

# PROVINCIAL MEDICAL & SURGICAL JOURNAL.

## CLINICAL LECTURES.

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### LECTURE VI.

#### SPINAL IRRITATION.

I wish this evening to direct your attention to two cases which differ materially from each other in their general features, but which are nevertheless most intimately allied, inasmuch as they both spring from the same cause. These cases deserve your special attention, because whilst they are by no means of unfrequent occurrence, they are yet often mistaken, and, consequently, improperly treated. You will find this last remark confirmed by the particulars of the second case which I shall relate.

Edward Bilton, aged 26, a butler, was admitted into the Infirmary on the 3rd of January. His occupation had exposed him to peculiar temptation, and he had lived pretty freely. For two months previous to his admission he had been out of a situation, and consequently, he had taken much smaller quantity of stimuli than he had been accustomed to. At the time of his admission he chiefly complained of severe cramps in the inferior extremities, which almost entirely prevented him walking by day or sleeping by night. He stated that he had been suffering from the spasms for three weeks, and he was unable to assign any cause for their commencement. He had not been exposed to cold, neither had he sustained any injury. He said that if it were not for the cramps he should be quite well, and that he had no other pain nor uneasiness to complain of, except the spasm in his legs. The bowels were very much confined, and he stated that for the last nine weeks he had only been moved once a week. When firm pressure was made over the lower portion of the dorsal vertebræ he complained of considerable pain and tenderness. The same amount of pressure exerted on any other part of the spinal column produced no uneasiness. He was ordered to be cupped over the tender portion of the spine, to take a dose of colocynth and hyoscyamus at bed-time, and a purging draught on the following morning. At the next visit the bowels had not been moved, but he expressed himself as having been greatly relieved by the cupping, which he said had entirely removed the cramp; the pain and tenderness on pressure were also gone. A strong purging mixture with jalap and infusion of senna was prescribed for him, which acted freely on the bowels, and there was no return of the spasms.

But although he was thus speedily relieved of the painful affection for which he came into the house, it

was some weeks before he was perfectly restored to health and fit to be discharged. Very shortly after he had ceased to suffer from the cramp, he began to complain of numbness of the legs, which prevented him walking, and there was a slight return of the tenderness over the dorsal vertebræ. For the removal of these symptoms it was necessary to have recourse to leeches and blistering. The leeches were only once applied, but it was necessary to repeat the blister over the tender portion of the spinal column more than once before the numbness was entirely removed. At the end of a month he was free from complaint, and he was discharged cured. There is one circumstance, however, which occurred during the course of treatment, that has not yet been noticed, but which it is important you should bear in mind. I allude to the sudden appearance of extreme exhaustion after he had been in the house about ten days. He complained of being exceedingly feeble, his countenance was sunken, and his pulse extremely weak and fluttering. He was ordered to take an ounce of port wine every four hours, and he speedily rallied.

Now, the prostration could not be altogether attributed to the loss of blood nor to the depressing influence of the other remedies employed, but was doubtless in a great measure owing to the withdrawal of the stimulants to which he had been for a long time accustomed. When persons have habitually indulged in the use of stimulating drinks, we generally find that they do not bear their sudden and total withdrawal. The constitution has been so long used to the artificial stimulus, that the powers of life soon begin to flag when it is removed. So it was in the present case, and therefore the free administration of wine became necessary, although it was needful at the same time to be applying leeches and blisters. It is always important to watch such cases, for in all probability they will proceed to a fatal termination, unless you timely attend to the indication we are considering. But I proceed to notice the particulars of the second case.

