Viennese school of midwifery, who, after studying in France and England, adopted the British practice, "having learnt in France what Art, in England what Nature, could do."

The purely British operation of induction of premature labour for cases of contracted pelvis can be attributed to the same conservative spirit. And if we add the discovery of the foetal circulation by Harvey, of the forceps by Chamberlen, of chloroform by Simpson, and of the antiseptic system by Lister, we may claim for British medicine that, though it was last in producing a writer on obstetrics, it has not been least in conferring benefits on parturient women.

ENCEPHALITIS LETHARGICA.*

BY

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WHEN I had the honour of addressing this society on the subject of lethargic or epidemic encephalitis in December, 1918, our interest was aroused by the recent outbreak in our midst of a disease which we regarded as a stray visitor, whose sojourn might not unreasonably be expected to be of short duration, and whose back we should not be sorry to see. Events have not justified this expectation, as our guest is still outstaying his welcome and shows as little inclination to take his departure as we can show of ability to expedite it.

At the end of six years his role has changed from that of a casual, unwelcome visitor to that of a resident pest providing a serious menace to the health of the community. It is not to be wondered at that a disease which has so insidiously and so successfully established itself should present many points of interest for discussion. It is somewhat humiliating to our professional pride that we have not only so far failed to check its progress, but that we are still without the knowledge necessary to achieve that object. Before 1918 the term "encephalitis" was reserved almost entirely for an acute specific inflammation of the brain to which children or young adolescents were liable and of which the cause was the virus of poliomyelitis. To-day the young and old of both sexes are exposed to the danger of contracting another inflammatory disease of the brain, sometimes acute, at other times subacute or chronic, prolific in its clinical manifestations, disabling if not fatal in its results, difficult to diagnose, and almost defiant to treatment and prognosis. It is true that its microbic origin seems to be fairly determined, that its morbid anatomy has been studied in great detail, and that its clinical features have formed the theme of innumerable papers and monographs, but of its path of approach, of its methods of dissemination, and of any weapon with which to stay its hand our ignorance is still profound.

Remembering, as we must, that the secrets of medicine are rarely divulged without the laborious study from all available standpoints of every feature of a disease which presents itself, there is no need to be discouraged. The more profound and the more detailed our knowledge of a disease in all its aspects, the more likely are we to solve the mystery of its origin and the problem of its prevention.

In opening this discussion to-night I shall make no attempt to deal with all the problems presented by epidemic encephalitis which are of interest and which deserve consideration both from clinical and pathological points of view. I shall content myself with directing attention to one or two questions which are difficult to answer and which have important practical bearings, confident that those who follow me will more than make up for my omissions.

So much has already been written in regard to the clinical manifestations of encephalitis in the acute stage that it is hardly necessary to point out that the disease has no real characteristics in the way of symptoms or

physical signs by which it can be recognized. Since any function of the brain may be disturbed, it is obvious that a whole multitude of different symptoms and physical signs may be presented. The diagnosis depends on a careful consideration of the history of onset, the course of events, and on the exclusion of other morbid processes which are capable of producing similar disturbances of function. We are not in possession of any serum or other chemical test by which the disease can be detected, and although examination of the cerebro-spinal fluid is often helpful in a negative way by eliminating other diseases, it cannot be said to afford us a cytological or chemical picture which is entirely pathognomonic.

Although there are so many difficulties in the diagnosis of the acute disease, they do not present nearly so serious a problem as that involved in the detection of what may be called the ambulatory form of encephalitis. And yet the importance of this ambulatory form in regard to its subsequent developments is becoming more and more impressed on our minds as time passes by. We are constantly being confronted now with serious disorders of the central nervous system in patients whose history alone offers a clue to the origin of their troubles, and in this way we are gaining some insight into the clinical features which characterize the ambulatory form of the disease.

I could cite a number of examples in which serious and disabling disturbances of the nervous system have followed what appeared to be a very minor illness, which has been regarded as influenza or even as an ordinary catarrh.

