CLINICAL LECTURE

ON SOME

POINTS IN THE PATHOLOGY AND TREATMENT OF HEADACHE.

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IN order to approach the treatment of headache with any chance of success, we must come to an understanding respecting its nature and its causes. We must consider whether it be dependent on anæmia or on hyperæmia; on the state of the nervous mass inclosed within the skull, or on the condition of the blood-vessels which supply it. These, however, are the land-marks which only point the direction of further inquiry.

Headache usually denotes some functional disturbance of the brain or its membranes, induced by excess of local blood-pressure, by absorption into the blood of poisonous matters, or by such a diminution of healthy blood as provokes irritation and suffering. Headache, too, is a symptom of organic disease; sometimes of the brain itself, and very commonly of the renal organs or stomach.

Considering the strain which the necessities of modern life have put upon men and women of the present day, the ceaseless activity of their thoughts, the hurry of business life, and the consequent tension of the nervous framework, the marvel is not that the brain should periodically ache in some persons, but that, with its delicate organisation, it is not oftener the seat of organic disease.

First, then, as regards the condition of the brain in anæmia and hyperæmia. During excitement and mental strain, the encephalon is vascular; during sleep and exhaustion, the vessels lose their turgidity, and the brain is pale and bloodless. These changes are associated with the amount of the cerebro-spinal fluid; and, according to Mr. Hilton, when this is in excess, the vascularity is slight; when it is diminished, the turgescence is increased. Then the "perivascular spaces" along which the vessels travel are invested with a loose sheath of connective tissue, and within this sheath is a watery fluid like lymph. The vessels dilate in an active and healthy state of the brain, and the fluid is absorbed without compressing the brain-structure; but when the activity subsides, the vessels contract and the space between them and the perivascular walls is again filled with fluid.

With respect to the state of cerebral anæmia, it is important to remember that the brain in health, according to Haller, receives a fifth of the whole blood in the body; hence, if this vascular supply be much diminished, the functions of the brain no longer continue active and energetic; the mind becomes enfeebled, the functions of the body are lowered, and we have examples of it in the condition caused by bleeding piles, menorrhagia, and profuse leucorrhœa. If, again, the blood be wanting in healthy constituents, the mental faculties become clouded and the brain indicates disorder. We have instances of it in the cachexia of syphilis, mercury, and some other forms of blood-poisoning. When the arterial supply of blood to the brain remains long deficient, headache, confusion of ideas, petulance, and irritability of manner, manifest themselves; the patient is easily exhausted, and the features may be livid or cold from the effect produced on the sympathetic system. The blank and pallid look presents a remarkable contrast to the red and eager eye of hyperæmia.

The striking feature of the headache of cerebral anæmia is pain at the top of the head, which often feels hot and burning. Sometimes it is of a gnawing scraping character, and the attendant irritability is another marked feature of the condition. It may also spread to one side or the other of the head, but it is persistent in not quitting the vertex. The headache of anæmia is not occipital, as some have stated; it may extend to the occiput, but I assert with some confidence that that is more frequently the seat of the neuralgic variety.

The headache of hyperæmia may be of an active or passive character, and the symptoms are quite distinct. In the active form, the arteries contain a larger quantity of blood than usual. We have instances of it in the early stages of inflammatory fevers where the heart's action is violent and the arterioles dilated. When headache frequently succeeds cerebral hyperæmia from active exertion, or muscular effort, we may infer that the nervous centres are excitable, if they are not positively unhealthy. The head in this variety is hot, and the

pain frontal, throbbing and bursting, the pulse is tense and full, and the conjunctivæ are reddened. There are disturbance of sensibility, broken sleep, and inability to face the light; the patient is drowsy and inclined to sleep heavily whether he has eaten recently or not, and an apoplectic seizure may ensue.

