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

large pea, was found partly on the surface of one of the lower renal papillae. It arose from one of the intrarenal branches of the renal artery. It is unfortunate that, owing to the pressure of military surgery, the specimen was not preserved.

Aneurysm of the renal artery is very rare. M. J. Conroy¹ estimated from *post-mortem* records that only about 1 per cent. of all aneurysms affect this artery. Sir Henry Morris,² in 1900, was able to collect the records of only 21 cases, and two-thirds of these were traumatic in origin; Conroy, in 1923, succeeded in adding 11 cases, but he overlooked 3 cases published by David Newman³—making 35 in all. Two of Newman's cases were very like the one recorded here, for they were spontaneous in origin, saccular, and situated within the kidney or its pelvis. One of these arose in the renal artery itself, and the other, like mine, originated in one of the large branches of this artery. It is clear that this type is not easily recognized even when the kidney has been exposed in order to find and stop a painless haematuria which threatens life. It is probable that small aneurysms affecting the branches of the renal artery have been overlooked even after the kidney has been removed, either during life or after death. It would have been easy to miss the small aneurysm which caused so much mischief in my patient.

Apart from haemorrhage, these intrarenal aneurysms cause no symptoms or signs and are only found after death from some other disease.

Etiology.

We are not concerned here with traumatic aneurysms of the renal arteries, which are due to contusions, lacerations, rupture, wounds, or operations upon the kidney. The cause of *spontaneous aneurysms* is the same here as elsewhere. Atheroma, syphilis, embolism, or infection appear to have been the causes in the few recorded cases; in my case there was no evidence of any of these. The average age of the seventeen known cases of spontaneous aneurysm was over 40. A little more than half of them arose from *branches* of the renal artery.

Symptoms and Signs.

Spontaneous aneurysms are usually small in size, remain intact, and give no clinical signs, but when they rupture into the pelvis "symptomless haematuria," which is generally very profuse and either intermittent or remittent, occurs. This is in striking contrast to traumatic renal aneurysms, the majority of which cause large tumours in the loin and much pain with or without haematuria.

Diagnosis.

The diagnosis of spontaneous renal aneurysm depends chiefly on the great severity and recurrence of the painless haematuria, the absence of any history of injury, and the absence of the shadow of a renal calculus. It is interesting that in several cases (including my own) the bleeding was so severe that it ran continuously out of the urethra, so that its source was at first thought to be uterine. Several cases have needed a catheter because clots blocked the urethra. Cystoscopy, after washing out the bladder, proves the absence of vesical growth, and the issue of blood from one ureter indicates that the source is in the corresponding kidney. Newman, in two cases, noticed what he regards as a diagnostic sign—that is, "when interrupted pressure was made with the kidney between the hands—one behind and another in front—every time pressure was made a quantity of blood was seen to flow into the bladder, and when the pressure was withdrawn the flow ceased. This is found in no other condition." This sign, in his opinion, should distinguish renal aneurysm from all other causes of severe haematuria.

In my case the blood escaped continuously and with great force during the cystoscopic examination. I have not noticed such forcible and profuse bleeding even with renal neoplasm, which, by the way, often forms a palpable renal tumour—which spontaneous aneurysm rarely does.

Treatment.

Without operation the prognosis of bleeding renal aneurysm, either traumatic or spontaneous, is very grave. An early operation offers the only reasonable chance of

recovery. Hitherto nephrectomy has been adopted in all but one of the successful cases. Orth,⁴ operating for traumatic aneurysm, turned out the clots and successfully sutured the tear in the renal artery, but as a rule the condition of the kidney in these traumatic cases is so bad that nephrectomy is necessary. Before removing the kidney it is necessary to prove the presence and activity of the opposite one.

So far the diagnosis of spontaneous aneurysms in the kidney has been so uncertain and incomplete that in the few recorded cases nephrectomy has always been adopted, and on the whole very successfully. With the aid of a pedicle clamp after delivering the kidney, incising the pelvis should enable us to make an accurate diagnosis of an aneurysm in a branch of the renal artery, and to remove the aneurysm, which is usually quite small, without any loss of blood. It would be a great advance to save the kidney in this way, but it is probable that in some cases the aneurysm may not be discovered, and possible that, in a few, another small aneurysm may be present in the kidney or subsequently develop in diseased arteries to give recurrence of bleeding.

Whatever operation is performed, these patients are usually so ill and anaemic that blood transfusion must be done in order to give them the best chance of recovery.

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A PLEA FOR THE EARLIER OPERATIVE TREATMENT OF ACUTE OTITIS MEDIA.

BY

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THERE is, in my opinion, no branch of surgery more neglected than the treatment of acute otitis media. Almost every day one meets with cases where an acute inflammatory condition of the middle ear has been allowed to progress until a state of chronic suppuration, with all its attendant sequelae, has resulted. Probably many factors contribute to this unfortunate result, but chief amongst them are, first, the ignorance of the general public; secondly, the lack, until quite recently, of compulsory training with examination of the medical student in the diseases of the ear; and lastly, the fact that, except in a few cases, a visiting otologist is not recognized as a necessary member of the staff of a large fever hospital.

The exanthemata are responsible for the majority of the worse types of suppurative middle-ear disease, and it is at their inception that so much can be done to prevent a progressive and chronic disease. It is to be hoped, therefore, that in the near future local authorities will see the wisdom of following the example set forth by a few of our large fever hospitals in appointing visiting otologists.

Given a case of acute otitis media, how should it be treated? All are agreed upon the value of an early incision of the tympanic membrane, and yet I wonder how often it is advised, judging from the large number of "running ears" where no such treatment was adopted. The ear is syringed, hot applications applied, and the appearance of pus in the meatus anxiously awaited. It is too frequently thought that when pus appears all is well, but Nature's perforation of the tympanic membrane is in practically every case a tension rupture—that is to say, the increased intratympanic pressure, from the accumulation of inflammatory products, is ultimately relieved by a bursting of the membrane.

The tympanic membrane is capable of withstanding a high degree of pressure, and in many cases, before the membrane ruptures, the increased intratympanic pressure has disseminated the infection into the posterior end of the middle-ear cleft—the mastoid antrum. Moreover, the perforation is small, usually on the summit of what was a bulging part of the membrane, and