Sarah Ann Hooper, a plump well-formed girl, aged 18, was admitted December 13, 1845, complaining of severe pain in the left side. She is occupied as a servant, but has not been able to attend to her duties for the last eight weeks, in consequence of the pain in her side. She has had no cough and no fever. The pulse was moderate, the skin cool, bowels open, catamenia regular. About a fortnight before her admission she applied for assistance to a surgeon, who told her she had got pleurisy. He bled her, and applied a blister to her side, but from these measures she did not experience any relief, and consequently

became a patient at the Infirmary. On examining the action of the two sides during respiration, not the slightest difference could be perceived in their motion; there was no dulness on percussion, and not the slightest frottement. These negative physical signs were sufficient to show that the case was not one of pleurisy. Pressure along the upper portion of the dorsal vertebræ occasioned considerable pain, and she said it also increased the pain in her side. She was ordered to lie on a prone couch; leeches were applied to the tender portion of the spine, and repeated three or four times, till the extreme tenderness was removed. She had, subsequently, three or four small blisters applied to the same part, and afterwards counter-irritation was kept up for some time by the use of the croton-oil liniment. She was discharged cured.

After having thus related the particulars of these two cases, and the mode of treatment by which they were cured, it is scarcely necessary for me to say that the symptoms in each case depended upon an abnormal state of the nerves proceeding from the spinal marrow—they were both cases of what is usually called spinal irritation. Now, on the nature of this affection, I wish to make a few remarks.

In the first place it is necessary that you should understand the meaning of the term which has just been used—spinal irritation. Without pretending, however, to enter into any precise definition, I will only remark that spinal irritation is characterised by morbid sensibility of certain nerves proceeding from the spinal cord, and by a preternatural susceptibility of the cord or its coverings, to external impressions. You will observe that both these features of the affection were very well marked in the cases which have been already detailed; in one case the morbid sensibility of the nerves was evidenced by painful cramps in the lower extremities, and in the other by constant and severe pain in the side; whilst pressure over the same portion of the spinal column occasioned pain and uneasiness in both.

It is further worthy of remark, that whilst the nervous centre is the seat of the disorder, the pain is situated in some distant part. On what, then, does this abnormal state of things depend? In other words, what is the immediate and efficient cause of spinal irritation? On this subject we find that pathologists entertain very different opinions. Some regard it as consisting in nothing more than mere functional disturbance; whilst others believe it to be the consequence of some organic lesion of the cord or its coverings. For my own part I believe the affection depends upon a hyperæmatous condition of the blood-vessels at the origin of the spinal nerves, and I am chiefly induced to adopt this opinion from two considerations—the influence of pressure, and the effect of treatment.

Now let us notice these two particulars. 1st. *Pressure.* You are of course aware that when any of the tissues of the body are the seat of acute or chronic inflammation, the pain which results is augmented by pressure. Thus, in cases of peritonitis, the abdomen is intolerant of even very slight pressure; in cases of gastro-enteritis, the effect of the pressure often determines our opinion respecting the nature of the disease; and in pleurisy and pericarditis also, pressure in the intercostal spaces, or even upon the

ribs, greatly aggravates the pain; and in like manner, in the cases under consideration, pain and tenderness are experienced by the patients when pressure is exerted upon a portion of the spinal column. But there are two objections which may be urged against the value of the indication we are at present considering—the influence of pressure in causing an increase of pain. *It may be urged first, that the spinal cord, with its membranes, is too securely protected by the bony canal through which it passes to be liable to be influenced by any moderate amount of pressure which may be employed above it; and, secondly, that in many cases of simple hysteria, the apparent suffering occasioned by pressure on the spine, is quite as great as in the cases under consideration.* Let us briefly notice each of these objections.

1st. *The spinal cord and its membranes are removed from the influence of pressure by the bony canal through which it passes.* Now, to this objection, a three-fold reply may be returned. In the first place it may be remarked, that if the cord be really so completely removed from the influence of pressure as the objection assumes, then, except the vertebræ themselves be diseased, every portion of the spinal column should be alike sensible or insensible when pressure is exerted along the course of it. But this we know is not so. In the two cases which have been recorded, the tenderness, or increased sensibility, was circumscribed. It existed over one particular portion of the spinal column, and when the same amount of pressure was exerted over all the rest, it occasioned no tenderness, no pain, no inconvenience. Hence we may fairly infer the possibility of affecting the cord or its membranes, in certain morbid conditions of one or the other, by pressure being exerted along the vertebral column.

