certain fevers and intoxications, cerebral and spinal tumours, epilepsy, paralysis agitans, cerebral softening). According to the literature an increased sugar value has also been noted in acute poliomyelitis, dementia praecox, general paralysis and syphilitic meningitis.

The authors believe, however, that an estimation of the spinal fluid sugar may be of value in differentiating epilepsy from hysteria, and meningitis from meningismus. In meningitis, examination of the spinal fluid sugar from day to day may be a prognostic aid, a return from a low figure to normal being a good omen.

M. C.


The basal metabolic rate was determined in 47 cases of postencephalitic syndrome. Of these 53 per cent. gave a plus reaction, seven per cent. a minus reaction, while 40 per cent. were within normal limits. At the same time other vegetative disorders such as obesity, polyuria, etc., were noticed. The explanation given is that there is a complex system of vegetative centres controlling both sympathetic and parasympathetic activities in the midbrain and basal ganglia, and that varying lesions destroying or obstructing, now one path or centre and now another, account for the variations in the symptoms.

R. G. G.

SENSORIMOTOR NEUROLOGY.

[143] Tumours of the frontal lobe (Les tumeurs du lobe frontal (abcès exceptés) : contribution à l'étude clinique de ce lobe.)—P. ESCUDER NÚÑEZ. L'Encéphale, 1926, xxi, 37.

The author reviews the literature dealing with the symptomatology of frontal lobe tumours and describes two fresh cases, one a case of glioma of the right frontal lobe, with a smaller tumour of the left temporal pole; the other a case of hydatid cysts in the left frontal and the parietal lobes. Of the many symptoms considered to be to some extent diagnostic of tumours of the lobe the author lays special stress on deviation of the head and eyes to the side opposite to that of the tumour, or paralysis of conjugate deviation of the eyes to this side. Of the psychic changes the most striking is "hyperexcitation of the imagination," which over-rides other faculties such as memory and attention and often leads to an irrepressible optimism. One proof of this hyperexcitation is an exaggerated response to pinprick, only present when the patient watches the pin. It often leads to alterations of conduct, such as
dirty habits and rudeness of speech; urination in bed, on the floor or in public is common. (The author applies the Spanish word "atolondramiento" (thoughtlessness) to this condition). This excitement of the imaginative faculties, or "psychical epileptoid state," is a symptom of the earlier stages, and later gives place to a condition of psychical inhibition, somnolence, despondency, dulness, stupor; finally a kind of coma vigil sets in to which Milian gave the name of frontal coma.

J. G. GREENFIELD.

[144] Cerebral tumour [glioblastoma] with early psychasthenic syndrome

(Tumeur cérébrale (glioblastome) avec syndrome psychasthénique initial).—L. MARCHAND and P. SCHIFF. L'Encéphale, 1926, xxi, 121.

The case described is that of the capable manager of a factory, who developed a tumour in both frontal lobes and the inferior part of the genu of the corpus callosum. The first symptoms which he presented were progressive slowing down of intellectual activity, melancholy, anxiety, scrupulosity, obsessions of doubt, a mania for order, and intellectual fatigability. He also had occasional conscious incontinence of urine, and sometimes attacks of trembling. Nocturnal attacks of headache, sometimes associated with vomiting, came on later. Apart from a doubtful congestion of the left optic disc he presented no objective signs of disease. The diagnosis of cerebral tumour was, however, confirmed by the results of lumbar puncture, which showed a greatly increased cerebrospinal fluid pressure. A right frontal craniotomy was performed without a tumour being discovered. He developed a cerebral hernia and died five months after the operation.

The tumour was found to involve the greater part of the anterior half of the left cerebral hemisphere from the cortex to the anterior third of the thalamus. It passed across the middle line by the inferior part of the genu of the corpus callosum and surrounded the anterior part of the right lateral ventricle.

Histologically the tumour was a glioma of a mixed type presenting in some areas huge fibrous astrocytes and in others masses of undifferentiated rounded or elongated cells.

The case is of interest as a contribution to the clinical syndrome of tumours of the frontal lobes and corpus callosum.

J. G. GREENFIELD.


The patient was a man of 67 who developed a right hemiparesis and some eighteen months later had an attack followed by loss of appreciation of words, sounds and melodies; these symptoms remained unchanged to the date of
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his death, after two more years. The clinical condition, more exactly, was as follows: intelligence conserved, with full insight into his own condition; hearing normal on both sides; understanding for speech practically lost, with minor exceptions: repetition of words impossible, or nearly so; spontaneous speech relatively quite good, with occasional paraphasia; reading aloud, and understanding of written speech, normal; spontaneous writing quite intact (left, mirror writing); inability to write to dictation; appreciation of melody greatly interrupted; mild auditory agnosia otherwise.

