CLINICAL LECTURE

ON

NERVOUS OR SICK-HEADACHES.

Delivered at Addenbrooke's Hospital, Cambridge.

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GENTLEMEN,—We have lately discharged from the hospital a young man, aged 17, who, during the short time he remained here, suffered no pain or uneasiness. He was somewhat anæmic, and of rather stunted growth, but he was sharper and more intelligent than the generality of his class: with these exceptions, there was nothing about his general condition which calls for remark. He had been troubled, however, with four slight attacks of what are variously called nervous headaches, sick-headaches, or bilious headaches: an affection which does not often come under our observation in the hospital, though I suspect that, if carefully inquired after, the percentage of patients liable to the disorder would not be found so small as is generally supposed to be the case. In private practice, however, the affection is by no means uncommon. It affects both males and females; and perhaps in an University town, owing to the large proportion of individuals of studious and sedentary habits, it may be more prevalent among males than in other places. At all events, it is a complaint which often comes under my notice; and in the forms to which I am going to refer, I believe much may be done to moderate the intensity and frequency of the attacks.

The symptoms accompanying some forms of this disorder have been detailed *ad vivum* by Sir John Herschel, the Astronomer Royal, Sir C. Wheatstone, Professor Dufour of Lausanne, and others; and in the *Philosophical Transactions* of 1870, p. 247, you will find an extremely interesting paper by Dr. Hubert Airy (On a Distinct Form of Transient Hemiplegia), wherein he faithfully and most graphically records his own experience of the affection, and quotes the descriptions which have been given by the above distinguished persons. With many of the comments contained in the paper I entirely agree; but there are some points upon which I can supplement the information there given: and my chief object in bringing the subject under your notice is with a view of trying to explain how the symptoms may be produced.

The headache is preceded for a variable period by certain disorders of sensation, the most striking of which is a transient disturbance of vision, which sometimes takes place. In some persons, the malady stops short here, and is not followed by headache; in others, the headache appears to be developed without any premonitory symptoms, until careful inquiry reveals the contrary. The complaint then has two stages. 1. The stage of disordered sensation. 2. The stage of headache, nausea, etc.

I will first consider the forms attended with disturbance of vision. Even this commences in different ways in different individuals, or even in the same individual. Here is Sir John Herschel's account. "I was sitting one morning very quietly at my breakfast-table, doing nothing, and thinking of nothing, when I was startled by a singular shadowy appearance at the outside corner of the field of vision of the left eye. It gradually advanced into the field of view, and then appeared to be a pattern in straight-lined angular forms, very much in general aspect like the drawing of a fortification, with salient and re-entering angles, bastions, and ravelins, with some suspicion of faint lines of colour between the dark lines. The impression was very strong, equally so with the eyes open or closed; and it appeared to advance slowly from out of the corner till it spread all over the visual area, and passed across to the right side, where it disappeared. I cannot say how long it lasted, but it must have been a minute or two. I was a little alarmed, looking on it as the precursor of some disorder of the eyes; but no ill consequence followed. Several years afterwards, the same thing occurred again; and I recognised, not, indeed, the same precise form, but the same general character—the fortification-outline, the dark and bright lines, and the steady progressive advance from left to right. I have mentioned this to several persons, but have only met with one to whom it has occurred. This was a lady of my acquaintance, who assured me that she had often experienced a similar affection, and that it was always followed by a violent headache, which was not the case with me."

At a subsequent period (November 17th, 1869), he writes to Dr. Airy as follows. "Since I wrote to you, I have been very frequently visited with the phenomenon in a greater or less degree. . . . It always now begins with a small glimmer *near* the middle of the field of view, and spreads out."

