deaf in that ear. (This deafness may date from the attack of scarlet fever.) She did not recover well from *la grippe*, and in February was obliged to go to bed, her legs being so weak that she was unable to walk. She says that during the first six weeks of her stay in bed she did not take any food, and had frequent attacks of vomiting, ejecting at times large quantities of blood. After the gastric irritability and the hæmatemesis ceased, she claims that she was blind for four weeks, and that during all this time there was a constant pain in the lumbar region extending into the thighs, which, being worse at night, prevented her sleeping. Since February, 1890, she has been unable to stand or walk. She was actually confined to the bed for thirteen weeks, since leaving it she has been able only to sit up in a chair, and at present can neither stand nor bear any weight on her feet. Every morning, just after awaking, she is troubled by a spasmodic contraction of the flexor muscles of the forearms, which is overcome by forcible extension, leaving

a numb feeling in her hands for ten or fifteen minutes afterwards. She has had some frontal headache and at times double vision. There has not been any incontinence of the urine or fæces, but micturition has been at times painful. She herself says that she has no feeling in her legs below the knees.

An examination of the thorax and abdomen yields negative results. There is no disturbance in the distribution of the cranial or brachial nerves. There is decided tenderness over the spinous processes of the dorsal and lumbar vertebræ, especially over those of the first and second lumbar. The muscles of the legs are well nourished. She can move her legs about with ease in the bed, but when she is placed on her feet her legs give way under her and she is not able to stand. There is no ataxia in the movements of the legs. The knee-jerks are absent. There is complete anæsthesia of both legs below a line running through the knee-joint.

As the result of this history and physical examination, both students agree in saying that this is a case of transverse myelitis and that the prognosis is hopeless. At first sight it might seem as though this diagnosis and prognosis were correct, and yet I think that I shall be able to prove to you shortly that they are both wrong. In the first place, I must point out two errors which these gentlemen have made in their examination. They say that the knee-jerk is entirely absent, but I think this is due merely to the fact that they examined for it while the patient was lying in bed, a position in which the knee-jerk cannot be advantageously tested. If we lift the child up and set her on the edge of this table, so that her legs hang down, and strike the ligamentum patellæ a sharp blow, we see that the foot is thrown slightly, but distinctly, forward. In case, however, we are still in doubt in regard to the presence or absence of the knee-jerk, we have only to make her clasp her hands and pull hard, and now striking the ligamentum patellæ we see that the knee-jerk is very distinct, being reinforced by the strong contraction of the muscles of her arms and by diverting her attention from her legs. Our examiners have made another serious mistake in their examination. They tell us that there is complete anæsthesia of the legs below a plane passing through the knees. Now, this, certainly, is a very curious distribution of anæsthesia. It corresponds to the distribution of no nerve, but corresponds very well to what a patient might imagine ought to be the limit of an anæsthesia. An anæsthesia which does not correspond to the distribution of any nerve or nerves, but is limited by some prominent landmark in the body, is much more probably mental or functional

than organic in its origin. Therefore this anæsthesia which these two gentlemen have found is certainly very suspicious and warrants me in making the examination before you, and in doing so I shall make use of a little trick which often succeeds with much older persons than our patient. I shall ask her to say "yes" every time she feels the touch of the head of the pin, and "no" every time that she does not. Now, when we touch her with the head of the pin we see that every time it touches her thighs she says "yes," and every time it touches her legs or feet below the knees she says "no," but she never says "no" except at the instant that she is touched with the pin, which proves conclusively that she feels the touch and that the anæsthesia is entirely in her own imagination. It may be, perhaps, that the sensation is somewhat different below from what it is above the knee, but certainly there is not anæsthesia.

If the anæsthesia be purely imaginary, the thought must occur to us whether the inability to walk is not imaginary also, especially when we find that she moves her legs with comparative ease in bed, that the knee-jerk is neither absent nor exaggerated, and that the sphincters of the bladder and rectum are not involved,—symptoms which we should expect to be present in any organic disease of the spinal cord. Furthermore, when, supporting her, we place her on her feet, you see that although she does not stand on them yet she moves her legs about and lifts them high in the air, more like an hysterical than like a paralytic patient. The hysterical nature of the case is also indicated by her history, for she gives a story of blindness lasting four weeks and then disappearing completely, which would scarcely be the case if there had been an actual and not an imaginary blindness. The vomiting lasting such a long time, and accompanied by hæmatemesis, is often an hysterical symptom also. The spasmodic contraction of the flexors of the forearm every morning is either hysterical or due to tetany,—in either case a functional disorder; and, finally, the heredity of the patient is such as would naturally predispose her to functional nervous disease. All these facts combined make it almost certain that this is a case of hysteria, and that the paralysis of motion as well as the anæsthesia is entirely imaginary. If this be so, then we have to do, not with a hopeless case of transverse myelitis, but with a simple case of hysteria.

