REFRESHER COURSE FOR GENERAL PRACTITIONERS

HYPERTENSION—II

BY

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Prognosis and Assessment of Hypertensive Cases

It is most important to bear in mind the fact that benign essential hypertension is a condition compatible with many years of useful life. If a moderate rise in blood pressure is accidentally discovered at the age of 35, for instance, it is quite possible that the patient may be over 60 before he begins to develop symptoms of cardiac strain, and the greatest disservice will have been done to him if, because of a foolish doctor, he spends those 25 or 30 years in a state of anxiety about his health. Burgess (1948) has shown that even severe degrees of hypertension—for example, a diastolic pressure of 120—especially in women, may be compatible with a normal life span. Patients have been known to live for more than 15 years after a blood pressure of this severity has been discovered. Nevertheless, the prognosis depends to a considerable extent upon the height of the diastolic pressure.

Although statistically the chances of living to a good old age are reduced if the diastolic pressure in middle life is 100 or more, the hypertensive patient is not usually in any danger until his diastolic pressure reaches 120 or over. Even then the greatest care must be taken to ensure that the patient is not nervous or excited at the time of the examination, and is not showing tachycardia. In many persons who show an initial diastolic blood-pressure reading of 120 the resting level is far less and the prognosis relatively good. The age and sex of the patient will, of course, be considered, for every observer has noted that women withstand all types of hypertension better than men. Further assessment of the severity of the case is made by a consideration of the heart, the brain, the retina, and the kidney. This is done partly by an inquiry into symptoms and partly by examination of the patient.

Examination of the cardiovascular system may reveal pulsus alternans or gallop rhythm, and there may be a history of anginal pain or dyspnoea on exertion. Minor cerebral disturbances such as transient aphasia, paraesthesia, or monoplegia may precede a stroke. It is not necessary to make accurate tests of renal function if the case is clearly one of benign hypertension and there is no albuminuria. Because of the likelihood of a renal cause of hypertension in younger subjects, the discovery of a severe hypertension in a person under 45 should lead to a more thorough investigation, preferably in hospital.

Renal Hypertension

Whereas essential hypertension is not usually discovered until after the age of 40, renal hypertension may occur in quite young people and even in children. The hypertension is usually severe, often malignant in type, and the prognosis is bad. The most important causes are chronic nephritis and pyelonephritis, but some cases are due to congenital abnormalities of the kidney, to periarteritis nodosa, and to renal tuberculosis. Women who have suffered from one or more episodes of pregnancy toxæmia may develop severe and permanent hypertension.

Renal hypertension is suspected by the age of the patient, the usual absence of a family history of hypertensive

disease, and by a personal history of acute nephritis, or of attacks of cystitis, or other evidence of urinary infection. It is to be suspected also if the renal function has diminished out of proportion to the severity of the hypertension and if albuminuria is known to have preceded the onset of symptoms. Albuminuria is not invariable, however, and is often absent in the post-pregnancy and the pyelonephritic cases. Hypertension is frequently the result of a pyelonephritis which is no longer active, and a negative culture of the urine does not rule out urinary infection as a cause of high blood pressure.

All cases of severe hypertension in which a renal cause is suspected should undergo a careful investigation, including some tests of renal function, such as the urea-clearance test, and an intravenous pyelogram. The latter should not, however, be taken if the urea clearance is below 30% of the average normal. The chief importance of this investigation is to disclose rare cases in which the hypertension is due to unilateral renal disease. Any case in which sympathectomy is contemplated should undergo a similar investigation, which should also include an assessment of the cardiac condition by radiograph and electrocardiogram. In persons over 50 in whom a renal origin of hypertension is not suspected there is, in my opinion, nothing to be gained by submitting the patient to a series of tedious and expensive investigations.

Treatment

When symptomless hypertension is discovered by chance during the course of an examination for another reason, and the diastolic pressure is no more than 100 in a young subject, or 110 in an older person, the patient should not be informed of the discovery. No patient should ever be told the height of his blood pressure. These rules are even more important if the patient happens to be a doctor. On no account should menopausal flushings be ascribed to blood pressure. Most of the minor symptoms ascribed to hypertension, such as headache, bursting sensations in the head, and dizziness, are, in fact, commonly due to a superimposed anxiety state and are to be treated by reassurance and an atmosphere of confidence.

