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PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*On a Case of Spinal Irritation, complicated by Cataleptic Manifestations.* By ROBERT SAMUELS ARCHER, A.B., M.B., Univ. Dubl.; Honorary Visiting Physician to the Fever Hospital, Netherfield-road, Liverpool.

SINCE the year 1828, when Dr. Brown^a drew attention to spinal irritation as a special form of disease, there have been expressed a great variety of views concerning its nature and pathology. During the period, in the history of medicine, in which pathology reigned almost supreme over the medical mind, the very existence of such an affection appeared to be, if not entirely denied, at least questioned. And this is not to be wondered at, when we have regard to the rarity of *post mortem* examinations in such cases; and when such an investigation became, by accident, possible, from the absence of any defined (coarse) pathological lesion. But are we, on this account, to deny spinal irritation its proper place amongst the numerous ills to which the human frame is subject? I think not. Are not all physicians acquainted with various functional disorders in other organs of the body? And why should we refuse to admit such in the case of the spinal cord? May not the functions of this most interesting and complex portion of the central nervous system be temporarily disturbed by a molecular change in its numerous cells and other structures, or by some slight shock affecting its blood supply, or by some other disturbing element of

^a On Irritation of the Spinal Nerves. By Thomas Brown, M.D. Glasgow Medical Journal. May, 1828.

little import, the existence of which has not yet become manifest by the methods of research at present known to physical science, but which, as she advances with sure and steady steps, we may yet hope to be demonstrated—it may be at no far distant period? Surely we are justified in expecting—or, at least, in hoping—that the researches of some microscopist, devoted to the elucidation of obscure problems in nervine pathology, may lead to the discovery of the changes, very minute and subtle indeed, which underlie this and many other so-called functional derangements of the cerebro-spinal system. The great difficulty, as I said before, in this kind of investigation is the rarity of procuring *post mortem* examinations; and experiments on the lower animals cannot help us out of the obscurity, for they are unable to explain the various subjective symptoms which accompany these affections, and which indeed generally are the only ones to inform us of anything being astray. Probably the so-called neurotic temperament may have a good deal to say in the production of this affection, as in this condition there would appear to be a certain amount of instability of the nervous elements throughout the cerebro-spinal system. This view would seem to gain strength from the greater frequency of the affection amongst females compared with males, and its constant association with an hysterical tendency. As to its proximate exciting causes, anything which irritates or weakens the nervous system may be regarded as the most common—more especially, perhaps, (a) alcoholic excesses; (b) opium-eating; (c) traumatism; (d) cold, and other excitors or depressors of nervous action.—(*Erb*.)

The development of the symptoms is generally gradual. Amongst them the most important are—(1) pain along the spine, elicited by pressure, often of the gentlest kind, and referred, in the frequency of its occurrence, to (a) the interscapular region, (b) the back of the neck, and (c) lumbar region; (2) hyperæsthesia of the skin of the affected portion; (3) neuralgic manifestations in various parts of the body, varying according to the portion of the cord affected; (4) paræsthesiæ, such as tingling, formication, cold, heat, and other subjective symptoms; (5) anæsthesia, which, according to Erb, is rather a rare symptom; (6) the patient becomes easily fatigued, and cannot walk for any distance without pain; (7) there is usually an absence of any true paralysis, which will serve to distinguish it from other and graver affections of the spinal medulla; (8) spasmodic phenomena; (9) vasomotor disturbances—as pallor, and cyanosis of the hands and feet; (10) gastric derangement, nausea,

or vomiting; (11) palpitations; (12) disturbances of respiration, spasmodic cough, and such like; (13) spasm of the bladder; (14) increased desire to urinate; (15) a large quantity of pale, clear urine is voided; (16) sleeplessness; (17) giddiness; (18) noises in the head; (19) disturbances of vision, *muscæ*, &c. The exciting cause of these symptoms is variously regarded by different authorities. Thus, Ollivier, and, to a certain extent, Stilling, consider that there is a condition of hyperæmia of the cord; whilst Hammond attributes them to anæmia, especially of the posterior columns. Hirsch, and many others, look upon it as a purely functional disorder.

Erb,^a to whose treatise on the spinal cord I am mainly indebted for the foregoing short sketch, observes that "the most probable (cause) seems to us to be a purely functional disturbance of the cord, in company with which hyperæmia and anæmia of the cord may probably appear when the vasomotor paths are reached by the disturbance; but this whole question, it seems to us, awaits a solution." Erichsen^b considers that the symptoms arise from anæmia of the cord; and, in fact, calls the affection "spinal anæmia."

