A Clinical Lecture ON TWO CASES OF CHRONIC RENAL DISEASE:

A CONTRAST IN TREATMENT AND PROGNOSIS.

BY

SIR JAMES GALLOWAY, K.B.E., C.B.,
SENIOR PHYSICIAN TO CHARING CROSS HOSPITAL.

I WISH to draw your attention to-day to two patients suffering from chronic renal disease whose progress we have been watching during the last two months of the summer session and of whom I have spoken to you on various occasions. These patients have shown very distinctly the features and development of two types of disease which differ so much from each other as to indicate clearly that they are due to distinct functional and structural defects. One of these (Case I) is a very characteristic example of disease in which uraemia or azotaemia associated with vascular degeneration gives rise to the impressive symptoms; the other (Case II) is a well marked case in which hydraemia and anasarca are the outstanding features. You will all of you remember the first case—sitting up in his bed propped up with pillows, his nervous, anxious, excitable appearance and conduct, and his frequent attacks of exhausting dyspnoea; and you will not fail to have noted the contrast presented by the other patient—his pallid face and body swollen to the bursting point, his calm and placid demeanour in spite of his exceedingly unhappy plight, possibly rendered more easy in his case on account of the reputed "child-like and bland" disposition of his race. The first of these two cases corresponds to the "interstitial" variety of chronic nephritis, in which, unhappily, our methods of treatment, with the exception of prophylaxis, are not yet very helpful, and the prospect of cure is not good—in the case of our patient his disease ended fatally after a most painful and distressing illness. The second case corresponds to the "parenchymatous" variety of the disease, in which treatment is much more helpful and the prospect is by no means so unfavorable—our patient is convalescent, and begs to be allowed to return to work, as he declares that he is quite fit now to carry out the duties required of him.

CASE I.

Charles C., aged 55 years, was admitted on June 2nd, 1919, on account of dyspnoea. He was a Londoner by birth, his forebears have lived in London for at least two or three generations, and seem to have been a good healthy stock. He was married; his wife and two grown-up sons who survive him are vigorous folk and in good health. There was no history nor any evidence of syphilis in his case nor any indication of gout; in fact, he seems to have enjoyed excellent health until the onset of the symptoms of his present illness. He had always been a good eater, and had taken a certain amount of beer and other alcoholic beverages, but declared very firmly that the amount consumed had always been "moderate." His occupation as an artisan—a worker in wood and metals—had brought him into contact with lead, but he said that he knew about lead poisoning, and that he never had the least symptom of it. Before the war he was in regular occupation, not too arduous in character, but in the early days of the war he obtained employment as a munition worker, and worked harder than had been his custom for a long time. About twelve months before he came to us he noted the early symptoms of his disease; these were failure of desire and power to work, headache, occasional giddiness, insomnia, and especially distressing and unaccustomed attacks of shortness of breath. He had to give up work in consequence, and after being treated at home for the greater part of the year, he came to us.

You will remember that he was a well-formed man of fair complexion, and that his naturally clear and ruddy colour was often dusky as the result of dyspnoea. He had a slight amount of oedema on admission, most evident about the ankles and dorsal surfaces of his feet, but also, though very slight, over the body, so that the stethoscope made a little mark on the chest. This oedema almost disappeared soon after admission, and did not recur to any extent till the later stages of his malady; it did not

become troublesome until the last few days of his life, when pulmonary oedema became the serious complication.

The cardio-vascular condition was of special import. The heart showed definite signs of enlargement, the apex beat being palpable about 5 in. to the left of the mid-sternal line. The second sound of the heart was accentuated, especially at the base and to the right of the sternum, and was modified by a rough, though not loud, diastolic murmur. The radial arteries did not give much evidence of degeneration by palpation, but the arterial tension was increased. The systolic blood pressure corresponded to 180 mm. of mercury soon after admission, subsiding to about 160 mm. in a few days; at about this point it remained during his illness. The retinal arteries were more defined than usual, and there were several small haemorrhages in both fundi, at least one of which occurred while he was in hospital. There was little or no evidence of oedema of the retinal tissues or of the optic discs.

