

only of moderate strength, the patient cools. A pulse which under ordinary circumstances would have abundantly sufficed to maintain the temperature will not do so when the greater part of the body is paralysed. As you will see, however, I am all along taking for granted that the changes which result in the production of heat are less active in paralysed than in healthy parts—a point which still needs further examination.

I have yet to refer to one other difficulty, and I shall do so for the present very briefly. It will doubtless have occurred to many of you to ask how it is that the heart's vigour differs so much in different examples of apparently very similar lesions. We have sought to explain the remarkable differences in temperature by making the heart responsible; but how can we explain in turn the varying vigour of the heart? My reply is that the nerve-supply to the heart is known to exercise a most important power in restraining or depressing and in exciting its action; and thus there is nothing very improbable in the supposition that the cardiac nerves may be influenced in different ways, in relation with the precise position and extent of injury to the cervical cord and ganglia. I will not for the present go into detail, and I may admit that nothing has been proved as to peculiarity of site or extent of crush in the exceptional cases where the heart's action is depressed. This however, is, I feel certain, the direction in which we must work. In concluding this lecture, I cannot but recommend this subject to your further investigation. We want more detailed and accurate observations than have as yet been accumulated. This hospital offers a good field for collecting such; and if any student who is working for our Surgical Scholarship should incline to collect all the examples of injury to the cervical spine, and carefully give details as regards pulse, temperature, heart's action, position of paralysis, mode of death, and conditions found at the post-mortem, he might very probably furnish some data which would be of permanent scientific use.

Clinical Lecture

ON

TREATMENT OF HEADACHE FROM ORGANIC INTRACRANIAL DISEASE.

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THE human head is a very wonderful thing. I do not say that as a new discovery, but it is true in many ways; and when you are going to consider headache, you must consider shortly, first, what the head is.

There is no mystery about a leg or an arm. Sir C. Bell did really explain very beautifully and nearly completely all the mechanism of the hand, and what he left unfinished is quite within the scope of similar enlightened and ingenious inquiry. Even that curious song about the irrepressible mechanical leg of cork does not go far beyond the bounds of possibility. The leg and arm are levers and motive powers working under entirely comprehensible and almost imitable conditions.

But who could make a working model of a head? Consider how manifold is the composition of the head. All the great systems are represented in it; nay, in a sort they come in it to their highest functions. The alimentary system in the inferior fourth, with machinery and expression of appetite; the respiratory system in the next fourth, with mechanism and expression of passion; the nervous system in the upper half, with mechanism and expression of intelligence such as it may be; and, laterally, the ears, with highest governance of the locomotive system, as you will not doubt when a good tune keeps you marching or sets you dancing; so much are all muscular acts full of the sense of æsthetics of rhythm. And the mask of face, covering all

and taking its prevailing expression from the predominance of either.

Now, all these parts are built up of the common tissues, with their liabilities—bone with its liabilities, muscle with its liabilities, nerve with its liabilities, just as in other parts; besides special organs, such as the teeth, very subject to pain, and mucous membranes brought into exposed situations, and organised with especial delicacy, as, indeed, are all the common tissues used in forming the head.

And within it the brain and its membranes, sixty-four ounces (we will hope) of a richly vascular mass packed rather tightly in an unyielding case, yet swelling and falling in every pulse, and swelling and falling in every breath. And, though so sensitive to any deficiency of blood that its blanching produces at once faintness, yet placed up on the top of a column, requiring to be fed through narrow pipes against the constant drag of gravity, and drained sharply by the downward suction of the lengthy column of blood in the cervical veins. The blood forced up with such difficulty, and gliding down with such ease, that there is constant danger of the supply in the brain failing; to prevent which danger a means of retarding the stream within the brain is added, and itself tends to induce congestion, and so complicates the puzzled balance on which health and comfort depend. The mechanism of hæmal retardation in the brain is perhaps the most essential of those means by which we men are able to stand upright, or "maintain the erect posture," as the physiologists say; yet it has hitherto been entirely passed over even by Dr. Carpenter.