In other cases, the attack begins by inability to see the spot on which the eyes are fixed, while all around is clear and distinct as usual. The area obliterated soon increases, and is one-sided; so that to the patient, if he be walking along the streets, his friends appear with only one eye each, or he sees one-half only of their faces. The names on sign-boards become half obliterated; and the patient is like Abernethy, who, when trying, after an accident, to read his own name, "could see as far as the *ne*, but could not see a bit of the *thy*." The edge of the part obliterated soon assumes the fortification-outline, this outline being faintly luminous; objects at the centre of vision become less completely obliterated, but a glimmering vibratory movement, somewhat resembling the undulations of heated air as seen above a hot stove, appears within the zigzag outline; and this movement gradually extends over the whole field of vision. This zigzag outline has been variously described to me. One patient stated that it appeared as though the zigzags on a Norman arch were slowly moving along the arch, whilst another set were slowly moving over them in an opposite direction; and the glimmering vibratory movement which filled up the field of vision very closely resembled, he said, the appearance seen on looking through two pieces of gauze slowly vibrating in opposite directions.

I will now read you a few extracts from the account which Dr. Airy gives of his own sensations. The first attack came on when at school, the last morning before the holidays. "I noticed it first by being unable to see the 'A' in 'tan A', when I looked at the top. At first, it looked just like the spot which you see after having looked at the sun, or some bright object. I thought it might be an eyelash in the way, or something of that sort; but I was soon undeceived, when it began to increase. I then bethought me that it must be the same thing that — suffered from, so I let it alone, knowing that it would go off in time, which it did, leaving a most terrible headache behind it, which is the worst part of it, the blindness itself giving no pain whatever. When it was at its height, it seemed like a fortified town, with bastions all round it, these bastions being coloured most gorgeously. If I put my pen into the space where there was this dimness, I could not see it at all; I could not even distinguish the colour of the ink at the end. All the interior of the fortification, so to speak, was boiling or rolling about in a most wonderful manner, as if it were some thick liquid all alive. It did not belong to one eye, but to both, the right eye having the most. . . . Since then, I have very frequently been revisited by this affection. . . . When this blind spot makes its appearance close to the centre of vision, as soon as it begins to spread and shows a serrated margin, it at once presents the irregular horse-shoe shape, with one arm adherent to the sight-point and the other receding from it outward. The teeth of the adherent arm are small and fine; those of the receding arm grow larger and larger.* But when the blind spot takes origin at some distance from the centre of vision, as it spreads it preserves its contour unbroken, stellate, nearly circular, until its margin nears the centre of vision; then the serration at the point nearest the centre shows irregularity, and a breach appears in the outline: one branch of the incomplete circle takes a smaller pattern of zigzag and recedes. . . . The climax is generally reached in twenty or twenty-five minutes from the first beginning; then the large arm, having over-spread the margin of the field, begins to fade and leaves the lower part to recover slowly from the storm. The small arm is the last to perish; it remains in strength while the large arm is dying away; but soon the outward spread carries it in turn to the upper margin of the field, and it there exhibits the same fervour that characterised the career of the larger end. The whole duration of the phenomena is just half an hour, often with curious exactness. The sight feels somewhat dazed for ten or fifteen minutes after the final disappearance of the phenomenon. Throughout the earlier part of this visual derangement I feel no discomfort at all; my faculties are free to observe the phenomena closely and carefully. It is not till near the end, when the boiling is at its height, that the eyes feel oppressed, and the head has a presage that it is going to ache. The headache comes on gradually; it is not localised in any particular part; it lasts for five or six hours or more, accompanied with slight nausea."

Sir C. Wheatstone says: "This evening I had a curious affection of vision. Whilst I was writing, characters near the centre of vision became invisible. Thus, on fixing my eyes on figure 6 in the group 4^g, 4 and 7 were completely obliterated. After a short time, the spot became

* See Illustrations, *loc. cit.*, Plate xxv.

larger, spreading towards the left in both eyes until it occupied a large oval space. . . . The only difference between the phenomena, as they appear to me and as they are described by Dr. Airy, is that in my case they are always unaccompanied with colour."