The urine was reduced in amount, varying from 18 to 25 fluid ounces daily, with the specific gravity of from 1.018 to 1.025. The reaction tended to be alkaline, there was often a heavy deposit of phosphates, and a certain amount of oxalate of lime was seen from time to time. It contained albumin varying in amount from 0.25 to 1 part per 1,000 by Esbach's measurement and showed hyaline and fatty epithelial casts in small numbers, but no blood was noted as being present at any of the numerous examinations made. The amount of urea excreted in the urine was considerable—on one occasion shortly after admission the specimen contained as much as 4.2 per cent.—an important point to bear in mind in view of the discussion as to the value of the urea test as an indication of the degree of azotaemia, and of the power of the kidneys to extract nitrogenous material from the blood on the one hand, and of the nature and extent of the kidney lesion on the other.

The dyspnoea from which he suffered was peculiar in type and characteristic of his malady. It was clearly paroxysmal, although for hours at a time, even during the most trying period of his illness, he would be breathless, and would breathe more frequently and more deeply than is normal. When the paroxysmal attacks came on he said that he felt a tightness in the upper part of the chest, and would then begin to breathe more often and more deeply until the distress became very great, his eyes would appear staring, he would snatch at the upper part of his chest or neck, as if attempting to remove some obstruction, and he might make an effort to get out of bed or from his chair, and even to do violent injury to himself. In a short time, after perhaps twenty or thirty violent respirations, the breathing would become less violent gradually, and he might return to his normal state and be at peace, or another attack might follow rapidly, or he might relapse into a state of comparatively mild breathlessness. Between the paroxysms there was no period of apnoea, and in this respect the dyspnoea differed distinctly from Cheyne-Stokes respiration. There was no sign of difficulty in expiration or inspiration, as in cases of true "spasmodic" asthma. His own description of his feelings is worth noting. He said that when his trouble was coming on he felt a weight or tightness about the upper part of the chest and throat, there was no pain, and especially there was no feeling of pain radiating along the arms. Then came the necessity of panting and fuller breathing, and this would gradually work up to a point when he felt "as if everything is going to go," and then just after "he turned the corner." The excitement during an attack might be very great. He would shout, attempt to get out of bed, and on one occasion he attempted to reach the window during the night with the intention of trying to throw himself out. It may be imagined easily that he was a very difficult patient to control, that he alarmed the other patients in the ward, and that he tried the tact and skill of sister and the nurses to the utmost.

The treatment of this patient had to be arranged on almost purely symptomatic lines. Rest was obtained for him, so far as was possible, in bed, where he had to be propped up continuously, or on a chair; from time to time he had to be permitted to move about the ward. His great wish during the most severe part of his illness was to get near a window or on the balcony of the ward. The diet was chosen so as to be as easily digestible as possible. A fair amount of protein was given in the form of milk, fish, and occasionally a small portion of easily digestible meat,

but the total quantity of protein was considerably less in proportion to the total amount of food taken than in the case of the normal hospital diet. In addition he had various carbohydrate foods, fruit, and vegetables. He usually said that he had a good appetite and wished to take food, but, as may be guessed, he did not take a great quantity. He was encouraged to take as much water as he felt inclined to drink. Attempts were made to relieve his uraemic state by means of increasing the output of urine. With this intention saline diuretics were freely administered. Digitalis was used and given in as large doses as was thought to be safe, bearing in mind the condition of his vascular system and the increased blood pressure. Theobromine was used and pushed to the utmost. Aperient remedies were used as freely as was advisable.