Secondly, the peculiar anatomical arrangement of the blood-vessels of the spinal cord render it extremely probable that the cord should be influenced by external pressure. "The spinal cord and the nerves which emerge from it," says Dr. Todd, "are surrounded by a venous anastomosis of remarkable complexity. These veins do not possess valves; they communicate freely with the superficial veins, and with the numerous muscular veins in the region of the back" Now the very circumstance of this free communication existing between the blood-vessels of the cord and the superficial veins of the back, is not only an *a fortiori* argument in proof of the possibility of affecting the cord or its membranes by external agency, but it also satisfactorily accounts for the facts for which I am contending. In other words, we see not only why such should be the case, but also the mode in which it operates.

Thirdly, in cases of unequivocal spinal meningitis, pressure or percussion along the course of the vertebræ increases the local pain from which patients suffer. I can vouch for the correctness of this remark from cases which have fallen under my own personal observation.

But I hasten to notice the second objection to which I have adverted.

2nd. *In many cases of simple hysteria it is contended the apparent suffering occasioned by pressure on the spine, is quite as great as in the particular class of cases at present engaging our attention.* Now, to this objection I may return again a three-fold reply.

In the first place I remark, that in cases of pure hysteria, the pain of which patients complain when pressure is made upon the spinal column is not circumscribed—it is not confined to some particular locality, but on the contrary, is equally great over every portion of the vertebræ; and moreover, it is not confined to the spinal column, but is of equal severity when the pressure is directed upon the fleshy parts of the back, on each side of the vertebræ.

Secondly, I observe, that whilst in cases of spinal irritation the suffering of the patient evidently increases with the increase of pressure which is employed, this is not the case in hysteria. In this latter affection, the *apparent* suffering of the patient bears no proper proportion to the pressure. Hence we not unfrequently find that in hysterical subjects, the slightest touch with the finger over any part of the back will cause them to cringe and give way, to sob, and gasp, and exclaim, whilst a considerable addition to the pressure scarcely, if at all, increases their distress. But we must further bear in mind that this morbid sensibility in cases of hysteria is not confined to the back, but is manifest in other parts of the body; pressure on the sternum or on the sides will occasion precisely similar indications of uneasiness or pain. We often perceive in these cases, that merely placing the hand or even the finger on the sternum or abdomen, without exerting the slightest pressure, the patient shrinks in a moment, as if the suffering which was induced was almost intolerable.

Thirdly, I remark that the immediate seat of the morbid sensibility which exists in hysteria, is obviously the common integument; hence, if a portion be taken up between the finger and thumb, as much distress is occasioned to the patient as if any amount of pressure were exerted upon the spinal column.

Having thus disposed of the two objections which are most frequently urged against the indication which is afforded by pressure on the spine, I proceed to notice, in the next place, the effect of treatment, as corroborative of the view I have taken of the nature of the affection which is the subject of our present observation. And here I may observe, in general, that the method of treatment which affords the most speedy and effectual relief, is precisely that which is best adapted to relieve a state of local hyperæmia. I direct your attention to three remedies in particular—rest, the abstraction of blood, and vesication.

1. *Rest*.—In all cases of local hyperæmia rest is an important means of cure. So long as patients are going about their usual occupations and work, especially so long as they are actively employing the organ which is the immediate seat of disease, the use of remedies is fruitless. The truth of this remark is abundantly confirmed by what we witness every day; and it is also corroborated by what we often see in cases of spinal irritation. In these latter cases the general health is frequently so little disturbed, that persons are unwilling to submit to the degree of confinement which is necessary, and the consequence is, that they do not obtain the relief which they desire. I need scarcely observe, that in order to secure the greatest amount of rest in all cases where the spinal marrow, its membranes, or the nerves proceeding from it, are the seat of morbid irritability, a patient should be confined as much as possible, to the recumbent posture.