In July of this year I was consulted by a man, 37 years of age, who in the latter part of 1919 suffered from a short illness characterized by slight fever, headache, and general pains insufficient to prevent him from carrying on his duties in the army. In 1920 he pursued his ordinary life, but complained that he was drowsy all day and restless at night, and about that time began to suffer from attacks of dyspnoea, which were of frequent occurrence during the next two years. In August, 1922, he first noticed some tremor of the right arm and a slight generalized rigidity which he described as preventing him from ever sitting at rest in comfort. These symptoms slowly increased, writing and shaving became difficult, and he occasionally suffered from headaches of mild severity. When I saw him in 1924 he was still working, but suffered from a frequent desire to lie down and sleep and found the performance of his duties involved a great effort. On examination he presented all the characteristic features of the post-encephalitic Parkinsonian syndrome.

A somewhat similar case is that of a man of 53 who, in December, 1922, suffered from what was regarded as a bad cold which kept him away from work for a fortnight. During that time he noticed that he was slow and shaky in his movements and inclined to bend forward in walking. He returned to work at the end of fourteen days feeling queer but able to carry on for about three months, when he developed attacks of great loss of confidence out of doors with a tendency to fall backwards. He rapidly became slower and more clumsy in his movements, was hardly able to dress himself, and failed to do himself justice in his work. When I saw him in October, 1923, he presented the appearance of a patient suffering from paralysis agitans as well as other disorders of cerebral function, including a slight degree of sensory aphasia and impairment of his capacity to recognize objects placed in his right hand with his eyes closed. There was considerable exaggeration of all his tendon-jerks and his plantar responses were extensor in type.

In considering the history of these two patients it is difficult to see on what grounds a diagnosis of a serious disease of the central nervous system could have been made at the time when they were first taken ill. They may perhaps be regarded as somewhat exceptional, because in the majority of cases of ambulatory encephalitis it is possible to obtain a history of some symptom pointing very definitely to organic disease of the nervous system, by far the most common being a transient diplopia which not infrequently is present only during a few hours or a few days.

There are other symptoms which might well arouse a suspicion of encephalitis in patients suffering apparently from some minor ailment. I may refer to the occurrence of an acute pain affecting a limb, or perhaps the face or neck, generally labelled as a neuralgia or a neuritis, often of great severity, but generally lasting a matter of twenty-four hours or at the most two or three days. I have frequently observed such attacks of acute pain in cases of severe encephalitis in which the diagnosis has not been in doubt, but they also occur sufficiently often in the ambulatory form of the disease to be worthy of note in relation to diagnosis.

* A paper read in opening a discussion at the Medical Society of London on November 10th.

A lad of 20 in the early part of this summer suffered from severe pain in his left arm and leg which lasted for twenty-four hours and was associated with some slight malaise sufficient to keep him away from his employment for three days. On returning to work at the end of that period he found himself inclined to sleep in the train while going to his job and was very sleepy while at work. This drowsiness continued, and at the end of a fortnight he was troubled by diplopia for a period of forty-eight hours. During this time his relatives noticed that he was completely altered in temperament, having become depressed and morose and quite unlike himself. He was inclined to be restless at night and to sleep in the afternoon. When I saw him, at the end of ten weeks, he presented no definite physical signs of organic disease, but he was still quite unfit for any serious mental or physical exertion, being very easily tired and still much depressed. I saw him again about three months later, when he still complained of insomnia at night and inability to walk more than a mile without fatigue. Examination on this occasion revealed the presence of some lack of expression on the left side of the face, which gave rise in my mind to a strong suspicion that he was developing a Parkinsonian syndrome.

While on the subject of the more obscure and slight forms of encephalitis attention should be directed to the great difficulty which may sometimes present itself in making a diagnosis between encephalitis and early disseminated sclerosis. I cannot indicate this difficulty better than by recording an experience which I had in March, 1921, when there was a severe epidemic of encephalitis in London.