Of these opinions, expressed by various authorities, on the probable pathology of "spinal irritation," I must say I am inclined to regard that of Erb with most favour, as being most likely the one approaching nearest the actual state of affairs. I certainly endorse the statement with respect to the want of proof of the intimate nature of the lesion that produces this affection—if, indeed, lesion it may be called.

CASE I.—K. B., aged nineteen years, a domestic servant, was admitted to West Derby Union Hospital in the beginning of November, 1876, whilst I was Resident Medical Officer of that institution.

The following is the account she gave of her condition before admission, and of the accident which caused it:—About seventeen days before she fell out of a window, hurting her back by the fall, and two of her ribs were reported to have been broken, but of this there was no evidence at the time she came under my care. Immediately after the accident she became powerless, and had to be carried to bed, in which, after being settled, she first felt pain in her back.

November 9th.—Pulse about 80, weak; nausea and vomiting, which supervened shortly after the accident, and with which she has been more

^a *Cyclopædia of the Practice of Medicine*. Edited by Dr. H. von Ziemssen. Vol. XIII. P. 365. English Trans. 1878.

^b *On Concussion of the Spine, Nervous Shock, &c.* London, 1875. Lecture VIII.

or less constantly troubled ever since. According to her own account, bowels had not been moved for nearly three weeks. Complained of pain under left breast and "down the spine." There was general hyperæsthesia and tenderness when pressure was used by running fingers along the spine; this became much exaggerated in the lumbar region. The gentlest touch elicited expressions of pain in this part of the vertebral column; great pain on passing urine; occasional pain in left arm; shooting pains and slight anæsthesia in lower extremities. She was ordered a stimulating enema to open the bowels, which had the desired effect, and grs. 15 of potassii bromid., m. 30 of liq. bismuthi (Schacht's), m. 2 of acid. hydrocy. dil. in ʒi . infus. calumbæ, every four hours.

11th.—Nausea and vomiting appear to be better, and the dorsal pain not quite so severe; passes her urine with less pain; bowels not moved since enema.

13th.—Sickness still continues to get better; bowels moved yesterday by an enema; still there is marked tenderness on pressing the lumbar spine; did not sleep well last night. About 9 p.m. I had to use the catheter, she not having passed any urine (according to her own account) for forty-eight hours, and drew off half a pint of high-coloured concentrated urine.

15th.—Gastric irritability and vomiting have increased since the last report; dorsal pain and tenderness somewhat easier. I had to use the catheter in the evening, as she was suffering a good deal of pain from her bladder being distended with a quantity of urine which she was unable to void.

17th.—Vomiting and dorsal pain and tenderness still persist; pains in arms and legs, slight in former; catheter has to be used twice daily. An ice-bag was ordered to be applied to the spine. The nurse reported that about 7 p.m. she had a very severe attack of what she termed "convulsive spasms" in the lower extremities, "from the hips downwards."

18th.—Pulse 64; had a fair night; dorsal pain was a good deal eased by the injection, hypodermically, of gr. $\frac{1}{8}$ of hydrochlorate of morphia, and continues easier this morning; complains of pains in epigastrium, and in the superior and inferior extremities; had a "fit" in the evening, which, according to the report of the nurse, would appear to have been somewhat of a cataleptic nature. According to the account received from the nurse, the patient lay for three hours perfectly still, her limbs remaining in whatever position they were placed. On my visiting her at 11 p.m. she presented a wild, weird, staring aspect, and was quite incoherent in her attempts to answer questions. During the day she had voluntarily voided some urine.

21st.—Seems much better in every respect; dorsal pain and vomiting greatly mitigated; shooting pains in legs gone, and she passes her urine voluntarily.

24th.—Very low and sullen in her manner this morning, and inclined to give way to a tendency to weep; vomiting has again come on, but nothing like so severe as it has been; urine has occasionally to be drawn off by the nurse. Last night about 11 p.m. she seemed very strange—would not answer questions, and had a rather wild, weird aspect.

29th.—Vomiting continues at times to a slight extent; slight dorsal pain; experiences a good deal of pain in the hypogastric region; requires the use of the catheter again; urine thick, and, on standing, throws down a muco-purulent sediment.

Dec. 6th.—Had another attack of a cataleptic nature this morning. On going round my wards, I found her lying quite motionless; eyes fixed and staring, apparently taking notice of nothing around her; pupils dilated. Her limbs remained fixed in whatever position I placed them, however unnatural and constrained; pulse during the attack was 102.

From this on she gradually improved—one day worse, the next apparently quite well, and about the end of the year she was considered to be sufficiently recovered to be discharged, during my temporary absence from duty. I have not seen or heard anything of her since.