The pathological examination, conducted in full detail, gave a paraventricular softening in the left hemisphere, extending along the outer aspect of the ventricle from the posterior end of the capsule backwards; softening in the claustrum and in the gyri of Heschl, involving the white matter underneath the posterior third of the first and second left temporal gyri; the cortex of the latter was intact.

This case is of very considerable scientific interest, in view of the pureness of the clinical word-deafness and the smallness of the temporal lesions, to which with ample justification the authors attribute the speech defect.

S. A. K. W.


The authors have here recorded a number of observations bearing on the difficult symptom of so-called tonic innervation, or inability to relax a given voluntary innervation once it is initiated. They have found this phenomenon in various cases exhibiting, in addition, symptoms of an extrapyramidal kind, with pathological changes in thalamus, corpus striatum, or frontal cortex, or in both cortex and basal ganglia. They are of the opinion that factors of an unconscious kind, as well probably as a psychical component, should be taken into etiological consideration. They cannot say what cerebral, non-pyramidal, mechanisms must be involved for the symptom to occur, and are disinclined to associate it with any specific lesion; they think, rather, that it is caused by disorder of a "constellation" of movement, that is, of the various aggregates of normal movement and the corresponding conduction paths.

The authors find themselves in agreement with much of what Wilson and Walshe have previously published on this question (they quote the paper as having been printed in 1924, whereas 1914 was the year of publication), but they have widened the basis of the symptom on the clinical side and their own conclusions, they candidly admit, are somewhat indefinite. The subject is one requiring much more study.

S. A. K. W.
The case described was clinically one of quadriplegia. The patient at the age of 50 began to feel weakness in the left leg, and this progressed and spread gradually so that three years later he could scarcely walk. By this time weakness and paraesthesia of the right arm had appeared. Two years later the right leg and left arm were also affected in a similar manner and he became bed-ridden. He had also some difficulty in swallowing. On examination at this time some weakness of the left side of the face was noted. The pupils were myotic but reacted to light. He was deaf in the left ear with tinnitus. The arms were very weak and rather hypotonic, the lower limbs spastic with involuntary reflex movements. The spinal fluid was normal and the Wassermann reaction in the blood negative.

On examination three years later (1923) there was definite atrophy of the left side of the tongue with weakness of the left side of the soft palate and at times aphonia. Wasting of the small muscles of the right hand was also present and the diagnosis of atypical amyotrophic lateral sclerosis was made.

On post-mortem examination the arteries of the base of the brain were very atheromatous. Minute softenings were found in the lenticular nuclei and in the pons. The medulla was smaller than normal and the prominence normally formed by the pyramids was flattened down. The cord was also shrunken. The chief histological changes in the cervical cord were: (1) minute neuromata, resembling amputation neuromata, in the leptomeninges on the posterior surface of the spinal cord, chiefly round the blood vessels; (2) areas of areolar degeneration of the posterior part of the dorsal columns and in the region of the pyramidal tracts resembling that seen in subacute combined degeneration; (3) intense atheroma of the blood vessels and considerable thickening of the meninges. Similar changes were found in the lower part of the medulla, but here the neuromata were found also along the dorso-median fissure and passing into the columns of Goll. The pyramids and the fibres in the hilum of the olives, as well as those of the mesial fillet, were severely degenerated and the arcuate nuclei were destroyed. There was also areolar degeneration in the region of the restiform bodies and the descending root of the trigeminal. These changes became less on passing upwards, so that in the uppermost part of the medulla they were comparatively slight. Elsewhere in the nervous system no changes other than the small softenings already noted were discovered.

In reviewing the case the authors consider that the majority of the lesions might be explained by the intense atheroma, which had led to gradual reduction
of the blood supply and to complete blockage of one or two vessels. But they consider that the general atrophy of the medulla and cord and the neuromata suggest a congenital basis for the condition. They are, however, alive to the possibility that the atrophy might be due to ischaemia and the neuromata to regeneration of damaged posterior root fibres.

J. G. GREENFIELD.

[148] A rare form of contracture of the limbs in a case of postencephalitic Parkinsonism (Intorno ad una rara forma di contrattura degli arti osservata in un malato affetto da parkinsonismo post-encefalitico).

—L. MAGNI. Riv. di pat. nerv. e ment., 1926, xxxi, 46.

A review of a case of contracture of flexion of the lower limbs with coincident equinus, interesting because observed in a case of postencephalitic Parkinsonism and because it became permanent and irreducible in the short period of three months. This was supposed to be due to a mesencephalic lesion involving both the tract from the corpus striatum to the locus niger and the cerebral peduncle, with coincident degenerative phenomena in the spinal motor tracts. Such contractures may be due not only to cortical or medullary lesions but also to mesencephalic lesions.