But I must further remark that, according to my experience, it is not a matter of indifference whether a person lies prone or supine. The former position is decidedly preferable, and hence I generally have my patients placed on a prone couch. The advantages which appear to me to result from this practice are, first, that the common effects of gravitation are obviated; and, secondly, that the necessary remedies are much more conveniently applied.

2. *Abstraction of blood*.—The relief which is afforded by topical bleeding in cases of spinal irritation is generally very great and often immediate. It was so in the first of the cases which I have detailed. The cramps ceased and the tenderness on pressure disappeared immediately after the patient had been cupped. The previously constipated state of the bowels of this man, (they had not been moved for a week, and only nine times during the preceding nine weeks,) may possibly, by some persons, be regarded as sufficient to account for the symptoms under which he was labouring at the time of his admission. But that this was not the cause of his sufferings is obvious from the immediate relief which followed the abstraction of blood, more than twenty-four hours before the purgative medicine had produced any effect upon the bowels. The simultaneous disappearance of the cramps in the extremities, and the pain and tenderness over a limited portion of the spinal column, is further sufficient to connect the two together in the relation of cause and effect. But although the relief which results from bleeding is often so speedily manifest, yet it is not so in all cases. Sometimes the operation has to be repeated several times before any mitigation of the symptoms takes place, and in other instances relapses occur, which render it necessary to have recourse to the same means again and again. In the case of Bilton, we perceive that although he was so perfectly relieved by the cupping, yet some days afterwards he complained of numbness of his legs, which prevented him walking, and there was at the same time a return of the tenderness over the spine. For the relief of these symptoms, which I believe were occasioned by congestion of the vessels of the spinal cord, leeches were applied to the tender portion of the spine, and it was subsequently necessary to apply two blisters. In a case which fell under my observation a short time since, the cupping had to be repeated more than a dozen times, but on each occasion the relief afforded was very marked and considerable.

3. *Vesication*.—The application of blisters in cases of spinal irritation, is often productive of great relief; but in these cases, as in cases of inflammation of internal organs, they are not equally serviceable at every period of the disease. If blisters be applied at too early a period, before the congested blood-vessels have been relieved by the abstraction of blood, they do not, in recent cases at least, afford an adequate amount of relief, but on the contrary, they produce a considerable degree of irritation, and occasion a very much greater amount of pain than they do if they are employed later. I have more than once seen persons who were very tolerant of pain, and accustomed to the application of blisters, who, nevertheless, when suffering from spinal irritation, complained of the pain arising from a blister applied at too early a period, as being exceedingly severe, and almost intolerable. It is

frequently found to be desirable to employ counter-irritation for a while after the more urgent symptoms have been overcome. Hence, you will recollect, that in the case of Sarah Ann Hooper, after she had been greatly relieved by leeches and blisters, as some uneasiness remained about the side, and slight pain was occasioned by pressure over the upper part of the dorsal portion of the spinal column, she was ordered to have the back rubbed with the croton-oil liniment, which had the effect of producing a plentiful eruption, and ultimately removing the disease.

With respect to medicines in this affection, I shall only observe, that beyond regulating the state of the bowels they are of no use.

Before leaving the subject I may remark, that in some cases of spinal irritation, the patients are suddenly plunged into very considerable danger, by the occurrence of symptoms of disturbed cerebral irritation. In illustration of this I may briefly mention the particulars of a case which I saw some months ago. The patient was a female, about 40 years of age, who had been suffering from a long time from pain in the side, which her medical attendant regarded as pleuritic. The remedies which had been employed had failed to afford her relief. When I saw her she was lying in bed and complaining of constant and severe pain in the side, which, however, was not increased by inspiration. She had no cough; the skin was cool; pulse rather quick but feeble. On examining the side with the stethoscope, no friction could be detected. When pressure was made on the upper portion of the dorsal vertebræ she immediately complained of great pain and tenderness, and said that it greatly aggravated the pain in her side. In this case then, the affection of the side obviously depended upon the morbid state of the spinal nerves. Remedies were accordingly applied to the tender portion of the spine, and the side was relieved. She continued to go on very well, till one day, about a fortnight after my first visit, I found her partially paralytic; she soon fell into a state of coma, and died, with all the symptoms of profound apoplexy.