During the first fortnight our patient made some improvement, shown by the fall of blood pressure, diminution of the dyspnoic distress, and increase in his feeling of comfort. But during the next month the symptoms gradually became worse, and he passed through the most distressing period of his illness. While in this state various measures were made use of to relieve his distress. On two occasions venesection was performed in order to relieve attacks of uraemic dyspnoea, with no good result. The use of sedatives had then to be considered carefully. The administration of bromides had no effect. One of the valuable drugs in the treatment of such cases is chloral hydrate, and this was employed freely in the first instance, alone and also administered with brandy. A certain amount of relief was obtained in this way. But it was found soon that this remedy had not sufficient effect, and the more powerful and in many ways the most valuable drug in such cases—namely, morphine—had to be employed. The use of morphine in cases of uraemic distress, especially with dyspnoea, has long been recognized to be of great value; but the drug must be administered thoughtfully and with care. In my experience—although it must be admitted that the drug is a most valuable assistant in the treatment of the patient and a merciful means of securing rest—it is rare to find that the patient will recover if it has been found necessary to commence the use of this drug. It must be borne in mind, therefore, if the physician determines to administer morphine in such cases, that in all probability he marks a milestone in the down grade of his patient. It must be remembered also that a very small dose is usually sufficient to secure a good result; it is very satisfactory to observe the rapid relief of the most trying symptoms after the use of a small dose. In this case the dose of $\frac{1}{4}$ grain administered hypodermically was never exceeded, and usually $\frac{1}{8}$ grain was sufficient to obtain the desired relief. At first this remedy was given once in two or three days, but during the most trying period $\frac{1}{8}$ grain was given every evening for eight days in succession. About a fortnight before he died evidence of strain and commencing failure of the heart became noticeable by irregularity of the heart-beat and indications of enlargement of the cardiac area. Along with this there appeared definite increase in the amount of general oedema, and unfortunately the oedema showed a tendency to affect the lungs to a relatively great degree. In spite of these ominous symptoms, the patient did not appear to suffer nearly so much as in the previous stage of the disease. It is true that he lost his mental alertness to a considerable extent, but his distress was much less trying. But even to near the end of his life the paroxysmal attacks of dyspnoea tended to show themselves in the accustomed manner, although not nearly so severely, not so frequently, and for shorter periods. He died two months after admission to hospital owing to oedema of the lungs.

CASE II.

W. T. Y., aged 36 years, was admitted on June 11th, 1919, on account of dropsy. He is a Chinaman, having been born in a country place some forty miles from Shanghai, where his father earned his living as a shoemaker. He says that his father and the members of his family are healthy folk. He has been for many years a wanderer over the face of the earth, usually as a steward on merchant ships, but for the past four years he has settled down as a waiter in a restaurant frequented by his countrymen, near the hospital. He states that he has not suffered from any serious illness previous to the present malady, with the exception of attacks of malarial fever in

days gone by, and that he does not take alcoholic drinks. He considers that he has had good general health all his days. There is no evidence of syphilis. The present illness commenced a few weeks before admission, when he noticed for the first time that there was puffiness under the eyes; swelling of the ankles developed later. He soon found that he was not fit to go on with his work because he got short of breath on climbing stairs. The symptoms increased and in consequence he came to hospital.

You will recollect his appearance soon after admission, when the subcutaneous tissues became very oedematous, and the abdominal cavity was distended with fluid. The great anasarca and the characteristic whitish-yellow complexion of his race produced a very remarkable picture of renal dropsy; his appearance and demeanour were in marked contrast to his neighbour C. (Case I).

The heart and blood vessels were in good condition. The beat was regular and of good quality, and the apex was well within the nipple line. There was no evidence of degeneration of blood vessels, the fundus oculi was normal in each eye, and the blood pressure was not increased. Readings of about 112 mm. of mercury in systole were obtained.

The urine on admission varied in quantity from 26 to 46 fluid ounces daily, with the specific gravity of 1.020 to 1.028, but as the anasarca increased the amount of urine diminished to 10 to 20 ounces daily with the specific gravity of 1.025 to 1.038. The amount of albumin contained in the urine was from 4 to 6 parts per 1,000 soon after admission, but it increased to 6 to 14 parts per 1,000 when the anasarca was at the worst. The reaction was usually acid, and there was little or no deposit. No casts were observed on microscopic examination.

The dropsy, which was the prominent feature in this case, increased steadily in amount in spite of the treatment used during the early period of his residence in hospital. I refrained from tapping him, hoping that a favouring diuresis might be brought about, until the mechanical difficulties in nursing him properly became so great that we had to interfere. By that time, however, the abdomen was full of fluid as well as the subcutaneous tissues generally, and oozing was taking place through the skin at certain weak spots, the elastic fibres of the cutis had given way at the points of greatest strain and "lineae albicantes" had appeared. He was tapped by means of Southey's tubes passed into the subcutaneous tissues of the legs and sides and into the abdominal cavity, and relieved of fluid to the extent of 10 pints. In spite of all these distressing conditions you will remember the calmness with which he bore his illness. He lay quietly in bed and bore his ills with equanimity, drawing my special attention to his condition when oozing of the subcutaneous fluid began to incommode him greatly.