R. G. G.


Oculomotor crises constitute one of the less common phenomena appearing after epidemic encephalitis, usually in association with the Parkinsonian syndrome. The attacks consist in a spasmodic deviation of the eyeballs, most often vertically, occasionally downwards. The fits may arise at any time, sometimes as the result of fatigue, at other times during voluntary deviation of the eyes. The influence of emotion, or exposure to strong lights, may at times be noted.

During the attack the patient is quite unable voluntarily to alter the direction of the eyes, even though the fixed attitude may be accompanied by the utmost distress or pain. In duration, the crises vary from a few seconds or hours to the greater part of a day. Sometimes the fits are accompanied by spasms in other muscles, the oculomotor crises in such cases constituting a part merely of more universal tonic fits. In discussing the morbid physiology, Wimmer emphasizes the frequent coexistence of Parkinsonism. He quotes Statz's conception of a topographical representation in the corpus striatum of individual somatic segments including the eye muscles. Wimmer is inclined to implicate the neostriatum as the site of the lesions.

M. C.

The precise localisation of the physiological centres controlling upward and downward movements of the eyeballs is insufficiently known. Tumours in the region of the anterior colliculi unquestionably are calculated to produce disorder of vertical movement, but they are not satisfactory from the viewpoint of localisation on a minute scale. In cases of paralysis of vertical deviation the patient can usually ‘roll’ his eyes, hence nuclear lesions of superior and inferior recti and of trochlearis are scarcely possible. ‘Supranuclear’ systems capable of effecting vertical movements belong either to the pyramidal or to Deiters’ system. Though we can, of course, move the eyes voluntarily upwards and downwards, cortical and subcortical lesions of the pyramidal paths never appear to produce vertical paralysis. In tracing pyramidal degenerations fibres are practically never found which appear to pass to the oculomotor nuclei at the level of the anterior colliculi: they are seen rather at the level of the most posterior part of the peduncle and anterior part of the pons. The author has shown that vertical nystagmus can develop when the anterior section of the path from Deiters’ nucleus to the oculomotor nucleus is involved, and he concludes that under appropriate circumstances paralysis of vertical movement (voluntary or involuntary) will follow lesions situated in an area between Deiters’ nucleus posteriorly and the oculomotor nuclei anteriorly.

S. A. K. W.


One or two estimates of the reflex are of little significance, and may actually be misleading. It is often very variable in the same individual: and it tends to vary in an irregular manner throughout the day, and from day to day. Values up to three (or more), even if obtained from a considerable series of readings, are often of no significance. For eliciting the reflex, prolonged pressure is more reliable than brief pressure. The reflex passes off in the majority of cases within 20 seconds of the release of pressure. Its slowing down is roughly proportional as a rule to the amount of pressure exerted. No relation was observed in the series of cases between the magnitude of the reflex and the prevailing mood, or between the variability of the reflex and the type or variability of the mood.

C. S. R.


In spite of its title this paper does not introduce any new work on tabes, but gives a useful review of the various theories of the pathogenesis of the disease,
The author accepts Richter's views as affording the best explanation, not only of the anatomopathology, but also of the clinical pathology of the disease. According to Richter the disease in a pure form is confined to the nerve roots, and meningitis, when present, is a mere chance concomitant. Consequently the changes in the cerebrospinal fluid which are considered characteristic of tabes (pleocytosis, globulin excess, Lange curve, and Wassermann reaction) are no indication of the activity of the disease, as they merely reflect the degree of meningitis present. Any or all may be absent even when the disease is progressing rapidly. He pleads for the recognition and treatment of tabes in its pre-ataxic stage, even when the spinal fluid is normal, as thorough and prolonged treatment at this stage offers the best hope of cure. If left untreated the disease may at any moment produce symptoms which are more disabling to the patient and more resistant to treatment than the lightning and girdle pains of the earlier stages. The treatment he advises is an initial thorough course of mercury and bismuth in moderate doses. Arsenic should not be used at first as it is apt to increase lightning pains, but may be employed later as a variant to the other remedies. Mercurialized autogenous serum given intrathecally often produces dramatic improvement when intravenous and intramuscular injections appear to have failed, but this method should not be employed until the patient has undergone a course of treatment by the usual routes. The beneficial action of bismuth cannot be explained by its passage into the cerebrospinal fluid, as the most recent experiments in France and Spain have failed to demonstrate any such passage either in animals or in man.