Now that we have arrived at a diagnosis which is in harmony with all the facts of the case, we have to consider next the question of treatment. If the symptoms are imaginary or mental, theoretically the treatment of them should be a mental one; and this is in fact the case. Our great aim in the treatment of this case is to disabuse

the patient's mind of the idea that she cannot walk. When we have persuaded her that she is able to walk, her cure will be completed, for she will then find that she can walk. One great step in the treatment has already been made. We have convinced her that we have discovered the deception (perhaps not altogether a conscious one) which she tried to practise in regard to the anæsthesia. She now knows herself, and knows that we know, that there is no anæsthesia below her knees, and that she can feel the head of the pin there every time that she is touched by it. Having disabused her mind of her imaginary anæsthesia, if I were to say to her firmly and emphatically that she is able to walk and that she must walk, I might, perhaps, succeed in making her walk, but if I failed I should lose that influence over her which I have already obtained, and I am unwilling to make the experiment until I have produced a more decided impression upon her mind. This decided impression I intend to produce, or, indeed, have already produced, by the large audience before which she is. This child came to the hospital some three days ago, but has been under no treatment whatever. I wished to wait till my clinic in order that the excitement of being before you all might work with me in effecting a cure which otherwise would be more difficult to obtain. My greatest reliance, however, in producing a strong mental effect upon her is electricity, that agent which is so powerful in influencing for the better the various hysterical manifestations. I shall now vigorously apply to the child's legs the most painful application of electricity,—that is, the electric brush; and you see by her crying and struggles that she is suffering a great deal of pain from it, and she suffers equally whether the brush be above or below the knee, so that there is no question of analgesia in the latter part. Now, with her whole nervous system in excitement from the pain and her mind confused and unsettled by the remarkable experiences which she has passed through during the last quarter of an hour, I lift her from the table, place her on her feet, and tell her that she is able to walk, and that the electricity has given power to her legs, and that she must walk or that she will fall, and while saying this I gradually lessen the pressure of my hands under her arms until, as you see, she stands alone and takes a few tottering steps forward and clutches the table; and thus, after an imaginary paralysis of a year's duration, she takes her first steps. We need have no fear now of her ultimate recovery. Such cases, when the charm is once broken and they do walk, continue to walk better and further each day. And thus you see that the diagnosis "transverse myelitis" and the hopeless prognosis made by the two examining students must be replaced by the

diagnosis "hysterical paraplegia," with extremely favorable prognosis, and an almost instantaneous cure.

In this case, instead of producing physical pain by the application of the electric brush, we could probably with equally good effect have produced an impression on her imagination by hypnotism or by the application of a magnet or of metallic disks, especially disks of gold, to the extremities. By the application of the disks we could probably have got rid of the anæsthesia; and by hypnotizing her and assuring her that when she awoke she would be able to walk, we might have caused a disappearance of the paralysis also. Both of these methods, however, seem to me to be of somewhat questionable utility, and are so near the border-line of charlatanry that it is well to avoid them. They are more apt to weaken than to strengthen the mind.

Such cases as this, although not common, are yet no great rarities. Not long since I treated here a boy whose history was briefly as follows:

R. P., aged fourteen years, has always been delicate, although precocious and bright in his studies. About two years before I saw him he had an illness in which his bowels became "bloated," there was some soreness in the left iliac fossa, and he was much troubled by vomiting. He was confined to his bed three weeks, but the vomiting continued during five months. He vomited his breakfast every morning without any nausea. He would wait in the house for his breakfast to come up and then go out to play. He very rarely vomited his dinner. After this had lasted for some five months he went into the country for a month, and while there the vomiting ceased entirely and did not recur. After his return from the country he slowly failed and gradually became so weak that he could scarcely walk. His gait also showed an awkwardness caused especially by a spasm of the adductors, which made his legs cross in walking. All this time the pain in the left iliac fossa continued, although nothing could be discovered there on examination. He never had any desire to micturate, and had to be reminded of it. He never passed his water in bed. His bowels were constipated. Three months before I saw him he went to bed and remained there. During the last two of these months he had chills, coming on every second day at half-past eight o'clock in the morning exactly. These chills at first were merely one or two shivers, but they steadily grew more severe until they lasted ten or fifteen minutes. After them he felt much exhausted for several hours. There was no fever connected with them. During the chill his respiration was panting. His temperature was taken on several occasions both during and after the chill, but never