Passive hyperæmia or congestion is observed in cases of bronchocele and valvular disease of the heart, especially of the right side, which has a tendency to keep the brain habitually overloaded with venous blood, because it is obstructed in its return from the head. We have instances of it also in chronic or gouty bronchitis, when the ventricular action of the heart is defective, and the cavities do not close efficiently on their contents; it may also arise from any morbid condition of the lungs, or from pleuritic effusion, causing compression of the thoracic viscera, and so overloading the systemic circulation.

Consistently with the principles of a clinical lecture, I shall briefly advert to—1. Headache in both sexes; 2. Headaches in children.

Looking at the large number of women that I have seen here in the course of a year, suffering from disorders incidental to their sex, it would be impossible, if my experience were limited to this sphere of observation, to form any approximate idea of the relative frequency of headache in the two sexes. But in private practice, I find that, of the last thirty cases that came under my notice, only eighteen were women. That women, from their more susceptible organisation, are the most frequent sufferers may be expected. Irregular menstruation, leucorrhœa, menorrhagia, and childbearing, are such obvious sources of exhaustion as to swell the list of causes of headache. These I shall allude to further on, but it will be sufficient for our immediate purpose if I discuss a few varieties of headache common to both sexes.

The first form to which I would draw attention under this category is *sympathetic headache*. This arises from some eccentric source of irritation, as faulty digestion or ovarian excitement, by which a morbid impression is conducted along the pneumogastric and great sympathetic nerves to the brain. A nervous headache is often sympathetic when the stomach is weak and oversensitive; it is a form very prone to arise in women about the catamenial period, or from menorrhagia, which I will shortly consider. Dyspeptic and bilious headache may also be classed under this category. The latter term, bilious, however, ought not to be used unless there be such a copious secretion of bile that it either accumulates in the duodenum or regurgitates into the stomach. In all these cases, it is probable that the sympathetic nerve is engaged in regulating the supply of blood to the uterus or stomach, as the case may be, and that in some way it becomes involved in irritation; which irritation spreads to the sympathetic filaments surrounding the blood-vessels of the brain. We know, from the experiments of Brown-Séquard, that section of the sympathetic nerve causes the blood-vessels to dilate, and the quantity of blood passing through them to be greatly increased, whilst galvanisation of the nerve has the opposite effect, causing the blood-vessels to contract and the blood in them to be diminished. It is therefore evident that the sympathetic nerve is a regulator of the amount of blood in the cerebral blood-vessels.

Nervous headache is decidedly the commonest of all forms of headache. Every habit of body is liable to it: the delicate and the robust, those whose blood is healthy, and those who are sickly and anæmic, though the latter are the commonest subjects of it. The want of balance between the mental and physical organisations determines the outbreak, the nervous centres become temporarily deranged, and thus a "nerve-storm" is readily induced. A healthy person sits down with a worried stomach, and his unpleasant thoughts persistently going on in one direction exhaust his nervous structures unless he be able to throw them off, or to obtain sleep before the blood-supply to the brain has become disordered and induced a tension of the nervous system; an explosion in the shape of headache takes place; and in some persons this is, so to speak, a source of relief, and the patient knows, from past experience, that he is safe for some weeks to come. Over and over again, I have known a severe nervous headache foretold by the patient or his friends, a degree of uncontrollable vexation at trifles and irritability before the seizure has set in—premonitory symptoms, as we may term them, which are common to epilepsy and some other morbid states. In other cases, confusion of ideas, nausea, or sickness, not traceable to any indiscretion in diet, has preceded the attack. Worry and anxiety, real or fancied, are among the most fertile causes of this malady; bodily work and fatigue are less common causes, even though the muscular system has been much tried. Any indigestible article of diet to a fretful stomach will excite it, the gastric nerves irritating and transmitting a morbid influence through the sympathetic to the brain.