When more serious cardiac or cerebral symptoms have occurred, or when a very high blood pressure with a diastolic level of 120 or more has been discovered, which is not lowered by rest and reassurance, a more or less strict regime may have to be imposed, varying from reduced activity to complete rest. When cardiac breakdown is threatened or present, the treatment is the same as that for any other heart disease of equal severity. Diet has no place in the treatment of hypertension, except possibly in renal or malignant cases with uræmia and in hypertensives who are grossly overweight. The latter should be given a strict weight-reducing diet containing as much protein as possible and practically no fat. There is no contraindication to giving dextro-amphetamine in such cases.

Hypertensive headache of moderate degree will usually respond to the ordinary analgesic drugs. A few cases seem to react favourably to ergotamine. Severe paroxysmal headache, especially in malignant hypertension, may be

very difficult to relieve. The removal of a small amount of cerebrospinal fluid may cause temporary improvement, and I have had some cases which seemed to improve considerably on dextro-amphetamine or even amphetamine combined with simple analgesics. Sympathectomy may have to be considered in such cases, even for its purely symptomatic effect. As the management of hypertension varies so much from case to case, examples are given at the end of this article of the type of advice that I would give in a series of illustrative cases. I will now consider some of the more specific measures which have been used in the treatment of hypertension.

Thiocyanate Treatment.—The thiocyanates, if administered regularly to hypertensive patients, will produce a rather slight, inconstant, and unpredictable fall in blood pressure. Their use is dangerous unless controlled by frequent estimations of the thiocyanate level in the blood. Most physicians nowadays consider that the very doubtful gains of this treatment are not worth the trouble and the risk.

The Rice Diet.—Kempner (1944) has advocated the use of a diet consisting solely of rice cooked without salt, supplemented only by fruit and sugar. Such a diet is very low in protein and contains only traces of sodium. There is no doubt that it significantly reduces the blood pressure in most hypertensive cases, and that the blood pressure returns promptly to previous levels as soon as the diet is given up or if salt is added to the regime. Headache and other hypertensive symptoms are temporarily relieved, and papilloedema has been known to clear up in some instances. The majority of hypertensive patients are unable to continue on the diet for more than a few weeks, as it becomes very monotonous and distasteful. The rice diet, though interesting, is not a very practicable method of treating the ordinary case of hypertension.

Nephrectomy in Hypertension

As soon as it became known that human hypertension was occasionally due to unilateral renal disease and might be cured by removal of the faulty kidney a wave of enthusiasm for this method occurred in America and to a less extent in this country. Only in rare instances is the operation successful, and in most of the unsuccessful cases the evidence that the disease was entirely unilateral is unconvincing.

Nephrectomy should be seriously considered if the total renal function is normal and yet the intravenous pyelogram shows a non-functioning kidney on one side. The evidence should be backed up by cystoscopic observation of dye excretion, and preferably by retrograde pyelography. Nephrectomy is more likely to be successful in young persons who have no family history of hypertensive disease. The occasional successes have been dramatic and apparently permanent.

Sympathectomy in Hypertension

I now have experience of over 80 cases in which sympathectomy has been performed, in most of them by Professor A. M. Boyd. This series has recently been published (Platt and Stanbury, 1950), and it is difficult to do justice to the subject in one or two paragraphs. Undoubtedly sympathectomy is a measure which is applicable to only a small proportion of hypertensive patients. Most cases are either too severe to benefit by the operation or too mild to require it. Even in a carefully selected series really significant falls of blood pressure, if honestly recorded, result in less than 20% of cases. Most of these successes have been in young women with hypertension secondary to pyelonephritis.

On the other hand, the relief of headache and sometimes of papilloedema may be striking, even in cases in which the blood pressure does not seem to have been reduced. The operation should be reserved for young people with normal renal and cardiac function in whom severe hypertension causes symptoms. Extensive bilateral removal of the sympathetic chains as high as the fourth dorsal ganglia does not at present seem to me to give a higher percentage of successes than the more limited procedures advocated by Smithwick and by Adson. The argument that there is nothing else to be done will not lead to wise decisions when the advisability of sympathectomy is being assessed. It is possible that in the future slower acting sympathetolytic drugs of the type of pentamethonium iodide (Arnold and Rosenheim, 1949) may be used as an alternative to sympathectomy in some cases.