rose above 99° F. Since the commencement of his illness his hands were tightly clinched when he first awoke in the morning and remained so during ten or fifteen minutes. A couple of months previously there had been decided anæsthesia and analgesia of the skin, but when I saw him the anæsthesia had almost, if not entirely, disappeared, although decided analgesia of both legs, not associated with thermic anæsthesia, persisted. He could not walk or bear any weight on his feet, but when he was lifted to the floor he moved his legs up and down, in a manner somewhat suggestive of hysteria. The cutaneous reflexes were normal, and the patellar reflexes were very slightly exaggerated, but no ankle-clonus could be obtained. After a great variety of internal remedies had been tried without effect in his case, a strong galvanic current was applied. After the application of electricity the boy slipped out of bed when no one was in the room and found that he could walk. The next morning he did not have the usual chill, and later in the day he called for his clothes, and in somewhat of a theatrical way dressed himself and walked across the room without aid. After that time there was no return of the chill, and he walked about steadily without the slightest trace of any adduction of the legs. The sensibility of the legs was normal, and the tenderness in the left iliac fossa, which had persisted so long, had disappeared.

In this case there is no doubt that the boy suffered from hysteria. The nervous chill occurring every morning, which was not a real chill but rather a trembling of the body, with panting respiration and without any elevation of temperature, was undoubtedly of an hysterical nature, and the clinching of the hands, a symptom which was present in the first case also, was of the same character. The analgesia unassociated with loss of temperature-sense is also a very suspicious thing, as these two qualities of sensation are usually closely associated. In this case, too, the paralysis of motion was undoubtedly imaginary, and after the strong excitement of the application of electricity the patient found that he was able to walk.

It may be said that these cases were really cases of meningitis or myelitis which gradually recovered under rest in bed, and that the only hysterical element in the case was that the long confinement in bed had made them imagine that they were paralyzed; so that they were really cases of myelitis or meningitis, followed by an hysterical condition which was cured under appropriate treatment, but that the same treatment applied early in the course of the disease would not have been so effective. Against this it must be said that even in the early stages of the disease there were decided hysterical symptoms, while the organic reflexes were

not involved, and there was no symptom nor combination of symptoms present at any time in either case which was absolutely diagnostic of any spinal lesion.

The next and last case which I have to report to you, although of a purely hysterical nature, I think, simulates very closely an organic disease of the spinal cord. The boy was a patient for several years in this hospital about eight years ago, and the following history is extracted from the hospital records:

W. G., aged thirteen years. When he was about three years old he used to whirl about on his heel in imitation of his elder brother. After whirling around he would fall down unconscious in a fit, but never exhibited any convulsions. After lying quiet a short time in the fit he would commence to move and would do curious things, such as lighting matches and setting the curtains on fire, he apparently being unconscious all the time and not knowing what he was doing. He would remain in this unconscious condition for about half a day, and when his consciousness returned he would not know, or at least would pretend not to know, what he had done. He sometimes vomited during these fits, and once he fell against the stove. In some of them he bit his fists, but does not remember to have bitten his tongue, and after they were over he felt weak. These fits kept growing worse, occurring without the exciting cause of his whirling about on his heel, and sometimes at night. Finally, they came on three or four times a week, and he was out of his mind most of the time. They were most severe when he was six years old. Then they began to be less frequent, and when he was eight years old they stopped altogether and have not since returned. At the age of ten years, both parents having died of consumption, he was admitted to an orphan asylum, and during his three years' stay there he was regarded as fairly intelligent but very nervous. In March, 1882, he suffered from pain of a cutting character in the lower left side of the chest, which was supposed to be due to pleurisy. These pains lasted only three days, but after they ceased the boy did not seem inclined to get up from bed, and remained there for three weeks. When he did get up there was noticed a marked peculiarity in his gait. He walked not on the soles but on the outer edge of his feet, and crossed his legs in walking. At this time he had no pain in the back nor in any part of the body. The walking grew steadily worse, the adductors of the thighs contracting strongly and causing crossing of the legs, so that he walked in a zigzag fashion and needed a space six or eight feet in width in order to make any progress forward. His feet remained crossed even when lying in bed. After the

lapse of a considerable time he began to complain of pain in the back, for which he was given morphine in increasing doses until he was taking fifteen minims of Magendie's solution subcutaneously three times a day and was always crying for more, and had fully acquired the morphine habit when he entered St. Peter's Hospital on August 5, 1882.