The treatment for this patient was arranged at first mainly with the purpose of securing as much comfort and rest for him as was possible. Rest was obtained in bed without difficulty. The diet was chosen so as to be as easily digested as possible, and consisted largely of milk with farinaceous foods, bread with a certain amount of butter, and a sufficient amount of fruit or easily digested fresh vegetables. The more highly albuminous foods were not excluded, but were limited in amount, but he had in addition to milk a certain amount of fish or eggs, and even small quantities of meat occasionally. The amount of salt allowed was sufficient to make the diet palatable; no free salt was given. The amount of fluid was limited as closely as was thought advisable. A rough calculation of the nutritive value of his diet at this period of the treatment was made, and was found to correspond to about 1,580 Calories, of which about 427 Calories were derived from the protein in his food. The patient was therefore on a low diet, and told us that he was hungry and would willingly take more food. The anasarca nevertheless increased steadily, and his general condition deteriorated. Efforts were made to obtain increase in the amount of urine by various means. Theobromine was administered in as large doses as was thought desirable, the saline diuretics were used freely, and digitalis was tried in order to obtain its diuretic action—but the hoped-for diuresis did not occur. I then determined to make a very thorough change in the character of his diet. In the meantime the anasarca had increased to such an extent that tapping, which I had postponed as long as was possible, became urgently

necessary, and was done in the manner and with the result already mentioned. A certain amount of comfort was obtained for our patient by this means, but not to such an extent as could have been wished, and for a day or two it appeared as if the fluid were reaccumulating, especially as no increase in the outflow of urine occurred. The new diet was commenced within a day or two of the tapping. It consisted of bread, rice, green vegetables, and fruit; the amount of milk was increased, and in addition he had two or more eggs daily; as he had been told that his diet was to be increased he asked if he might have rabbit, so rabbit cooked in various ways formed part of his menu, alternating with fish. The amount of fat in the previous diet was cut down, and this he felt to be a distinct deprivation, inasmuch as he no longer had butter. The nutritive value of his diet under the new regimen increased till it corresponded roughly to 2,625 Calories, a much larger proportion of this amount being derived from albuminous foods and little from fats. The result of this change in the dietary was remarkable. In three days after the new diet was commenced the amount of urine had increased from a daily output of from 16 to 20 oz. to 42 oz.; it remained for a week at the level of 36 to 48 oz. daily; the amount then increased again largely to 48 to 64 oz., and in seventeen days from the commencement of the new, highly albuminous dietary the output was no less than 94 fluid oz. in one day—the true “polyurie libératrice” was established. Concurrently with this polyuria a fall occurred in the specific gravity of the urine from 1.038 to 1.015, the amount of albumin diminished from 14 parts per 1,000 to 0.5 part per 1,000, and the anasarca vanished. His general condition underwent a marked change for the better, so much so as to allow of his getting up and moving about the ward and into the open air. The remarkable feature of this change for the better was the rapidity with which the favourable conditions made their appearance. Within three weeks our patient had passed from the condition of a man whose life was threatened by a dangerous illness to that of a convalescent who feels so well that he begs to be permitted to return to work at the earliest moment.

This experience may be claimed as another piece of evidence that the plan of underfeeding our patients suffering from chronic nephritis with dropsy as the chief symptom, especially by diminishing the amount of albuminous foods in the dietary, requires reconsideration and amendment, and that the recommendations made by Dr. Epstein, of the Mount Sinai Hospital, New York, have firm foundation in clinical experience. You will recollect that Sir Clifford Allbutt has given his favourable experience of the dietetic treatment of such cases on the plan which has given so good a result in this case.

During the summer session I have drawn your attention to certain aspects of recent experimental and clinical observation on the subject of renal disease recorded by various workers in France, in the United States, and in this country, and to certain tests that have been employed with the view of ascertaining the efficiency of various functions of the kidneys. At the close of the session I would recommend you all to read a paper by Dr. Albert A. Epstein in the *American Journal of Medical Sciences* for November, 1917 (vol. cliv, No. 5, p. 638), in which he gives his views on the subject of treatment; and not to forget to study a Report to the Medical Research Committee on an Investigation into the Effects of War Nephritis on Kidney Function by Drs. H. MacLean and De Wesselow, published in the *Quarterly Journal of Medicine* for July, 1919 (vol. xii, No. 48, p. 347).