You will notice from these descriptions that there are different ways in which this stage commences; viz., either by a glimmering near the outside corner of the field of vision, or by a glimmering near the middle of the field of view, or by objects at or near this point becoming obliterated. Again, in some persons the phenomena are accompanied with colour; in others this is not the case, the fortification outline only being somewhat luminous. In others, again, in slight attacks there is no colour, but in the more marked ones colours are seen not only at the outline, but generally vibrating over the field of vision; and in still more decided attacks numerous stars are seen floating in all directions. Another very important point about these attacks is, that in perhaps from one-fourth to one-third of the cases during this glimmering stage, there is tingling in some portion of the body—the part is *asleep*. In a young female that I saw, the tingling affected one arm and the side of the tongue; and, curiously enough, both her sister and her father were affected in precisely the same way. The tingling was on the *same side* as that on which the glimmering in the eye began. In another case, the patient complained of a feeling of pricking and scratching on that side of the face corresponding with the glimmering. In others, speech or hearing may be affected. The Astronomer Royal (*Philos. Mag.*, vol. xxx, p. 21) says: "In one attack on myself, which occurred while I was conversing with an acquaintance in a railway carriage, I soon became painfully sensible that I had not the usual command of speech—that my memory failed so much that I did not know what I had said or had attempted to say, and that I might be talking incoherently." In reference to another case, Dr. Airy says: "Sometimes the speech is affected and the memory at the same time; on one occasion the mouth was seen to be drawn to one side."

The last question I have to allude to about this vibrating stage is, Are both eyes equally affected? Dr. Airy thinks they are. Sir John Herschel says: "I have sometimes had an impression that *one eye only* was affected—the right eye being affected with the right-handed and the left with the left-handed spectrum; but I never could devise any means of coming to a conclusion as to this point, and on the whole I lean to the opinion that both eyes are concerned in either case." But a few months later he writes: "On the 16th ultimo, on waking, I found the 'fortification pattern' *certainly* in my left eye *only*, and much more vivid with the eye open and looking at paper than when closed." I think, for reasons which will be given when I come to explain the phenomena, that at all events at first and in slight attacks one eye only is affected, but that the "tremor and boiling are so oppressive as nearly to extinguish the corresponding vision in the other". Now this disturbance of vision is often associated with a feeling of chilliness, cold hands and feet, etc; it may last from five to thirty minutes or longer, and then be succeeded by the stage of headache, which shows itself as follows. When the vibratory movement is at its height, a little aching is felt in the head, on the side *opposite* to that on which the glimmering first appeared: it is slight at first, but gradually increases in intensity. Some persons have said that the sensation was as though a point in the temple were being bored with a gimlet, and the gimlet slowly increasing in size. The pain gradually spreads from this point, which may be covered with the finger, and pressure upon which affords relief, first over one side of the head, and then, but not always, extends to the other. As the headache increases, the ocular disturbance declines, nausea is felt; this increases with the headache; there are retching and vomiting, the latter sometimes, though rarely, giving relief; the head throbs; the slightest movement increases the pain; and any attempt to move from the recumbent posture increases the gastric uneasiness; the mouth feels clammy; the eyeballs ache, and are tender on pressure, one more so than the other; the pupils are rather contracted, and generally unequally so; the patient lies apparently more dead than alive; his face pale, and the head hot. After a varying number of hours he is somewhat relieved by troubled sleep; he wakes up next morning free perhaps from headache; but he is listless; his brain is weary, and he feels as if he had undergone a hard mental struggle. There may be now an interval of a few days, weeks, or years, before the disorder again shows itself.

The headache varies much in character, degree, and duration. In some persons the pain is not localised in any particular spot, but seems generally diffused over the head; others have not noticed that there is more pain on one side of the head than the other, or that the aching radiates from one painful spot until their attention has been directed to the fact, and then they distinctly recognise it; others, again, have neither vomiting nor nausea; and lastly, the duration of the headache may be

very short or not extend over more than two or three hours, or it may be entirely absent. The disorder may even stop short at the vibratory stage, the vision be restored, and no further inconvenience felt.