A physical examination at the time of entrance into the hospital showed that the muscles of both legs and arms were well nourished but were weak. There was no paralysis of any muscle; any desired movement could be made, although it was executed slowly and was of limited extent, and he was entirely unable to walk. There was no ataxia, although all the movements of the arms were executed in a series of little jerks, due to spasms of the antagonists. The legs were constantly crossed, due to a spasm of the adductors, and the feet turned in, due to a spasm of the tibiales antici. When the thighs were separated the adductor muscles seemed to be thrown into slight spasmodic contractions, which gradually brought them together and crossed them again. A careful examination with both the faradic and the galvanic current revealed a perfectly normal electrical reaction. Cutaneous sensibility of arms, head, body, and thighs was normal, but there was complete anæsthesia and analgesia of the whole surface of the feet and legs below a plane passing through the knee-joints. The cutaneous reflexes were normal, the knee-jerks were slightly increased, but there was no ankle-clonus. The pain in the back was located especially in the lumbar region, and the spinous processes in this region were extremely tender.

The boy remained in the hospital about two years, and during his stay in it exhibited many hysterical symptoms, such as pseudo-photophobia, frequent attacks of crying, tympanites, etc. At times he was very unruly and profane, tore the bedclothes, and caused much trouble. The paralysis and the spasmodic contractions varied somewhat, being usually worse when much attention was paid to them. After a severe contest his morphine habit was broken up. The galvanic current was daily applied to his back and legs, and his back was cauterized several times. After about two years of pretty persistent treatment with electricity and all kinds of drugs the case was given up as a hopeless one, and very little attention was paid to the boy. This he did not like, and began to show signs of improvement, getting up in a chair, and on crutches, and, finally, one morning in November, 1884, after he had improved so much that he could walk about the ward, he ran away from the hospital.

In this last case the resemblance to the symptoms produced by a

spinal lesion is very great, and perhaps it cannot be absolutely denied that in the early stages of the disease there existed a mild form of spinal meningitis or meningo-myelitis. The existence, however, of hysterical symptoms throughout the course of the disease, the peculiar distribution of the anæsthesia, the spasmodic contraction of the muscles of the thighs, which was of the same nature as in the second case, although present in much greater intensity, the variations in the degree of the motor paralysis in direct ratio to the amount of attention shown to the boy, the fact that the reflexes, superficial, deep, and organic, were not involved, and the completeness and peculiar manner of the recovery, all make it most probable that this was a case of hysterical paraplegia, and I think that if it were under my treatment at the present time, when my experience in these cases is larger than it was eight years ago, I could find more decided evidence of hysteria, and could produce a more prompt cure.

From these three cases it is evident that hysterical paraplegia in children is not a great rarity. Clifford Allbutt[1] and a number of other observers have reported clearly-defined cases of this nature, and Riegel[2] has reported five cases, which bear the greatest resemblance to these three cases of mine, and which were rapidly cured. Doubtless many cases of paraplegia in children in which brilliant recoveries occurred were really cases belonging to this group, and did not depend on organic disease either of the spinal cord or of the peripheral nerves. The fact that of these cases two were boys and only one a girl, is in accord with our knowledge that hysteria attacks the male sex in children more frequently than it does in later life.

As the lesson, then, of this clinic, I would wish you to remember, when you see cases of paraplegia in children, to be on your guard not to mistake those cases which are of a functional nature for those which depend on organic disease. The principal points in the differential diagnosis are: 1st, the peculiar distribution of the anæsthesia, which does not correspond to the distribution of any nerve or nerves; 2d, the presence of spasmodic seizures or contractions; 3d, the presence of other hysterical symptoms; 4th, the non-involvement of the reflexes, superficial, deep, or organic, except in the way of a slight exaggeration; 5th, and finally, the result of treatment.

The treatment of these cases is a mental one. The mind must be influenced by a change in the entire environment of the patient (the

[1] British Medical Journal, February 25, 1882, p. 267.

[2] Zeitschrift für klinische Medicin, 1883, Bd. vi. p. 453.

best environment for such patients is that of a hospital), by a great show of firmness and of a conviction on the part of the physician that a cure will result, and by producing a strong impression on the nervous system by something, such as the electric brush, which causes physical pain, or which powerfully affects the imagination, such as hypnotism or the application of gold coins or disks to the extremities. I would strongly advise you not to employ hypnotism or to apply the gold disks, but to rely on the electric brush for the production of the strong nervous impression.