An Address

ON THE

TREATMENT OF SOME OF THE SEVERER FORMS OF HEADACHE.

DELIVERED BEFORE THE TOTTENHAM DIVISION OF THE METROPOLITAN COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION, MAY 29TH, 1908.

By WILFRED HARRIS, M.D., F.R.C.P.,

PHYSICIAN TO OUT-PATIENTS, ST. MARY'S HOSPITAL, AND TO THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE.

For the man whose interest in the treatment of headache does not cease with a dose of phenacetin or potassium bromide, it is useful to attempt some form of working classification of the causes of headache, inasmuch as the recognition of the cause of this symptom goes a long way towards indicating the appropriate treatment. Clinical grouping according to the situation of the pain or its character is altogether unsatisfactory and misleading, and I have arrived at the following anatomical classification of my own after careful consideration:

A. Superficial	1. Diseases of the Brain Coverings.
	(a) <i>Scalp</i> —for example, cellulitis; weight of hat or mass of hair.
	(b) <i>Pericranium</i> —for example, rheumatic.
	(c) <i>Bone</i> —for example, tuberculous or syphilitic caries.
B. Deep	2. <i>Reflex Visceral Neuralgias of Scalp</i> .
Ocular, dental, pulmonary, cardiac, gastric, etc.
	3. <i>Reflex Cortical Neuralgia</i> .
Visual "academy" headache; thunderstorm; neurasthenic.
	4. <i>Toxaemic</i> .
Constipation and sluggish liver; influenza and other fevers; foul air; alcohol; ether.
	5. <i>Increased Intracranial Pressure</i> .
Cerebral tumour and abscess; acute encephalitis; hydrocephalus; cerebral haemorrhage; cerebral oedema in chlorosis and arterio-sclerosis; sinus thrombosis; meningitis; tight neckband; migraine; epilepsy.

The brain substance itself appears to be insensible to ordinary tactile or painful stimuli, and the actual mechanism of the production of the pain in headache is mainly by means of painful stimuli to nerves supplying the coverings of the brain or its vessels.

DISEASE OF BRAIN COVERINGS.

In the first group, diseases of the brain coverings, the nerves of the scalp, pericranium, or bone are irritated by the morbid process, and thus carry painful impressions to the sensory centres.

REFLEX VISCERAL NEURALGIAS.

In this group the morbid process affects the nerves of one of the viscera at a distance, such as the branches of the fifth nerve in the eye, from chronic strain of the ciliary muscle in errors of refraction, or painful stimuli from iritis or glaucoma. In this case the painful stimuli reaching the Gasserian ganglion and sensory nucleus of the fifth nerve set up irritability of other parts of this sensory centre, so that other skin areas supplied by the fifth nerve become tender and appear to be the source of the pain—a true reflex visceral neuralgia, as Head many years ago described. Thus the supraorbital pain or headache from errors of refraction such as slight astigmatism is well known; also the temporal pain of iritis and glaucoma, and the tender areas in the region of the ear and temple from carious teeth setting up reflex dental neuralgia. Even diseases of the thoracic organs and the stomach may set up reflex neuralgia of areas supplied by the fifth nerve, with superficial tenderness, through the agency of the pneumogastric nerve and its cerebral association with the trigeminal or great sensory nerve of the head.

Of the causes of headache within the cranial cavity, the true neuralgic headaches, such as the neurasthenic, or that produced by dazzling of the eyes, various emotions, a thunderstorm, etc., are probably true neuralgia of the cortical sensory centres, and are best relieved by rest and

anti-neuralgic remedies, such as phenacetin, pyramiden, and that class of drug.

TOXAEMIC HEADACHES.

This is a very important group, but the exact mechanism of the production of the pain is obscure. In some instances, such as those occurring in fever, small-pox, enteric fever, influenza, malaria, etc., increased intracranial pressure owing to vascular turgescence very probably plays no inconsiderable part, while very probably the headaches produced by taking alcohol or by breathing air smelling of ether are also in part due to this same arterial engorgement. Constipation and sluggish liver are a well known cause of headaches, which may occasionally take on a periodic recurrence, with vomiting for several hours, highly suggestive of migraine. These patients know that their headaches are dependent on constipation, and frequently take "liver pills," but unless a regular daily habit of the bowel is established by means of daily saline laxatives, the headaches will recur as usual. These headaches are usually preceded for a day or two by a heavy odour of the breath, slight yellowness of the conjunctiva, and light coloured stools.

INCREASED INTRACRANIAL PRESSURE.