That is a very faint and feeble outline of the head, as concerns its liability to pain, and it is clear at once that for a thing so complex its pains could not all go by one name. Every pain in the head is not called headache; we have earache, and toothache, and so on, referred to special organs, and we recognise neuralgia, sore bones, &c., belonging to the liabilities of the component textures. Excluding both these sorts of pain within the scope of the head, pains so special that they at once refer to a special part, or so general that they obviously might equally belong to the leg or arm, or any place where nerve and bone and muscle exist, there remain pains of the head which put all the head into such misery that popularly in all languages men call them headaches *par excellence*, and even in very childhood they are recognised as quite special. Some of you will remember the poor little thing in the Clinical last year, who, only seven years old, and having tubercle in the brain, said it wasn't headache he suffered from, it was *pain in the head*. Pitifully accurate pathometry for such a time of life.

Now these headaches, which are not pains in the special organs of the head nor in the general textures of the head, but are aches of the head itself, have been a good deal written about in a semi-popular sort of way; opinions about them in plenty have been given, opinions which express not the knowledge of the opiner, but his sense that there is a good opportunity of saying something advantageous, whereof his conscience is almost the only check, and the pay he gets is quite the only reward—a very ordinary sort of medical opinion. Every old woman, or nearly every old woman, is an authority on headaches in this general way. Indeed, it is not easy to find any other good authorities upon them. Niemeyer does not even name headache in the index of his very admirable work; and Dr. Russell Reynolds, who has separate writers on all the sorts of convulsions in particular, and another writer on convulsions in general, the harmony of which chorus of writers reminds you irresistibly of that other select medical concert at Mr. Sawyer's, where "every gentleman sang to the tune he knew best,"—even Dr. Russell Reynolds has no writer on headache. Indeed, it is not easy to get good guidance on the subject. I went to the library of the Medico-Chirurgical Society, and two other books being out—which, I presume, implies a demand on the topic—I could get only a little book of the late Dr. Wright, one of a small popular series. This little book arranges headaches in synopsis in a way more complete than I would pretend to do, so I will put the scheme before you:—

A. Headaches of childhood and youth.

B. Headaches of adult life.

1. Dependent on the circulating system.

a. Plethoric { Occasional.
 { Persistent.

b. Congestive.

2. Dependent on the digestive system.
 - a. Headache of indigestion.
 - b. The sick headache.
 - c. The bilious headache { Accumulation of bile in the system. [bile. Exuberant secretion of
3. Dependent on the nervous system.
 - a. The ordinary nervous headache.
 - b. The hysteric headache.
 - c. The headache of extreme exhaustion and debility.
 - d. The megrims.
 - e. Brow-ague.
4. Rheumatic and gouty headache.
5. Headache dependent on organic disease.
- C. Headaches of old age.

To be able to conceive or even actively adopt such a division of headaches is a mark of a very clever man; and something equivalent must be done by every one of us who succeeds in practice. To distinguish in some sort between a nervous headache and a bilious headache and a congestive headache and a sick headache is, in a way, to learn to know the patient's constitution, as it is called. The more actively-used mixtures in an ordinary surgery might be labeled according to the several kinds of headache to which they are suited and correspond. But all wise and practised doctors keep in view these two truths: firstly, that a headache occurring as a thing new and strange to the patient at any time of life needs to be considered with care, lest it be the onset of some acute illness; while, secondly, a chronic headache requires that you get the best knowledge you can of the patient's habits of life; and while endeavouring with proper medicines to bring the excretions into order, and with diet and exercise to regulate the daily life into conditions favourable to healthy nutrition, you should take care that whatever avocation or indulgence is exercising a bad effect is brought under restraint, directing change of scene, of pursuit, of amusement, according to necessity; and all this without meddling or prying, or otherwise going beyond your proper sphere as medical adviser. Your tact and capability of knowing and guiding human nature of different degrees of culture will find its level in this process. I say that the recognition of all these kinds of headache obtains its significance only so far as the headache is part of a general condition. The patient is plethoric, or congestive, or dyspeptic, or bilious, or nervous, or hysteric, or exhausted, or rheumatic, or gouty; and his headache is just that part of his ailment which most presses itself on his and your notice, serving as an introduction to and a gauge of his plethora, dyspepsia, bile, &c.; and, in curing him, you have to take up the management of the states indicated—management too various to form the subject of a parenthesis in my lecture.