I was asked to see a lady, aged 40, who gave me a history that about a month before I saw her she had noticed diplopia, followed ten days later by a feeling of numbness over the left side of the face and by a suspicion of difficulty in articulation. She thought that her memory had not been quite so good as usual, and she had suffered on several occasions from nocturnal enuresis. For a few days she had been feeling rather unsteady on her legs. On examination there was very slight right-sided ptosis with some nystagmus on deviation of the eyes to the right side only. Sensibility over the skin area supplied by her left fifth nerve was impaired, and she complained that she had lost her sense of taste. There was very slight unsteadiness and awkwardness of her hands when her eyes were shut, but she complained of no difficulty in ordinary manipulations. The right abdominal reflex was less brisk than the left. The right knee-jerk was somewhat more brisk than the left and the right plantar response not so frankly flexor as that obtained in the other foot.

It appeared to me that the clinical features presented by this patient could be attributed equally well to encephalitis or to disseminated sclerosis, but in view of the prevailing epidemic I inclined somewhat to the former diagnosis. I saw her again in July, 1921, when she expressed herself as being perfectly well, and my examination then revealed no disorder of the nervous system. The ptosis, nystagmus, and awkwardness of the hands had completely disappeared and her reflexes were perfectly normal. This patient remained quite well until the summer of 1923, when she suddenly became unsteady on her legs, developed marked dysarthria, with dimness of vision in her left eye. She then presented nystagmus in both directions, pallor of the left optic disc, weakness of the left side of the face, and tremor of the right hand. Her tendon-jerks were increased, the abdominal reflexes had disappeared, and the left plantar response was distinctly abnormal.

I have no doubt that this patient is suffering from disseminated sclerosis, and the rapid improvement which took place in regard to these later symptoms was only in conformity with what one expects in that disease.

I do not propose to take up your time with a description of the sequelae which have been so often observed after acute attacks of encephalitis, as these have been the subject already of many discussions and many papers, but there are one or two points in connexion with these late developments which deserve further consideration. They have a most important bearing on the question of prognosis, and any information which can help to make prognosis easier is worthy of note.

In the present state of our knowledge only a very courageous or very ignorant doctor would willingly assume the role of a prophet when faced with a case of acute encephalitis lethargica in the first week or two of the disease. In such a position one is only justified in pointing out the various possibilities which the future holds for the patient, and these possibilities, which are numerous, may be briefly summarized in the following way:

1. The patient may recover within a reasonable time and suffer from no subsequent ill effects.
2. The patient may die in the acute stage of the disease.
3. The patient may live, but remain permanently more or less disabled as the result of the disease.

4. The patient may make an apparent recovery and yet relapse after a period which may vary from a few weeks to a few months, or perhaps even longer.

5. The patient may make a more or less complete recovery, and yet after a variable interval develop one of the slowly progressive sequelae which are now well recognized as legacies of lethargic encephalitis.

The position of the prophet is, therefore, obviously not an enviable one, and any attempt to make his task easier can at present be based only on insufficient and unreliable data. Some comments are, however, perhaps justifiable in this connexion. The more acute the onset and the more fulminant the outbreak of symptoms, especially when associated with high temperatures, the more serious is the outlook in regard to a speedy fatal termination. Unfortunately it cannot be said that the milder initial stages are in any way exempt from the possibility of being followed by serious and permanent disablements of a progressive character, nor from the possibility of a complete recovery being followed by a more severe and possibly fatal relapse after a few weeks or months. On the other hand, there is no doubt that many mild cases make good recoveries without further developments. The difficulty of prognosis depends on the fact that we are without criteria which would enable us to pick out the more hopeful cases. I cannot help thinking that a much longer experience of this disease is still necessary before we can arrive at reliable statistics in regard both to mortality and to permanent disability. Personally I should be very sorry to attempt to reckon the probabilities in regard to the results of the disease in any kind of figures or percentages.