This is of all causes of headache the most important, and the cause of the most severe and persistent pain. Rarely is headache so severe as to keep a patient awake, unless due to one of the causes of increased intracranial pressure. In cerebral tumour there is general increase of pressure from the growth, and also in some cases, such as cerebellar tumours, by obstruction to the outflow of the cerebro-spinal fluid. The headache in cerebral tumour is, therefore, likely to be diffuse, or varying in its site, and of little use for localizing purposes. If, however, the tumour involves the cortex and the membranes, then the headache is likely to be persistent at one and the same spot, for days at a time, and there is in addition a sign of the utmost localizing value, definite tenderness elicited on firm pressure on the scalp directly over the site of the growth. During the last twelve months I have had four cases, three of endotheliomata growing from the membranes into the cortex, and another of superficial cortical abscess, in which this symptom of tenderness on deep pressure was of the utmost value in deciding the site for the trephine opening. In each case the lesion was found immediately under the spot indicated, rendering possible the complete removal of the endotheliomata, which are encapsulated growths, and the evacuation of the abscess, followed by complete recovery in each case. In two of the tumour cases, one frontal and the other parietal, there were no motor or sensory symptoms to serve as guides to which side of the brain was affected; the persistent localized pain and tenderness on pressure was the only localizing point.

In another case of acute serous meningitis in a young girl with intense optic neuritis, all developing rapidly within three weeks, this same symptom of localized persistent pain and deep tenderness in the left posterior frontal region decided me to have the skull opened at that spot. As soon as the dura was opened the brain bulged through the trephine hole from the intense intracranial pressure, without any pulsation. Pricking with the point of the knife the perivascular space around an engorged cortical vein caused a gush of blood-stained fluid to the amount of 2 or 3 oz., while the brain gradually subsided and commenced to pulsate naturally. Her recovery was uneventful, though the discs now show slight signs of post-neuritic optic atrophy.

Meningitis is one of the causes of the most severe form of headache, and this is easy to understand, because the pain is produced in two different and distinct ways; First, the inflammation of the meninges involves the nerve endings which supply it; and secondly, the result of the inflammation is an oedema of the cortex, causing it to swell and increase the intracranial pressure; whereas at the same time in acute meningitis of the pia arachnoid there is an excess of cerebro-spinal fluid in the lateral ventricles, owing to its normal means of escape from the foramina at the base of the brain being blocked. This sets up an acute hydrocephalus, greatly raising the intracranial pressure and causing intense headache. Relief to this headache may be afforded sometimes immediately by

means of lumbar puncture, or by means of leeches applied to the temples or back of the ears.

The headache in cerebral syphilis is one of the most intense, often keeping the patient awake at night, while relief is not always brought about at once by even large doses of iodide and mercury; it is not until the oedema of the brain and excess of cerebro-spinal fluid resulting from the meningitis has been got rid of that the headache subsides.

In arterio-sclerosis from contracted granular kidney equally severe headache is common, lasting for weeks, and usually vertical or occipital. Both in this condition and in anaemia, which is also a cause of headache, there is cerebral oedema, raising the intracranial pressure, and the drug that gives the quickest and most relief to the pain is often nitroglycerine. This drug is somewhat uncertain in its effects; sometimes it may cause proportionately greater flushing of the meningeal vessels than of the general periphery, so that the headache may be aggravated instead of improved. Leeching then to the temples or mastoids would probably be more efficacious, or even a free venesection at the arm. The extent to which free bleeding diminishes high intracranial pressure was clearly demonstrated to me a little while ago during the two stages of an operation for cerebral tumour. It was one of the cases of cortical parietal tumour I referred to just now, but the bone at this spot was so excessively thick and vascular, that by the time sufficient bone had been removed the patient had lost such a large amount of blood that she had become blanched and was in considerable danger, requiring intravenous injection of saline. The dura underneath the trephine opening then felt quite soft and normal, not hard and tense, as it usually does in cases of tumor cerebri. The second stage was not done until seventeen days later, by which time she had quite recovered from her shock and anaemia, and after reflecting the flap of scalp the dura was found to be exceedingly tense, and, as soon as this was incised, the tumour, a soft endothelioma, weighing 2 oz., presented in the wound, forcing its way out owing to the greatly increased intracranial pressure behind it.

Intolerable headache, optic neuritis, convulsions, coma, and death may be produced by a loose fibroma in the lateral ventricle, acting as a plug, and blocking up the foramen of Monro, thus preventing the escape of cerebro-spinal fluid. The plug sometimes becomes loosened, with immediate improvement and disappearance of the symptoms. I have had recently a case I believe to be of this nature in a man who, for the last nine years, has been subject at long intervals of many months to attacks of raging headache which, if not relieved, passed on into delirium. In his first attack his doctor, after seeing the symptoms steadily growing worse for twenty-four hours, applied leeches to his forehead and temples, a treatment which was quickly successful in relieving him, and in the nine attacks he has had in the nine years, no treatment influences the pain except leeches, which have never failed quickly to cure the headache. This is unlikely to be a case of recurrent serous meningitis, and I feel convinced that the attacks are due to some mechanical blocking to the exit of cerebro-spinal fluid, which is put right by the lowering of the intracranial pressure as a result of the leeching.