But in Dr. Ringer's book on Therapeutics you will find some very certain and simple charm-cures for some very complicated headaches. And if you master the difficulty that the absolute certainty of the cure is precisely balanced by the absolute impossibility of being sure you are dealing with the right case, with such elaborate vagueness is it characterised, it appears you may have surprising success with a few minims of this, that, or the other. But the headache I have to bring to your notice is of a different kind from all this sort of symptomatic headache. It is the headache of organic disease within the cranium. You see Dr. Wright put it in his synopsis as one among several varieties of headache. Such a view underrates its importance. It stands alone in contrast with all the others. They all might be grouped together under great Alpha, constitutional headaches, and thus stand alone under great Beta, the pain of organic head-disease. The organic causes of great headache are never diseases of the proper nervous tissue, but always diseases of its enveloping textures. I don't want, however, to draw you off on such a hypercritical subtlety, but to urge on you the vast practical importance of being able to discern quickly when you are dealing with the headache of organic disease within the cranium. For if you meet with such headache, certainly if occurring in any person in the earlier decades of adult age, your duty is at once most important; you must immediately give large doses of iodide of potassium. By doing so you will, in a large proportion of cases, save sense, mind, or life. I would particularly impress this duty upon you, and if I speak strongly, that

is because there rise up to my recollection the large number of persons I have already seen blind, squinting, palsied, agonised, or even dead for want of iodide of potassium. If I were an examiner in medicine I should ask a candidate "What would you do if a young adult came to you with signs of organic disease within the cranium?" and if he did not say he would at once give iodide of potassium I would send him down for three months to think it over. If reflection made me reconsider my determination it would be because your text-books fail so signally in their duty in inculcating this practice. You find at best a feeble suggestion of the propriety of sometimes giving the iodide. Thus, even in the system of large books on medicine, Drs. Russell Reynolds and Bastian, at the tail of a protracted article upon Adventitious Growths in the Brain, speaking of the treatment of such growths, say if you believe there is syphilis you should give iodide; and turning to their remarks upon syphilitic formation in the brain, you find they tell you it is easy to know them, and that there are the signs of syphilis in the skin and bones, &c.

Such teaching would never inform you that many, nay, most of the persons with organic brain-disease that come before you curable by iodide of potassium, not only deny syphilitic history, but show no trace of syphilitic disease of the skin and bones. Syphilis, you should know, will in one person affect one system, in another another. I have met with a syphiloma as big as a potato in a man's liver when his skin and bones were free entirely from any trace of the disease, and time after time I have found iodide of potassium cure quickly men who already had been allowed, under medical care, to pass through weeks of dreadful headache, and come squinting or epileptic to seek further relief. Whether it be that iodide of potassium will cure things not syphilitic, or whether it be that people on the point of death by syphilis will persist in denying that they were ever tainted with it, I don't know; but of this I am sure, that persons who have neither history nor sign of syphilis will come before you with organic headache curable by iodide of potassium. Acres of detail on the varieties of tumour-micrology become worse than frivolous beside an ignorance or a faulty grasp of this truth. The number of real cures you will effect is not so great as to lead you to slight this. Think, too, of the horrible way of dying in such cases, and the necessity of relief will stand out bold in the blackness of its shadow, even if the light be not bright. But how can you discern when a headache is organic? Well, I don't think that the least experienced of us would have had much doubt that the headache suffered by the unfortunate man in 15 Clinical was organic. If I tried to say shortly what I believe would have convinced any one of us, it is that the man was so entirely overwhelmed, prostrated, agonised by it. In other words, the pain so implicated the action of his brain that it preoccupied all his faculties, and it was difficult to draw his attention out of the pain to answer any question. He was so wrapt up with his pain that he appeared partially insensible, and he staggered as he walked, and he hurried to lie down, and lay writhing and groaning. His friends say that he seems mad with the pain, and that he frequently calls out "Oh, my head!" His history shortly is this:—