The passage of a large quantity of limpid urine, and coldness of the feet and hands, are very frequent concomitants of a true nervous headache in women; it is the sure forerunner of a seizure in some. It is rare to meet with this excess of urinary discharge in men; but the

disturbance of the vaso-motor system, causing coldness and shivering, is equally frequent with them. When these symptoms are present, there ought to be no mistake in determining the character of the headache and the line of treatment which is demanded. If I were asked to name one cause of the extraordinary frequency of headache in young women, I should say that it was *spanæmia*. The poor seamstress, who is loaded with anxiety and half-starved to support a widowed mother at home, is, in consequence thereof, one of the most common subjects of headache. As the *anæmia* increases, the attacks become worse, and she finally breaks down under the pressure, until her life wears away in consumption.

The influence of heredity is very strong. You will see two sisters, whose ideas and moral traits are totally different, and whose lives have been passed under circumstances in every way dissimilar, yet, as they approach a time of life when childbearing or anxiety through the loss of friends has told upon them, the features of headache are the same in both, alike in the spinster and in the matron. There is no essential difference between them; the querulous manner and the restless habit of body which have preceded the outbreak are followed by lethargy, and the patient is absorbed by her own suffering.

Some headaches, when purely functional, are attended by emotional activity and such curious mental manifestations as suggest the possibility of nerve-degeneration and structural change. These symptoms may last for years, and the patient may advance so far in life as to render it doubtful whether recovery can occur or not; yet it does seem now and then that certain changes take place in the circumstances or life of the sufferer, and a headache is never complained of again.

Allied to the nervous headache is that variety called *neuralgic*. It is traceable to decayed teeth, to ovarian and intestinal irritation, and to the poison of malaria. It also arises from fatigue, anxiety, and changes in the weather, hunger, care, and oversuckling. The latter is a most fertile cause among poor women. It is characterised by intense paroxysmal pain in the course of the superficial branches of the fifth nerve, distributed to the temple and to the inner angle of the eye, and by vomiting, which is rare, aggravating instead of relieving the agony.

The headache of *excessive menstruation* or *menorrhagia* is one common enough in the out-patient department of this hospital and similar institutions for women's ailments. There is no complaint among poor women which is more obstinate to contend with, because they cannot obtain rest like the wealthy and affluent. It is the most aggravated type of nervous headache; the brain is starved and bloodless, and its equilibrium is destroyed. When this cause remains long and cannot be removed, the brain rarely recovers its healthy balance, and the patient's manner and habits are completely changed; mental exertion is impossible; though the thoughts are ever painfully busy, she is unable to fix her attention on anything, and remains a confirmed invalid. It will be found on inquiry that the subjects of this headache are from forty to forty-five years of age, that they have had children fast, or the uterine functions have been overactive for years; latterly, the periods have recurred once in ten or fifteen days, and then the loss has been enough to blanch the surface and drain the vascular system. In the intervals, the headache has perhaps never been quite absent. There have been vertical pain in the head and heat, restless nights, and confusion of ideas; while the patient experiences such an absence of self-control that she is afraid to trust herself with her children, or even to use a knife for her food. The pulse is small and feeble, oftentimes so slow that it does not exceed fifty beats per minute. The face is despairing and blank, and the patient will often be seen seated alone in melancholy thought, as if overcome by some heavy affliction; then, perhaps, on slight provocation or sudden impulse, she becomes restless; she cannot sit still for an instant, or bring herself to reason. The least noise is unendurable, and, if excitement should follow, her state approaches threatening insanity.

Under the head of *toxic headache*, we may include those headaches which arise from the action of poisoned blood in the nerve-centres. It matters not whether the poison be that of certain specific diseases, like gout, malaria, or syphilis, or be derived from bad wines, unwholesome food, or toxic agents actually so termed. All these agents may induce headache through the actual irritation of the brain by poisoned blood, or through altered blood-pressure in the cerebral vessels, due to the effect of the poison on the centre of the circulation. In the large public schools of London and other places, where the atmosphere becomes vitiated by carbonic acid, headaches are very common among boys and girls.