The results of sympathectomy may be briefly summarized by saying that in a very small group of cases the operation will produce results which cannot be obtained by any other means at the present time. It is still extremely difficult to predict the case in which the benefits will be worth while.

Illustrative Cases and Opinions

Case 1.—A man of 30 has been turned down at a life insurance examination because of high blood pressure. After he has been resting on a couch for five or ten minutes, and reassuring words have been spoken, the third blood pressure reading is only 145/90. There is no albuminuria.

He should be told that the slight rise of pressure is insignificant, and that he can engage in every kind of activity and stand on his head if he wishes. It is sometimes difficult to give this advice and at the same time explain why the insurance company is not willing to accept him. A synthesis of these two conflicting statements can usually be made, however, by references to the strange habits of actuaries and statisticians.

Case 2.—A woman of 35, without symptoms, states that she was sent to hospital for high blood pressure in the eighth month of her only pregnancy three years ago. She then had albuminuria and ankle oedema. Labour was induced. She wants to know the advisability of embarking upon another pregnancy.

The answer will depend largely on the height of the resting blood pressure. If this is normal, or nearly so—say 140/85—there is a reasonable chance of a successful pregnancy, though it should be carefully supervised, because recurrence of pregnancy toxæmia is common. If the blood pressure is moderately raised—say 160/100—the chances of a successful outcome are small. If the diastolic pressure is 110 or over the risks of a further pregnancy are very great indeed and the chances of a living child almost negligible.

Case 3.—A man of 42 complains of severe periodic attacks of headache and of recent deterioration in vision. His blood pressure is 230/140 and there is bilateral papilloedema. There is no previous history of renal disease. His father is said to have died of Bright's disease at the age of 49.

This is malignant hypertension. If renal efficiency is already very much reduced the outlook is hopeless and no drastic measures should be attempted. If the renal function is normal, or nearly so, sympathectomy might be considered, as it may give symptomatic relief and improve the retinal condition. It is extremely unlikely to be a success in causing significant reduction of blood pressure, and it is doubtful if it will prolong life to any extent.

Case 4.—A woman of 50 complains of menopausal symptoms and is greatly worried because high blood pressure has been discovered. The initial reading is 220/125, but after

resting the levels are 180/105. Her mother died of a stroke at 65. There is no history of renal disease.

She should be assured that she has not got "the bad or malignant form of blood pressure," that her symptoms are largely those of anxiety, that the present level of her blood pressure is not dangerous, that it comes down with rest, and that it is compatible with many years of useful and active life. It would be wise to consider her duties, activities, responsibilities, and anxieties, and to try to alleviate them so far as is possible, while avoiding any tendency towards a life of useless and neurotic invalidism.

Case 5.—A woman of 30, suffering from attacks of headache, is found to have a blood pressure of 220/130. There is no albuminuria, and the renal function is normal, but there is a history of several episodes of urinary infection in the past.

This is the type of case in which sympathectomy is occasionally very successful.

Case 6.—A man of 40, in whom high blood pressure has been discovered, is sent to a surgeon for an opinion on the advisability of sympathectomy.

He should immediately be sent to a physician. Surgeons have no experience on which to assess what the prognosis of the case will be if operation is not performed; nor are they usually expert in assessing cardiac and renal function. They should not be asked to select cases for sympathectomy.

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CIVIL DEFENCE SERVICES

GUIDANCE FOR LOCAL AUTHORITIES

Following up the Civil Defence Regulations approved by Parliament last year, the Minister of Health, Mr. Aneurin Bevan, has now given more detailed guidance to local authorities on the planning of the Civil Defence Services for which he is responsible under the Civil Defence Act, 1948. These services cover evacuation of the civil population; care of the homeless; billeting in war-time; ambulance services; and water supplies and sewerage.