E—, a railway guard, aged twenty-five, coming of a healthy family. He is married, and always had good health until four years ago, when he had a venereal complaint, with chancre, and was for some months ailing. Since then his wife miscarried twice, and had one healthy child. He has never been quite right since the chancre. But in September last he was taken in the night with insensibility, lividity, and foaming at the mouth. On recovering his senses he complained of intense headache, which has continued more or less ever since. In two months from the attack, however, he went to do some duty as railway porter; but he suffered much, and staggered and tumbled about at his work. Three weeks ago he grew worse. He was admitted to the hospital with the intense pain I have described. In a few days a slight squint was noticed, and some degree of facial paralysis soon after. Then the patient began to pass his excretions involuntarily, the pulse became slow, and he fell gradually away into coma, with partially lucid intervals; in which state he is at the time of lecture.

Now, I do not mean to say that you never find anyone very seriously disturbed by headache of a less grave sig-

nificance; indeed, you may meet with much distress from headache of a very innocent nature—such as megrim, or the sort of headache with luminous phenomena described by Dr. Hubert Airey in the Transactions of the Royal Society, under the name “teichopsia.” For a little pain may put so large a proportion of the person into pain. The whole of some people stoops to such a little pain. But even if the pains then appear overwhelming you yet can be guided by the degree in which you succeed in drawing him off from the pains by getting his attention and giving your sympathy—an important aid in diagnosis; for the man who is only looking at the scientific bearings of his patient’s symptoms as if he were watching a fermenting mixture may fail to see the gravity of a case when it is plain to all the friends that “he is more ill than the doctor thinks”—a remark which discredits not only the doctor’s skill, but his good nature.

Yet it is far more by its associations than by its severity that one would conclude a headache to be organic.

Perhaps a convulsive attack, as in our case, will accompany the headache. The occurrence of convulsion is alarming enough at any time, but when associated with the grave and unusual headache I have been speaking of it ought at once to induce you to give the iodide. I don’t mean that you should not give it unless convulsion exist. Convulsion is not constant in cerebral syphilis. Or you may find vomiting, which, when associated with persistent headache, is a grave sign of organic brain disease in its irritative stages. Headache and sickness would sum up into sick headache, and sick headache is in Dr. Wright’s synopsis of constitutional headaches; but it is not so difficult to distinguish from the headache and sickness of organic brain disease as you might think. The vomiting of cerebral irritation is not accompanied usually by the foul tongue, flatulence, and full abdomen which you find in primary gastric disorder. It occurs chiefly when the patient rises up, and especially in the morning time after his night’s rest, and it often is neither preceded by the nausea nor succeeded by the relief that are associated with the act of vomiting in sub-gastritis. But vomiting is in some cases a very prominent symptom, and constipation is frequent, so that I have known strange errors last for a time. Thus I met a careful practitioner over a case he thought to be intestinal obstruction, but it proved to be tubercular meningitis.

Another thing important to notice is the expression of the face, especially of the eyes. You will see them, when the cerebral irritation and pain are severe, look queer. There is a deeply abstracted, puzzled frown, the brows contracted, pupils large, and a little too much crossing of the optic axes, giving a trace of squint. Poor E—— showed this very well the other day, even at a time when he said he had no headache. He had quite a characteristic cerebral face. Next, the squint may become very evident, and perhaps ptosis supervene. Sometimes the squint will be reduced completely while the patient fixes sight on an object, the eyes relapsing into squint as soon as attention fails.

Then facial palsy is apt to show itself, or some paralytic condition of the limbs. It strikes me to remark that it is commonly said that in paralysis of the facial nerve from central disease the mouth is more affected than the eye, while in facial palsy from disease of the nerve the eye and mouth suffer equally. Now, though this statement goes from author to author, I believe that it is entirely erroneous, and has arisen through the simple fact, first, that central paralysis is slight in degree, and, secondly, that the mouth is dependent for its symmetry on a balance of the facial muscles, whilst the eye is not, so that the slighter degrees of facial palsy, due to central disease, easily reveal themselves by distorting the mouth, while they do not disturb the eye so evidently. In the case of E—— I showed you that the orbicularis palpebrarum is really as much affected as the orbicularis oris.