Organic headache is a form of headache arising from morbid changes within the skull, and the one over which we have the least control. It is provoked by the growth of tubercular, syphilitic, or cancerous tumours, aneurisms, hydatids, softening of the brain, and arterial degeneration. The disease may be of considerable duration before it causes

any pain or suffering, and the patient may pursue his calling till within a short period of being laid up altogether. A tumour has been known to occupy the centre of one hemisphere of the brain without causing any disorder of sensation or paralysis. When the tumour is of slow growth, the brain-tissue gradually accustoms itself to the disturbing force; and, if it were not for symptoms indicating a loss of function in parts supplied by certain nerves, we might never suspect that the brain was going wrong till headache had supervened. Dr. Moxon says that headache is not produced till the membranes are involved. True organic headache is frequently limited to a single spot; the agony is intense, and the patient may scream out with it, meanwhile supporting his head with his hands.

Headache from affections of the periosteum is usually limited to spots on the scalp, which are tender on pressure; but the bone may also be involved, and the brain may become adherent to the dura mater.

The chief varieties of headache in children are those due to injuries often overlooked, to the various forms of derangement of the alimentary canal so common in childhood, to *anæmia* and exhausting influences, as bad food and impure air; to immoderate intellectual training, and not rarely to organic disease of the brain itself.

In strumous and weakly children, I have frequently known severe frontal headache to follow constipation, the pain departing after the bowels have been relieved and again returning with the constipation. I have lately seen two children in the same family so affected. They were delicate from birth; had carious teeth, and bolted their food with ravenous hunger. The stomach in these cases is unfit to receive almost any form of food, much less that which is not masticated; it passes into the intestines, where the mucus is deficient, and so the motions are hard and pebbly. Such headaches as these demand watchfulness; for, if neglected, or rather if the constitutional condition be overlooked, and these children be kept at school, the brain may sustain irretrievable mischief.

A headache of long standing in a young child is very significant, and should invite more serious attention than a similar disorder in an adult. The sleepless nights, the irritable manner, and the drowsiness in the daytime are often forerunners of evil when the brain is in active growth, and every source of exhaustion tells on the nervous framework.

The period of the second dentition, when delayed, especially in children who are rickety, is prone to headache.

As to the treatment of headaches, a diligent search should be made to ascertain the cause, and the physician will be most successful in his management of them who does not lose sight of a general plan of treatment whilst he is employing such special remedies as the type of headache appears to indicate. A sound diagnosis is essential for success in treatment. If a headache can be traced to any source of irritation in the digestive apparatus, it should be removed, and the organs of secretion and excretion put in proper working order. But what requires particular attention after this preliminary step has been observed, is the selection of remedies which exercise a specific effect upon the cerebral circulation. These agents are tonic and calmative. If the brain be overexcited, the latter class must be chosen, and among these agents are the bromides of potassium and ammonium, chloral-hydrate, and morphia in hypodermic injection, or other form, in cases worn out by pain and suffering. This last is an invaluable remedy; but care must be employed in its use. I have used these injections of morphia combined with an infinitesimal dose of atropia with the greatest success, whilst the bodily powers were good; but I have discontinued them when the strength has been much reduced and there have been signs of cardiac failure. Organic disease is no hindrance to the employment of the hypodermic injection when the patient's life has become wearisome through pain, and nothing else affords relief. Of the former class of remedies are quinine, iron, strychnia, phosphorus, belladonna, and digitalis, each drug possessing some special property which indicates its use in any particular case. In some nervous headaches, a stimulating emetic of sulphate of zinc or mustard, or ipecacuanha, will act like magic, and so will a mustard-leaf at the back of the neck, the feet and legs being at the same time put in hot water.

In the neuralgic variety, tonics are serviceable, especially cod-liver oil, quinine, arsenic, and phosphorus. The local application of aconitina ointment is valuable in that form known as brow-ague.

For the periosteal variety of headache iodide of potassium will be required, sometimes in large doses, to the extent of forty or even sixty grains daily, with bitter tonics. Bichloride of mercury, too, is another important drug for special cases.