One of the many interesting points worthy of discussion to-night is the question as to how far late developments can be regarded as true relapses, as merely indirect consequences of a morbid process which has ceased to be active, or, in rare cases, as examples of fresh infection. I have in mind patients who appear to be examples of these three occurrences. For instance, I recall a man about 50 years of age who, after a few days of ill health, suddenly passed into a state of unconsciousness, rapidly followed by a delirium which lasted for about seventy-two hours, and, recovering from this, he suffered for another week or two from severe headache, diplopia, and a certain amount of mental confusion. A gradual convalescence set in which was rudely broken at the end of about three months by the onset of severe headache, hemianopia, and other active cerebral symptoms, which proved fatal in the course of about three weeks. On the other hand, I have in mind the case of a lady whose initial illness in the winter of 1918-19 was characterized by slight pyrexia, diplopia, lethargy, and myoclonic movements, but who made, apparently, a complete recovery and remained in her normal condition for a period of five years. At the end of that time she was again seized with diplopia, pyrexia, headache, and rapidly increasing clouding of consciousness, and died after an illness which only lasted three or four days. The particular interest in this case lies in the fact that a thorough *post-mortem* examination was made, and that the evidence of old as well as recent inflammation was detected in the course of the microscopical examination of the brain tissues. Attempts, however, made by Dr. Greenfield to inoculate animals with the virus from this patient proved entirely unsuccessful. We are left, therefore, quite unable to decide whether the fatal attack should be regarded as a long-delayed flare-up of the initial inflammatory process or whether it was the result of an entirely fresh infection in a patient whose acquired immunity, if there be such a condition in relation to this disease, had faded out. It may be noted incidentally that the second attack occurred at a time when cases of encephalitis were extremely prevalent.

While discussing the question of prognosis it may not be out of place to refer briefly to a question which is not infrequently put to us in regard to the duration of particular symptoms, and I should like to refer especially to the prospects of a patient who, after all other symptoms of the disease have disappeared, still suffers from myoclonic contractions. In this connexion it is worthy of record that a medical man who suffered from an acute attack of

encephalitis in 1916, was still suffering from frequent bouts of myoclonic contractions in his trunk muscles when I examined him in 1920. When I last saw him, a year ago, the movements had nearly ceased, and only re-appeared from time to time when he was overtired.* He was then, and still is, leading a very strenuous life in general practice and is in no way disabled. I was consulted in regard to his qualification for a life insurance policy, and expressed the opinion, which was accepted by the office, that he might be taken on at ordinary rates. This opinion was expressed as the result of my experience that the persistence of myoclonic contractions should not be regarded as an unfavourable symptom from the prognostic point of view. I might even go further, and say that even in acute cases the presence of severe and widespread involuntary muscular contractions is not necessarily of grave omen.

The sequelae of encephalitis are worthy of close study from an academic point of view on account of the light which they may help to throw on the localization of cerebral functions. I do not propose to make any comments on the striking changes in temperament and behaviour which are well known to follow in the train of this disease, but I should like to draw your attention to some interesting phenomena which not infrequently are associated with the post-encephalitic Parkinsonian syndrome. Only a few weeks ago I had the opportunity of discussing with an intelligent patient, suffering from that condition, the alterations which had taken place in what one might call her everyday experiences. She complained that in addition to her general slowness of action she was still inclined to drowsiness and to attacks of uncontrollable yawning. While she could detect no impairment of memory, nor of her ability to grasp subjects in which she was interested, she was much handicapped in her daily activities by attacks of what she called "shortness of breath," which on further analysis she described as periods during which she had to breathe consciously. She remarked that the same attention was necessary for deglutition, and that she could only sip her tea because each mouthful had to be swallowed by a conscious effort, the actual process causing her some annoyance because of its noisiness. She presented, what is so common in these patients, considerable impairment of the power to converge and accommodate, which prevented her from reading for any length of time. In regard to her rigidity she explained that she could relax her muscles voluntarily, but as soon as she stopped thinking about it the muscles became screwed up again. The reason why she liked to have massage was that she got tired of the feeling of muscular tension, and that rubbing relieved it and served to some extent to prevent attacks of cramp. She also described a curious habit which beset her when she was standing in the erect position. Her weight was constantly being transferred alternately from one foot to the other unless she directed her attention to it. So long as her attention remained fixed on the idea of standing still she was able to do so, but the moment her mind was distracted the movement of transferring her weight from one foot to another returned.

The cases presenting the Parkinsonian syndrome appear to illustrate a pathological condition in which many functions purely automatic in normal health can no longer be aroused to activity except under the influence of the higher centres, and it is not surprising that patients suffering in this way find that the burdens and duties of life have been materially increased by their illness.