Circulars sent last week to local authorities in England and Wales indicate how the services for which they would have local responsibility have been planned centrally and would be likely to operate should the need ever arise. Plans for evacuation, for example, are based broadly on the scheme in operation during the last war. It is hoped that the local authorities will now be in a position to work out their arrangements for the services in question, and to go ahead with the training of volunteers for the Civil Defence Corps, particularly the welfare and ambulance sections.

Evacuation

For the purpose of evacuation the system developed in the 1939-45 war has been adopted, and the country will be divided into evacuation, neutral, and reception areas.

Evacuation areas have, as a first step in planning transport arrangements, been formed into 18 convenient geographical groups; each of these groups is linked with certain specified reception areas.

Local authorities for evacuation areas will consider what administrative machinery they will employ and which officer will act as chief evacuation officer. The appropriate committee will then have to prepare drafts of the documents required for registration of members of the priority classes wishing to take part in the evacuation scheme. Premises to be used for registration and as assembly points will need to be determined. Preliminary arrangements will be made by local education authorities for the medical examination of school-children who register for evacuation. Plans for local publicity in the event of an emergency will have to be considered, as will the arrangements

to be made for the training in evacuation work of members of the Welfare Section of the local division of the Civil Defence Corps and other volunteers.

In reception areas the corresponding committees should select and earmark premises for the reception of evacuees and for use as "transit" hostels, sick-bays, etc. Preliminary arrangements will be undertaken for a canvass of billets. Different reception duties will be allocated among the council's existing staff and arrangements made for the training of the local division of the Civil Defence Corps and other volunteers who will be concerned with the reception, accommodation, and welfare of evacuees.

The relevant circular (37/50) stresses that in the view of the Minister the preparatory measures envisaged should not necessitate the appointment of additional senior officers to the council's staff. Some additional clerical assistance may be required, but in view of the imperative need for economy both in money and in manpower this should be kept to the absolute minimum.

Other Problems

County councils and county borough councils are being advised now on the first steps which should be taken in the light of the duties imposed upon them by the new regulations in regard to ambulance services (Circular 40/50). It is expected that plans will be made for the expansion in the event of war of the ambulance services provided under Section 27 of the National Health Service Act, 1946. Training will also be required for the ambulance sections of the local Civil Defence Corps and for the present ambulance staff. Generally speaking, the expanded ambulance service is visualized as a single integrated unit for conveying both war casualties and the ordinary sick. It is assumed that separate provision will be made by the Ministry for larger-scale transfers of patients between hospitals. At the same time the local ambulance services may be called upon to give some help with inter-hospital transport.

In most areas the number of ambulances needed in war will have to be increased to three or four times the peacetime establishment and the number of motor-cars needed will be between one-quarter and one-third of the augmented ambulance strength. The staff required for this purpose will have to be correspondingly increased on the scale of four people for each ambulance and two for each motor-car engaged whole-time, or their equivalents in part-time staff.

It is pointed out that in war the greater proportion of all ambulance staff would necessarily be women. It is proposed that plans should be put in hand for siting ambulance stations and for determining provisionally what arrangements should be made for the accommodation of the staff. Repair and maintenance facilities will need to be reviewed and increased. Since in wartime the ambulance service must be linked with the general civil defence control and communications system, and a separate system would be in existence for the operation of the fire service, it would not be possible for these two services to be combined, and those authorities who have at present a combined service will need to give thought to methods of re-establishing separate services in wartime.

Other regulations issued at the same time (Circular 38/50) relate to the care of the homeless. Here again the pattern follows that of the last war and rest centres are proposed with the kind of equipment and accommodation that became standardized by 1945. It will also be necessary to set up information centres, and for both purposes premises will need to be earmarked, particularly those which can be adapted for these purposes easily and quickly.

So far as water supplies are concerned (Circular 41/50) it is pointed out that the Government has initiated research into the effects of radioactive substances on water supplies. This research is still continuing and water undertakers will be given further information and guidance from time to time when results become available. A general direction was given during the 1939-45 war that undertakings should chlorinate their supplies. Most authorities have continued the practice since the war, but those who have not should be ready to ensure that all water is chlorinated, as a routine measure, before it is put into supply.

In yet another circular (42/50) authorities are asked to examine the situation in their areas and to consider what plans