For the gouty and rheumatic forms, iodide of potassium, colchicum, alkalies, ammonia, lithia, and mercurials, with change of place and care in diet, will severally come to our assistance. It is in such cases as these that the waters of Carlsbad, by regulating the hepatic func-

tions, do so much service and improve the dyscrasia upon which the symptoms depend.

There is a point worth attending to in the treatment of all headaches. See that the head is elevated at night, and the pillow hard; for, if it be soft, the head sinks into it and becomes hot, which with some people is enough to provoke an attack in the morning if the sleep have been long and heavy.

But, whatever be the plan of treatment decided upon, rest is the first principle to inculcate in every severe headache. Rest, which the busy man and the anxious mother cannot obtain so long as they can manage to keep about, is one of the first remedies for every headache, and we should never cease to enforce it. The brain, when excited, as much needs quiet and repose as a fractured limb or an inflamed eye, and it is obvious that the chances of shortening the seizure and arresting the pain will depend on our power to have this carried out effectually. It is a practical lesson to be kept steadily in view, in that there may lurk behind a simple headache some lesion of unknown magnitude which may remain stationary if quietude can be maintained.

And now I would supplement these observations by a few remarks on some of the remedies in common use for the different varieties of headache.

Croton-chloral has been recommended by Dr. Liebreich of Berlin as possessing a special action on the sensory branches of the fifth nerve. It is of most benefit in facial neuralgia, relieving pain and producing sleep. I have known it to prove very serviceable in some cases of nervous headache in which the disorder has chiefly occupied one temple, the occiput and neck, or one parietal bone; and in other cases not only to utterly fail, but to induce sickness and nausea, if they did not previously exist. I generally give ten grains for a dose in plain water, though it has been recommended to dissolve the remedy in a few drops of glycerine and then add the required quantity of cinnamon-water, which, to some extent, disguises the bitter nauseous taste. On this account, it may be given in the form of a pill, beginning with two grains and increasing the dose according to the urgency of the symptoms.

Hydrate of chloral is a remedy which has become one of the most frequently chosen of therapeutic agents, from its hypnotic effects. In large doses, it is narcotic, and, in very large doses, it is said to produce anaesthesia. In nervous and spasmodic diseases, as puerperal convulsions, trismus nascentium, and the sleeplessness of chorea, we all recognise its value. In headaches, whether of the nervous or vascular type, when the pain is wearing out the patient and sleep cannot be obtained, chloral is of undoubted value. Chloral is a remedy requiring extreme caution in its administration whenever headache has recurred so often as to exhaust the patient's nerve-force. Where the pulse has become small and weak, through constitutional debility or failure of the heart's action, a full dose may be followed by syncope. Incautiously administered, it may reduce the frequency of the respiration and annihilate the pulse. It lessens blood-pressure by its action on the vaso-motor system, and also by depressing the heart's action; hence it requires caution in cases where the patient, although severely suffering, is exhausted. In some cases, after its administration, I have observed such profound sleep and quiet shallow respiration as to make me cautious in employing it where the circulation is feeble. "When toxic doses have been employed, the heart, after numerous pauses, is arrested in diastole." (H. C. Wood.)

Chloral has a decided effect upon the vascular system, and, if the pulse be firm or hard, the face flushed, or the excitement considerable, it relaxes the muscular walls of the arteries and reduces blood-pressure. It has been recommended not to employ a larger initial dose than ten grains; but I have never witnessed any effects of an overdose from twice the quantity. Very alarming symptoms have followed doses of forty and even thirty grains, so that its use requires caution, if the nerve-power be much reduced.

Gelsemium is sometimes useful in neuralgic headache and the neuralgia arising from decayed teeth. The powder and the tincture are the two forms for administration. The dose of the former is from one to two grains, and of the latter from ten to twenty minims. It is a powerful remedy, and, as many fatal cases are recorded from an overdose, its use requires caution. My experience of it is very limited, from having many more remedies at my command with which I am better acquainted. In one case, I gave a grain of the powder in a pill every night for sleeplessness caused by neuralgic headache, and it exercised a most beneficial effect.