I have alluded to the foregoing case for two reasons: first, to shew you the jealousy with which you ought to regard the earliest and slightest indications of cerebral disturbance in these cases; and, secondly, because the occurrence of these symptoms is strikingly analogous with what we know takes place in cases of undoubted inflammation of the spinal cord or its membranes; and this is a further confirmation of the views which I have been advocating respecting the nature of spinal irritation.

#### ON THE EFFECTS OF THE SUB-SULPHATE OF MERCURY, (TURPETH MINERAL,) AS AN EMETIC.

By DR. HUBBARD, of Hallowell, Maine, United States  
(Read before the Philadelphia College of Physicians,  
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My attention was first directed to the use of this substance, from feeling the want of some article, reliable, as an emetic of certain, prompt, efficient, and safe action, with the least tendency to run off by the bowels. For, whatever may be thought of the value

of emetico-cathartics in many other cases, it must be admitted by all that simple emesis is, in many pathological conditions, alone desirable; and that its complication with catharsis will, in such conditions, not only defeat the beneficial effects of the emesis, but will prove positively injurious, and often extremely hazardous. It is under precisely such conditions of the system, that the emetics in common use, such as tartarized antimony, ipecacuanha, sulphate of zinc, &c., will most frequently fail of producing efficient emesis, and are most liable to run off by the bowels. There are certain diseases—for instance, croup, and scarlatina maligna—during all the stages of which, there is great insensibility of the stomach to the impression of emetics, and, when procured by inordinate doses, emesis is likely to be very imperfect, and to be followed by catharsis. The same insensibility also exists in all diseases, under circumstances of great prostration of the system, whether that prostration be owing to the violence of the disease or to its duration.

Every practitioner of experience must have felt the importance of availing himself, under some of the above-named pathological conditions, of the revellent and equalizing effect of simple emesis; and he must also have experienced the difficulty and uncertainty of obtaining it by any of the emetic substances in common use. Take, for instance, a case of spasmodic and intermittent croup:—The patient is suddenly seized, for the most part in the night, with croupy cough and spasmodic breathing, which symptoms continue, attended with great distress and anxiety, for several hours, and then pass off to return on the succeeding night with redoubled violence. In many instances, the intermissions of all morbid phenomena have been so perfect, as to lull the friends of the little sufferer into a fatal security, until, by the accumulated power of repeated paroxysms, the patient is overwhelmed with disease, almost beyond the hope of recovery; when, for the first time, medical aid is called for. A single case will better illustrate the difficulties the physician has to encounter than any general description.

I was called in the night of February 5, 1845, to see Miss C., aged about twelve years. In the three preceding nights, at about the same hour, she had been seized with paroxysms, similar to the one in which I found her,—each one continuing several hours, each of progressively increased severity, and each leaving her able to be about, during the day, with respiration so easy as to excite no alarm, and only a slight croupy cough. I found her with breathing extremely quick, laborious, and stridulous, the chest heaving with convulsive throes, the countenance livid, the eyes wild and distracted, extreme jactitation, the pulse thread-like, vacillating, and too rapid to be counted, the extremities, up to the body, of an icy coldness, in short, the patient appeared like one in the last agonies. Strong rubefacients were immediately applied to the whole surface, sinapisms to the spine and extremities, and heated blankets to the lower limbs. As soon as she could swallow,—for deglutition was at first extremely difficult,—five grains of the *turpeth mineral* were given at once, and followed with the free use of mustard whey; this not vomiting her, after fifteen minutes I gave her five grains more, immediately upon swallowing which, vomiting commenced, and continued smartly for more than an hour. During

\* From the *American Journal of the Medical Sciences*.