J. G. Greenfield.


Rombold and Riley record three generations of a family in all of which could be found individuals who at varying times of life manifested a group of symptoms and physical signs which constituted a forme fruste of the entire syndrome of 'hereditary ataxia.' This group of symptoms is limited to the lower extremities and constitutes what may be termed an abortive type of circumferential spinal sclerosis or Friedreich's ataxia. The disease begins with some disturbance in gait and the development of the foot deformity, a pes cavus. The process advances sufficiently to destroy the reflex arc controlling the deep tendon reflexes of the knee and ankle, probably through the degeneration of the collaterals which sweep forward from the entrance of the dorsal roots into the spinal cord to end about the ventral horn cells or intercalated cells, thus completing the reflex arc. The process then advances and involves the reflex arc controlling the reaction of the toes to stimulation applied to the plantar surface of the foot, so that the normal plantar flexion is lost and a clear cut Babinski sign, or a fanning reaction, results. The degeneration terminates apparently at this point and the other characteristics of the disease, the ataxia, the scoliosis, the nystagmus and the dysarthria, fail to develop. R. M. S.

VAGOTONIA, beside occurring in psychopathic states and in neurotics, is frequently the end result of a strenous life. It represents a fatigue of the sympathetic nervous system and the endocrines. Hypoglycaemic reactions are very common symptoms of vagotonia and are frequently the incapacitating factor. These are usually weakness, hunger, sweating, insomnia and tremor. Vagotonia may alternate with sympathicotonia in the same patient. Renal glycuriesis occurs in about half the cases of this series but is not satisfactorily explained.

Treatment takes considerable time. Of all therapeutic measures, rest is more important than any other. Drug treatment is only palliative. In severe cases the patients manifest an inversion of the law of hypertrophy; they weaken by exercise. The basal metabolism is probably at first high, then approaches zero, finally becoming very low.

R. G. G.


The effect of hyperpnoea was examined on 17 subjects of migraine and on 12 controls. In the controls, beyond paræsthesiæ in the extremities and slight dizziness no abnormal symptoms were produced. In 12 of the migrainous patients more or less typical attacks of migraine were produced within two minutes; in the remaining five the symptoms were similar to those in the controls. The 12 patients in whom attacks were brought on all gave, immediately before the experiment, positive reaction to Muck’s adrenalin test, which the author interprets as indicating a tendency to spasm of the vessels, while all the five who failed to respond gave a negative reaction to this test.

J. P. **Martin.**


Three groups of subjects were observed: (a) a group showing obvious depressive affect (23 subjects); (b) a group not specially characterized by a prevailing affect, and belonging to the schizophrenic type of reaction (15 subjects); (c) a group of subjects with organic nervous disease (9 subjects.) There was a considerable variation in the blood-pressure, both systolic and diastolic, in all the groups of subjects observed. This variability was evident in the course of a single day, and also from day to day. The diastolic pressure may, and not infrequently does, vary proportionately as much as the systolic. The variability is greater in restless subjects, under the conditions of the experiment. The variability is greater on the whole in affective disorders and in organic nervous disorders than in schizophrenic cases. The blood-pressure is not necessarily more labile in subjects showing lability of affect than in
subjects in whom the depth of affect does not appreciably vary. It does not follow a uniform diurnal course. When average pressures were considered, it was exceptional for a subject with a prevailing depressive affect to have a systolic blood-pressure persistently above normal; whereas the schizophrenic group showed persistently high and persistently low pressures in about an equal proportion of cases.

C. S. R.

PROGNOSIS AND TREATMENT.


The usual technique for cisternal puncture was followed; as soon as the cerebrospinal fluid was tapped an adapter connected with a rubber tube attached to an open 20 cc. syringe was inserted into the needle and about 10 cc. of the fluid allowed to run into the syringe. Ten drops of a solution of mercury bichloride containing 1/50 of a grain was then poured into the syringe. The tube was pinched and the syringe shaken; when the solution was well mixed and the froth-settled down the fluid was allowed to flow back into the cistern by gravity. Within a few minutes the patient began to vomit and complain of headache, a reaction which usually lasted for one or two days.

In two cases treated by repeated injections after the above fashion arrest or definite improvement was obtained. Other authors have reported equally gratifying results by the same technique (Gifford, Keegan).

S. A. K. W.

[158] The action of bulbocapnine in three cases of paralysis agitans and one case of tremor of paralysis agitans type.—H. De Jong and W. Herman. Arch. of Neurol. and Psychiat., 1926, xvi, 55.

Four patients, of whom three showed the typical Parkinsonian syndrome, and the fourth a tremor of the Parkinsonian type but no other signs, were treated with a group of drugs known to have a quieting action on the central nervous system. Of these four patients, two showed a striking amelioration of the tremor after bulbocapnine and two showed a questionable improvement. Two patients showed a striking improvement after scopolamine, and two were entirely refractory to scopolamine. All four were refractory to atropine and phenobarbital. Morphine was administered to only one patient, who had responded particularly well to bulbocapnine and scopolamine. It was found to have no effect on the tremors. Judging from the four patients examined, bulbocapnine and scopolamine alone can be regarded as of real therapeutic value. Atropine and phenobarbital are of no value. It is evident that cases refractory to both bulbocapnine and scopolamine are not rare. The cause of