Phosphorus is one of the most important agents we possess in nervous exhaustion, and its efficacy is undoubted when administered in an unoxidised state capable of being readily assimilated. No remedy requires more care in prescribing than this; for, whilst in small doses it is a gentle stimulant and tonic, in large doses it depresses the heart's action, like chloral, and is not free from danger.

I have thus passed briefly in review all the well known forms of headache. I have glanced at their individual peculiarities, their significant symptoms, and the issue to which they tend. It may possibly be reserved for another occasion to discuss each separate type in a more exhaustive manner, and to point out more fully than I have been able to do to-day how much there is to be said on a subject of engrossing interest alike to the patient and to the physician.

ON CHRONIC CERVICAL ENDOMETRITIS AS A FREQUENTLY OVERLOOKED CAUSE OF STERILITY AND ABORTION.*

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CHRONIC cervical endometritis consists in chronic inflammation of the mucous membrane lining the cervix uteri, extending from the os externum to the os internum, the surface familiarly known as presenting the arbor vitæ appearance. The mucous membrane lining this tract is covered by cylindrical and ciliated epithelium and studded with villi. Thick tenacious viscid mucus is copiously secreted from this surface. The villi become hypertrophied, and give to the os and cervix an appearance termed granular degeneration. Eversion of the os and lower portion of the cervical canal not unfrequently occurs where the case is severe or of long standing.

Between the folds of the mucous membrane, glands are seen, the so-called Nabothian glands, which become involved in the inflammatory process.

The symptoms indicating the presence of this condition are generally dragging sensations about the pelvis, pain in the back and loins, increased by standing or walking; profuse leucorrhœa; irregularity of the catamenia, which are generally too profuse and often painful; sterility in married women, or, if impregnation occur, abortion.

On examination *per vaginam*, the cervix may be found to be apparently healthy, no roughness nor any unusual condition exciting attention. In other instances, the cervix is found to be more bulky than normal, the os puffy and patulous, the lining mucous membrane being granular. On passing a speculum, however, whether the cervix be normal in appearance or otherwise, we shall generally find exuding from the os uteri a quantity of glairy tenacious mucus, like unboiled white of egg, which is with considerable difficulty removed from the cervical canal.

This condition not unfrequently ensues shortly after marriage, and occasions considerable distress and suffering, being due, I believe, in many instances to so-called latent gonorrhœa, communicated by the husband, as pointed out by Dr. Emil Noeggerath of New York. Sterility is an almost invariable result; but, should conception occur, abortion almost invariably ensues within the first few months, and, unless the patient be properly treated, much subsequent uterine disturbance is sure to follow.

Where the external os is naturally very small and circular, it may be necessary to divide it crucially, or even to slit up the cervix for half an inch or so, in order to prevent the tenacious discharge from accumulating in the cervical canal.

My belief is that many cases of sterility, where the difficulty is overcome by free division of the cervix with the metrotome, are benefited as much by the depletion which ensues, and by the discharge being allowed free vent from the cervical canal, as by the division of any supposed stricture of the internal os uteri.

Where the cervix is very bulky, the lips somewhat everted, and the canal very granular, nothing proves of so much service as local depletion by means of scarifying the surface or puncturing the cervix in several places, allowing an ounce or two of blood to flow, encouraging its continuance, if necessary, by warm water injections, and subsequently inserting tampons of cotton-wool saturated in glycerine, which tend to keep up a copious watery discharge and so lessen the bulk of the cervix.

In cases where it is not deemed necessary to resort to division of the cervix or scarification, the insertion of a laminaria tent for twelve or twenty-four hours, so as to open up the cervix and expose thoroughly the inflamed mucous surface, and thus enable us to act freely upon it, may prove of much benefit. Care must, however, be taken that inflammatory mischief be not thereby set up.

* Read in the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association in Bath, August 1878.