MIGRAINE.

True migraine is the most important and the commonest of the causes of periodic headache, and I have been gradually forced to the conclusion that the actual cause of the severe pain in the head is raising of the intracranial pressure, and that the headache, while it lasts, is precisely similar both in its mode of origin and general characters to that met with in cerebral tumour. The commencement of an attack with sudden hemianopia, or with general dimness of vision of both eyes, often followed by numbness and tingling in the tongue and cheek, or one arm, perhaps accompanied by temporary aphasia, is most suggestive of sudden arterial constriction on the cortex, sometimes unilateral, sometimes on both sides. During this preliminary period, which lasts from ten minutes to half an hour, there is no trace of headache, but only symptoms of interference with the cerebral functions, such as confusion of ideas, visual auras, and sometimes olfactory or even psychical auras. Presently, headache commences, often

on one side at first, but more usually over the whole head eventually. Primary arterial spasm in the brain is further suggested as the initial event in migraine by the visible narrowing of the arteria centralis retinae, as has been seen with the ophthalmoscope, and also the general pallor of the face and neck. Later, with the headache, flushing is common, with forcible throbbing of the carotid on the side of the commencing headache, with now a dilatation of the arteria centralis retinae. The intense headache usually lasts several hours, and is often accompanied by vomiting, which symptom is one of the most characteristic signs of raising of the intracranial pressure. The vomiting may occur within an hour of the commencement of the attack, but more usually it is delayed until near the end. In other cases the sickness may continue for hours, bringing no relief.

It is common knowledge how unsuccessful we are in relieving true migraine by the ordinary anti-neuralgic remedies, such as antipyrin, phenacetin, and similar drugs. What partial success they achieve in a few cases is, I believe, due to their depressant action upon the heart, thus lowering the general blood pressure, and for this comparatively large doses are required. Each and every one of them has had its advocates for the relief of migraine, but I am convinced that the cases which are quickly and certainly relieved by this class of drug are neuralgic headaches, not true migraine. I hold that the pain in migraine is produced by an increase of the intracranial pressure, brought about in the first instance by arterial dilatation of certain cortical and meningeal areas, a vascular dilatation which succeeds the primary vaso-motor constriction which surely occurs in this disease.

To relieve the pain of migraine we must apply remedies which will lower the intracranial pressure, proceeding upon the same lines as we should for the relief of the headache in cerebral tumour or acute meningitis. We may divide our available remedies into two classes:

1. *Local*, trephining and opening the dura; lumbar puncture; leeches to the scalp; fomentations, hot bottles, or icebag to the scalp and neck.

2. *Indirect*, by lowering of the general blood-pressure, Nitroglycerine and the nitrites; cardiac depressants such as opium, aconite, chloral, phenacetin, antipyrin, and other coal-tar analgesics. Purgation, diaphoresis, hot bath.

The operation of trephining has, I believe, never been done for the relief of migraine, though I have known it done several times for the cure of neurasthenic headache. I believe the operation would be justified in those severe cases of frequently recurrent migraine, in which the unfortunate patient is prostrated for one or more days every week or so by the intense headache and sickness. Before this is seriously thought of leeches to the scalp should be applied at the commencement of the headaches, the patient given 10 grains of Dover's powder, with a hot drink containing one-sixth of a grain of pilocarpin. The patient should be kept lying down, warmly wrapped up, so as to promote perspiration, and under this treatment I have seen great and speedy relief afforded.

THE VALUE OF DIMINISHED CARDIAC DULLNESS IN THE DIAGNOSIS OF CANCER.

By W. GORDON, M.D., F.R.C.P.,

PHYSICIAN, ROYAL DEVON AND EXETER HOSPITAL; PHYSICIAN, WEST OF ENGLAND EYE INFIRMARY.

THREE years ago I described¹ a diminution of the cardiac dullness in the recumbent posture, which occurs in some cases of cancer, and I suggested that it might prove of value in diagnosis. Further experience has justified this suggestion, and I now bring forward a series of cases in which the size of the cardiac dullness has been noted and the after-history ascertained.

These cases, 103 in number, have all been such as to raise, in greater or less degree, the suspicion of cancer, and in all of them the reduction of the dullness, or the absence of reduction, could not be fairly accounted for by ordinary causes; thus emphysema of the lungs and any cause of retraction of the heart could be excluded when the dullness was diminished; and the existence of albuminuria, of heart disease, of adherent pericardium, of lung retraction, and of anything tending to force the