As the case progresses, signs of oppression, leading to coma, will come on, through effusion in the ventricles usually.

These are the phenomena general to all organic brain disease, but in all the headache is not so severe. Besides these signs there are other features in each case by which you may be able to judge of the particular kind of organic disease present.

Thus a rapid course or otherwise, constancy of symptoms or otherwise, pyrexia, rigors, the existence of causes of sup-
puration, of tubercle, of cancer, &c., any of these may guide

you to a correct inference as to the particular organic change present. But what I want to impress upon you is that you must by no means wait until you have reason to believe there is syphilis before you give iodide of potassium. Your belief has nothing to do with it; your duty is to give the iodide at once. No one is ever hurt by iodide of potassium in doses of a drachm a day. All the symptoms of so-called iodism sum up in some nasal annoyance, and perhaps a rash on the surface, quite trivial in their real importance. If the patient has tubercle or cancer, or hydatid or aneurism, &c., he will die, iodide or no; but you can make sure he does not die of syphilis, or whatever more obscure organic changes are curable by the iodide, and it is your duty to do so in all cases, seeing that the iodide is harmless. I have so far spoken as if iodide of potassium were the only and sufficient cure for intracranial syphilis. But such a statement of the anti-syphilitic powers of the iodide is really neither more nor less true than it would be to say that the iodide will in all cases cure every so-called tertiary manifestation of syphilis. But you know that in some cases of tertiary disease in the skin or muscles you find it necessary to have recourse to mercury, the iodide proving inefficient. The same is true as to intracranial syphilis; if iodide does not cure your patient, it is necessary to try the use of calomel vapour baths or of inunction.

Another thing in reference to the treatment by iodide which you should notice is that for the first two or three days of its use the patients sometimes may appear the worse for taking it. Thus a woman in Petersham ward last summer, who had intense headache and paralysis of the right side of the face, right arm, and leg, suffered more and appeared much worse for the first few days under half-drachm doses of the iodide, but the remedy being persevered with, she left the hospital quite recovered in a month.

When in a case of the intense headache of organic brain-disease you find specific treatment of no use, and it is plain that some incurable tumour exists, and if the patient is suffering excessively, the question arises, what can be done for relief? If the pain were in the thigh, you would inject morphia subcutaneously, and thank Dr. Alexander Wood for the relief you can thus afford. But dare you do so if the head be affected? This is a question which can only be solved by practical experience; all the therapeutical reasoning that ever will be able to be brought must necessarily fail entirely to solve it. You cannot tell beforehand; you must try it. Drs. Reynolds and Bastian do not mention morphia amongst the means of lessening the pain; they recommend Indian hemp. But with this I have never been fortunate enough to give any relief. Ice, which alone they also recommend, sometimes soothes, sometimes aggravates the pain. As in poor E——’s case, no relief was obtained from the iodide, and as his sufferings were so great, I ordered one-fifth of a grain of morphia to be injected subcutaneously. The result was that he passed a quiet night and was decidedly relieved by the injection, though the pain returned next day. I have employed the same means before under the like circumstances, and the conclusion I have come to is, that if care be exercised in the judgment of the dose, no improper risk of insensibility will be run in the use of morphia in these lamentable cases. Only you must remember one thing, and that is that coma often supervenes rather unexpectedly in organic brain-disease, and you may be blamed for an occurrence which was in the nature of the case. This would induce caution as to the period of the disease and the general circumstances in which you would use the morphia syringe; but having repeatedly found it give great relief and bring no ill-result, I should consider an unwillingness to employ it rather a sign of timidity at the consequences to oneself than to the patient.

In E——’s case no improvement had occurred from the use of the iodide, and, the symptoms becoming very urgent, calomel vapour baths and mercurial inunction were ordered. But the man sank within a few hours after a single bath. At the inspection we found an immense effusion of serum into the ventricles, which had been the immediate cause of death; but causing this effusion was a patch in the pons, at the floor of the fourth ventricle, having all the characters of syphilitic formation—that is, an irregular greyish transparent blotch, undefined in its exterior towards the brain-tissue, and having a caseous central area. Evidently from this case we learn that the anti-syphilitic treatment, however vigorous, may come too late.