THE fund of the Harvard Infantile Paralysis Commission has reached a total of £8,050.

IN the *Medical Journal of the Siamese Red Cross* for December, 1918, Dr. M. E. Barnes, Representative of the International Health Board, Rockefeller Foundation, states that in Northern Siam of 20,209 persons examined for hookworm disease 15,458, or 76.4 per cent., were found infected. *Necator americanus* (Stiles) is the species of nematode ordinarily found in Northern Siam. Very advanced cases are seen occasionally in the northern provinces, though at present they are somewhat infrequent in Siam as compared with Ceylon and Java. Measures are being taken by the Government which, it is hoped, will stamp out the infection. Among the anthelmintics used thymol and oil of chenopodium have proved especially valuable.

SOME PRACTICAL CONSIDERATIONS ON THE OPERATION FOR REMOVAL OF ADENOIDS AND ENUCLEATION OF TONSILS.

BY

W. H. BOWEN, M.B., M.S.LOND., F.R.C.S.,

ASSISTANT SURGEON, AND ASSISTANT SURGEON IN CHARGE OF EAR,
NOSE, AND THROAT DEPARTMENT, ADDENBROOKE'S HOSPITAL;
FORMERLY SURGEON TO THE EAST LONDON HOSPITAL FOR
CHILDREN AND THE ROYAL EAR HOSPITAL.

THIS paper makes no pretence to an elaborate review of the indications for operation nor yet the methods of operating, but aims rather at setting out practical considerations gradually forced upon one by an experience covering some fourteen years. The relatively new operation of complete enucleation of tonsils by the guillotine alone, as opposed to the crude and uncertain cutting which had been the custom for so long, opened up a satisfactory era to the surgeon in charge of a special clinic. It gave confidence in the results of the operation, since he felt that now the whole infective focus could be removed, with the most ordinary attention to a simple method, thus making the probability of cure much greater. Disappointment was inevitable to those who, like the writer, watched the result of the older operation of cutting for many years after the operation had been performed, and saw recurrence of trouble follow in the remnants of the tonsil. Dispassionately considered, many cases could only be described as failures; and until some method had been devised whereby the disease could be removed completely, without having recourse to the dangerous and exhausting methods of enucleation then employed, it seemed that these disappointing half-measures must be tolerated.

The method of complete enucleation introduced by Drs. Whillis and Pybus¹ solved the problem. It is simple and quickly mastered, the diseased tonsils are removed in their entirety, the ordinary Mackenzie guillotine can be used (reversed), and, as is so important, the whole operation can be performed in sixty seconds or less after very little practice by anyone used to the guillotine; that is to say, the operation can be performed as quickly as the former cutting operation, and with incomparably greater benefit to the patient.

Haemorrhage and sepsis, the former having a distinct bearing on the latter, are the two risks of the operation. Their avoidance demands anxious attention. The plan of preparation with this end in view set out below has been gradually evolved, and, whilst it is difficult to prove its worth, the comparative study of a large number of cases has been sufficiently convincing to justify its being tried by others.

The aims of the operation are by removing adenoids to eliminate a source of continuous infection from the nasopharynx and to make nose breathing possible, and by enucleating the tonsils to remove an actual or potential infective focus from the throat. Furthermore, it must be strongly insisted that the proper time to perform the operation is early childhood. Probably the ideal time is from three to six years of age, for childhood is the time of these hypertrophies, and failure to treat them in the early stages, especially the enlargement of the nasopharyngeal tonsil (adenoids), leads to the troublesome complications which the aurist especially sees in later years.

The relation of enlarged tonsils and adenoids to diphtheria carriers is worthy of the closest attention, and this paper endeavours to emphasize its importance.

Indications.

Of all the indications for operation the forestalling of deafness is the most important. It is no unusual thing for a mother to bring a child and to say that he is inattentive and will not listen to what she says. It is often called “naughtiness,” but can easily be shown to be due to loss of hearing power by turning the child's back to the speaker and then asking for a repetition of words said. It is usually quite easy to assure the mother that the child is deaf by getting her to ask the child to do something whilst its back is turned to her. The child will hear words spoken but not pick up the individual words, and is therefore unable to grasp the order or request. On turning round and facing the mother, and getting the additional assistance of watching her lips, the child will respond,