I regret that when I observed this case I was not aware of the great value of the deep and superficial reflexes in the investigation of diseases of the spinal cord, and so a method of examination was not employed which perhaps might have elicited some interesting phenomena; but, I am inclined to think, not of a very definite nature.

It will not be out of place here to quote a passage from a lecture on “Nervous Mimicry of Diseases of the Spine,”^a by a man of great mental power and a graphic writer, Sir James Paget. He says:—“Some tenderness on pressure of the spinous processes may be found with real disease of the spine, or of the cerebro-spinal membranes, but excessive tenderness is not. This is rather a characteristic of merely nervous disorder of the so-called *spinal irritation*, and usually you find it, not at one, but at two or more parts of the spine—most frequently between the shoulders or at the loin. At these tender spots the nervous patients cannot bear to be touched; they flinch and writhe when the finger touches them very gently. You may be nearly sure there is no disease of the spine when you see this, or when the tender parts of the spine are not painful in moving, or in coughing or sneezing. And you may be quite sure, I believe, when a light blow or

^a Lancet. November 29th, 1873.

pressure produces more pain than a hard one, and when you find the same pain or flinching if the skin over or near the spine is pinched, without pressing on the spine itself." "Again, the merely nervous pain is usually variable, though it may be never wholly absent; and its variations seem to be more dependent than those of real diseases are on distant organs, as the ovaries or uterus, the colon or rectum. In these cases the pain may seem paroxysmal, but I think it is not often so of itself."

It was after much consideration, and not without some misgivings as to the accuracy of my diagnosis, that I at length determined to regard this case as one of "spinal irritation." Although, in the first instance, it may have presented some of the characteristics of slight concussion, yet, in the after-symptoms and course of the affection, the preponderance of evidence was in favour of irritation. The only form of concussion that it could possibly have been taken for is what Erb^a terms "slight shock," in which an accident is followed by severe and general pains in the body, with more or less paralysis of the lower extremities, with exaggerated tendon reflex, unaccompanied by spasmodic symptoms. In this affection improvement takes place after a few days, and our patient probably suffered from it before she came under observation. Some may say "it was simply a case of hysteria," and whilst readily admitting that this neurosis exerted a well-defined modifying influence on the phenomena observed, yet I cannot regard it as an example of this affection pure and simple.

It will be necessary here briefly to review the main features of the case, which lead to the diagnosis of spinal irritation:—(1) there was the general spinal hyperæsthesia, but specially localised in a given region of the spine—the lumbar; (2) there were the neuralgic manifestations in the lower extremities, corresponding to the distribution of the nerves issuing from the portion of the cord principally affected; (3) we had the sub-mammary pain on the left side, but to this we cannot attach much importance as a diagnostic symptom *per se*, it occurring so frequently in the various other affections to which the female is liable; (4) anaesthesia, to a moderate extent, is another symptom—according to Erb^b a rare one; (5) spasmodic affections of the lower extremities were observed, as well as spasm of the neck of the bladder, and also, probably, of the sphincter ani, the former producing difficulty of micturition, and frequently requiring the use of the

^a Loc. cit. P. 349.

^b Loc. cit.

catheter to relieve the distended bladder, the latter giving rise to constipation; (6) nausea and vomiting were other troublesome symptoms, which, according to Paget,^a are common accompaniments.

All these, and many other symptoms of minor importance, were present in the case under consideration, and, together with others, are laid down by Erb (as mentioned in a former part of this paper) as characteristic. It is true that no one of them may be regarded as absolutely pathognomonic of the affection, but when they are found grouped together they are strong presumptive evidence of this particular functional derangement of the spinal cord—functional, because we are not acquainted with the actual pathological lesion producing it.

There are several affections of the cord for which spinal irritation might possibly be mistaken, and between which it is necessary to establish a differential diagnosis, and the most important of these are hyperæmia, spinal meningitis, meningeal tumours, myelitis, and that which perhaps bears the most resemblance to it, neurasthenia spinalis. (1.) *Hyperæmia* will be distinguished by a certain amount of true paralysis of the muscular system, together with, probably, a certain amount of incoordinate movements and more or less spasmodic twitching. (2.) *Spinal meningitis* may be distinguished by painful tension of the muscles of the back, fever, and late paralysis. (3.) In cases where there are *meningeal tumours*, the symptoms are confined to areas supplied by certain nerves. (4.) In *myelitis*, instead of the gentlest pressure causing the patient to wince, pain is only experienced when the vertebræ are pressed deeply; there is no circumscribed hyperæsthesia along the vertebræ; and generally a girdle sensation is present. We find also early anæsthesiæ and paralyses, with painful contractures and spasms. (5.) Perhaps the affection most likely to be mistaken for “spinal irritation,” and *vice versâ*, is *neurasthenia spinalis* (spinal nervous weakness); but the preponderance of motor weakness in this affection may be a useful point in the diagnosis.