On the other hand, the headache may be, and in many individuals always is, developed without the ocular disturbance, but other sensations are substituted for it. The patient has a feeling of chilliness; the feet are cold, and there is mental depression; a dread of impending evil; he is restless and uneasy; "cannot quite tell", as he says, "what he would be at"; he has what is expressively called the "fidgets". This condition may continue half an hour or more, and then the slight boring piercing pain is felt in the head with which the aching begins, and the disorder runs its course as in the forms previously mentioned. In other cases, this feeling of depression or uneasiness lasts for several hours, the patient goes to bed, and in the early morning wakes with the headache fully developed.

I will now state the conditions under which this disorder shows itself. The great majority of persons who have come under my notice suffering from the headache were at the time more or less anæmic; there was a general want of tone—a relaxed condition of the muscular and the arterial systems, especially of the latter; the pulse being rather small and soft, often decidedly slow, but much accelerated on slight exertion or excitement. Even in those who were not anæmic and appeared robust, there was still this want of tone about the pulse. The sufferers possess what is called the nervous temperament; their brains are excitable, their senses acute, and their imaginations free. The attacks are induced by prolonged mental work, protracted mental excitement, or any intense strain on the feelings, such as grief, anxiety, passion, etc. Bodily fatigue, late hours, loss of sleep, the depression which follows over-excitement, a debauch, etc., are all predisposing causes; and it is curious that the attack is not generally developed during the paroxysms of mental excitement, but afterwards, when the excitement has passed off, and the mental strain is somewhat lessened. Again, in females, the attacks are more frequent at or after the catamenial period. Now, it is to be observed that all these causes, and causes like to them, are of a depressing nature; exhausting the powers and, therefore, lowering the tone of the system; putting it out of tune, disturbing the harmony in the functions, and, at the same time, exalting the susceptibility of the nervous system. What results? We possess, besides the cerebro-spinal system of nerves, a sympathetic nervous system, the ganglia of which can conduct, transfer, and radiate the effects of impressions; their power being controlled and regulated by the superior force in the cerebro-spinal centres. Let the general tone of the body be lowered, and with it the regulating power of the brain be impaired, then the conduction and radiation of impressions through the sympathetic ganglia are no longer interfered with, and, instead of tranquil, even, harmonious action in the various organs, as in perfect health, we have convulsive, excited, and painful movements. Let me say one word or two now with regard to the physiological action of the sympathetic nervous system. Its branches, constituting the so-called vaso-motor nerves, reach their ultimate destination supported on the large and small arteries, and control, in a remarkable manner, the action of the muscular coat of these vessels. If the sympathetic nerves distributed to any part, as for example, the neck of a rabbit, be divided, the small arteries of the corresponding side of the face and of the lining membrane of the external ear become dilated, blood accumulates in them, and there is an elevation of temperature. The retina becomes more sensible to light; the pupil, in consequence of the action of the oculo-motor nerve on the circular fibres, contracts, and a flow of tears takes place. If the distal portion of the cut nerve be now irritated by galvanism for a minute or so, the vessels contract so as to diminish their calibre, the radial fibres of the iris contract, and dilatation of the pupil takes place.

I shall now proceed to apply this to the disorder we have been considering, and to show first of all that we have *contraction* of the vessels of the brain, and so a diminished supply of blood produced by excited action of the sympathetic; and that the exhaustion of the sympathetic following on this excitement causes the *dilatation* of the vessels and the headache.

[To be continued.]

SUBLUXATION OF KNEE.

A GIRL aged 16, who did not look more than 12, had her right knee subluxated inwards while a stocking was being drawn on by a servant. Traction and rotation outwards, with pressure against the femur outwards, sufficed to replace the bones. In September last, the left knee was put out while the patient was getting up; and sixteen months ago the right one was deformed in the same manner, apparently, as on the second and third occasions, while the girl was walking.

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