We are accustomed to associate this Parkinsonian syndrome with lesions of the basal ganglia, and it has possibly struck some of us as being rather curious that with few exceptions the progressive sequelae of encephalitis take this form. Is it possible that there are other progressive sequelae of the disease occurring less commonly and perhaps not yet recognized? During the last three or four years I have been faced by a number of cases of progressive hemiplegia, generally starting with a disability of one limb, which spreads first of all to the other limb and face on the same side and then appears in the limbs of the opposite side, finally producing the picture of a double hemiplegia. In these cases the disability is mainly a

motor one, but is not infrequently accompanied by slight sensory disturbances of cortical origin. This condition has appeared in patients with no arterial changes, and therefore could not be ascribed to a progressive defect in cerebral circulation. The process has been unassociated with headache, vomiting, or optic neuritis, but the absence of any signs of increased intracranial pressure has not deterred me in one or two instances from advising an exploratory operation of the brain. When this has been done no gross changes have been visible, and I am beginning to suspect that the progressive disability may be the legacy of unrecognized encephalitis and characterizes a group of patients comparable to those presenting the Parkinsonian picture. In the latter case the chief incidence of the disease is on the basal ganglia, and in the former a similar process may be operative on the cerebral cortex. In a few of these cases I have noted the occurrence of an illness, regarded as influenza, preceding the onset of the symptoms referable to the central nervous system, but I have not sufficient evidence at the present time to do more than suggest the explanation I have indicated as a possible solution of the problem they present.

It may be that the advent of encephalitis in an epidemic form—and it is difficult to believe that it is a disease entirely new to us—may in the long run throw light on the etiology and pathogenesis of some obscure disorders of the brain notable for psychological and physical disabilities. At any rate, there is no need to apologize for having devoted much of your time and mine this evening to a study of the dire results which are apt to follow comparatively trivial disturbances of the nervous system. The practical lesson to be learnt from our experience of the last few years is that no minor ailment involving definite evidence of organic nervous lesions, however slight, should be treated with anything but the greatest consideration. It cannot be stated as a proved fact that with more rest and care in the early stages of mild encephalitis late serious developments may be prevented, but on general principles such an expectation is certainly permissible. Inactivity is an essential part of the treatment which we employ for inflammation in any part of the body; no exception to this rule can be justified in the case of our most highly specialized, most delicate, and yet most valuable tissues.

ANEURYSM OF A BRANCH OF THE RENAL ARTERY: RUPTURE: NEPHRECTOMY: RECOVERY.

BY

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SPONTANEOUS aneurysm of a branch of the renal artery as a source of symptomless haematuria is so exceedingly rare that the following case seems to be worth recording.

A married lady, aged 47, was brought to me by Dr. Bowen-Jones of Carmarthen in December, 1918. She had been suffering from very severe haematuria for three weeks and was getting rapidly worse in every way. There was no history of recent injury or illness. The bleeding had begun suddenly. It was so profuse and continuous that it was thought at first to come from the uterus; later it became intermittent and clearly came from the bladder during micturition. There was no history of renal pain or colic, nor was there any palpable enlargement or tenderness of either kidney. A complete x-ray examination failed to reveal any urinary calculus. Cystoscopy was difficult owing to the large amount of blood clot in the bladder, but ultimately it was proved that the blood came in large quantities from the left ureter and that normal urine issued from the right.

As the patient was very ill and bloodless the left kidney was explored without delay through the usual oblique incision in the loin. It was found to be enlarged, adherent, and deeply congested; its pelvis was greatly distended with blood. No stone could be felt in the latter nor in the kidney. The pelvis was incised, but bright red blood rushed out, and a finger introduced failed to find any stone or other cause for the furious bleeding, therefore nephrectomy was performed at once. The patient made a good recovery, but she took a long time to recover from her severe anaemia. She has remained in good health and is well nearly six years later.

Upon opening the kidney and its pelvis from end to end black streaks of altered blood and an infarct were seen in the renal substance, and a ruptured sacculated aneurysm, the size of a