It will be seen that I have not here attempted to give an elaborate description of the differential diagnosis of these affections; I have only tried to indicate a few characteristics of each lesion by which they may be most readily distinguished.

The case, taken in its entirety, bore the impress of, many of the symptoms were exaggerated by, and several were wholly due to,

^a Loc. cit.

that subtle, omnivorous, convenient (for what would we do without hysteria to cloak our ignorance in many cases of female disease), and much-mimicking neurosis, wrongly named hysteria. As evidences of this may be specially mentioned (*a*) the occasional moroseness of manner, (*b*) the tendency to weep, and (*c*) the curious attacks of a cataleptic nature.

As long ago as 1829 Dr. Darwall^a drew attention to the capriciousness of temper and variability of spirits, in a paper on "Cerebral and Spinal Irritation," as well as to gastric derangement, palpitation, and constipation of the bowels..

The interesting investigations of Charcot on grave hysteria have let in a flood of light on catalepsy and other curious cognate manifestations of the hysterical state; and I would refer those who may take an interest in this subject to his writings. In *The British Medical Journal* of Jan. 22, 1881, there is a most interesting review of a paper on "Catalepsy and Cerebral Localisation," communicated to the *Progrès Médical* by G. Ballet. In this there are two conditions described—one called "hysterical lethargy" and the other the "cataleptic state"—as occurring in cases of "grave hysteria." In the first, inclination of the head to one or other side, closure of the eyelids, a motionless condition, and limpness of limbs, are produced by directing the patient's attention to a fixed object; during this state the power of speech, and even of calculation, remains. If the eyelids now be opened, the patient immediately lapses into the "cataleptic state," in which the limbs become rigid and remain in whatever position they may be placed, and speech is lost. This was the condition of our patient on several occasions, but whether it was preceded by the lethargic stage or not I do not know. M. Lepine has further demonstrated a curious fact in these patients. He showed that if only one eye be opened the corresponding side of the body passed from the state of lethargy to that of catalepsy. If it be the left eye that is opened the power of speech remains, whereas if it be closed and the right opened, not only is the right side of the body thrown into the cataleptic state, but the power of speech is lost. This is a most significant and interesting point, showing that there must be some deep impression produced on the speech centre situated in the left hemisphere. This impression cannot be of a coarse destructive nature, but must be a minute subtle derangement in the cerebral molecules, analogous to that which probably lies at the root of spinal irritation.

^a Midland Medical and Surgical Reporter. May, 1829.

The medulla oblongata is also liable to these molecular temporary disturbance, as the following case will show :—

CASE II.—A lady, a particular friend of my own, an accomplished and refined woman, the mother of a large family, was suddenly seized, on the receipt of not altogether pleasing intelligence connected with family matters, with an incoordinate affection of speech closely resembling that observed in bulbar paralysis, together with other nervous phenomena, which gradually wore away in a few days.

This case shows that great force of the mental shock fell on the coordinating speech centres in the medulla.

That these functional nervous derangements should be more frequent in the female than in the male sex, I think might be guessed at *à priori* from a consideration of the more delicate general conformation of all the parts in woman, from her more excitable, less stable, more impressionable nature. The nervous system is, doubtless, more sensitive, and more delicately strung, so to speak, in the female sex. These very characteristics render her more susceptible to external shocks, whether of a physical or psychical nature. As we ascend in the social scale these feminine attributes as a rule become more highly developed, and we find in the upper ranks of life, almost in proportion to the degree of refinement and culture, a most delicately-balanced nervous system, which, like a very delicate, intricate piece of machinery, is readily put out of order. These qualities with which Nature, doubtless for a good purpose, has endowed the gentler sex, render her less resolute, more “nervous,” not so daring and enterprising as the sterner sex, and to a greater or less degree mould in her the various diseases to which both sexes are liable in common.

ART. XII.—*On Lethargy or Trance.*^a By THOMAS MORE MADDEN, M.D., M.R.I.A.; Obstetric Physician to the Mater Misericordiæ Hospital; Physician to the Hospital for Sick Children, &c.

THE protracted suspension of intellectual and physical power by a morbid condition resembling profound sleep, and in some cases hardly distinguishable from death, is obviously a matter of practical medical importance. Nor is the interest of this subject entirely

^a Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, March 2, 1881.