ABSTRACTS OF CARDIOLOGY


These conditions are so termed because of the absence of associated septal defects, which rules out abnormal communications between the greater and lesser circulation.

First, the authors review cases published in the last 30 years in which diagnosis has been verified at necropsy: 68 of pure pulmonary stenosis, and 8 of pulmonary dilatation—including 8 personal cases, 4 of pure congenital pulmonary stenosis and 4 of pure dilatation of the pulmonary artery. Dilatation of the pulmonary artery is present in both conditions, verified post-mortem; the differential diagnosis cannot, therefore, be made radiographically, as the cardiac silhouette is similar in both. The presence or absence of murmurs or thrills is of no more value. The determination of the pressure in the right ventricle and the intensity of the second pulmonary sound are important. In pure pulmonary stenosis the pulmonary second sound is either normal or absent; it is always accentuated, and sometimes louder than the aortic second sound, in dilatation of the pulmonary artery. Of the two abnormalities, idiopathic congenital dilatation of the pulmonary artery is much the rarer.

A. I. Suchett-Kaye


Experiments on dogs were carried out to study the effects of interventricular communications on the ventricles and to clarify some problems in connexion with interventricular septal defects in human beings. The method used was the creation of an external interventricular shunt which could be either opened or closed to suit experimental conditions. On opening the shunt there was in the left ventricle an elevation of initial pressure, a decline in maximum pressure, and an increase in duration of contraction in relation to cycle length. The predominant changes in the right ventricle consisted in an elevation of both initial and maximum pressures. A further analysis of data suggested that the elevation of right ventricular pressure was not caused wholly by summation of right and transmitted left ventricular pressures, but was partly due to a compensatory response of the right myocardium, which dilated sufficiently to increase the initial length of its fibres.

At the Mayo Clinic in the 6 years beginning Jan. 1, 1940, 111 patients with hypertension, in whom records of normal blood pressure had formerly been obtained, came to necropsy. From the records the duration of hypertension and its [sometimes changing] degree were estimated, preferably from ophthalmoscopic findings but otherwise by manometric readings (Group 1, 140/90 to 200/100 mm. Hg; Group 2, 200/100 to 240/120 mm.; Group 3, above 240/120 mm.; Group 4 was diagnosed only after ophthalmoscopy. Cardiac hypertrophy was expressed in terms of percentage excess of heart weight above the calculated normal referred to body weight, 20% being added. This percentage hypertrophy was found to be closely related to the severity of the hypertension, but not at all related to its duration. Also, except in hypertension of Group 4, there appeared to be

In left-to-right ventricular shunt the more vigorous right ventricular action had two effects: (1) ejection of a larger volume of blood for return to the left heart; and (2) reduction of the fraction of blood shunted into the right ventricle during systole. In these experiments the aortic pulse pressure invariably fell on opening the shunt, and this was found to be due to a reduced left ventricular stroke volume. This work has also shown that a slow intravenous infusion of saline could restore the aortic pulse pressure so long as the right heart was not failing.

A. I. Suchett-Kaye


In 62 soldiers, aged 17 to 21, admitted to hospital for acute rheumatic fever, serial electrocardiograms were taken every other day during the first week and twice a week thereafter until the patient's discharge for convalescence. The limb leads and lead CF, were taken, and lead III was taken during normal respiration and again during held inspiration. Changes were determined by the limb leads alone. Only one case showed entirely normal records throughout. The most important changes were: alterations in T waves and S-T segments in 38 cases; first-degree auriculo-ventricular block in 26; prolongation of the Q-T interval in 22; elevation or depression of S-T segments in 14; other changes in 21 cases.

A. Schott


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no relation between the severity of the hypertension and its duration.

There was a preponderance of males among the cases in which the heart had become greatly enlarged in the shortest time. The hearts were smaller and there was a fairly constant age incidence among the women, and the percentage of males rapidly dwindled as the duration of hypertension increased. The women of the series seemed to have withstood their hypertension better than the men.

W. A. Bourne


By hypertension is meant a condition in which the pressure is greater than 160 mm. Hg systolic, and 90 mm. diastolic. It seems that in New Zealand circulatory disease (including cerebral vascular disease) accounts for over 40% of the total deaths, and is the greatest single cause of death. Moreover, although benign hypertension is common in New Zealand and tends to run a mild course, malignant hypertension and advanced glomerulonephritis are rare, as also are rheumatic fever and rheumatic heart disease; these findings differ from those in Britain and the U.S.A. The writers state that together malignant hypertension and advanced glomerulonephritis only account for 2 out of 169 cases of hypertension. From these and other figures they consider it very probable that malignant hypertension is not merely an accelerated form of benign hypertension but is either a separate condition or involves some additional factor.

In the present series, more than half of the deaths from circulatory disease occurred in patients with hypertension, and considerably more frequently in men than in women, although the sex difference as regards actual numbers of hypertensive subjects was not so great. From this it is inferred that the female vascular system tolerates hypertension better than does the male. By far the greatest proportion of deaths (about 55%) in hypertensive subjects occurred between the ages of 60 and 80, although elsewhere it is shown that, from the age of 20 onwards and particularly after 50, high blood pressure plays an increasing part in determining the mode of death.

T. E. C. Early


In 1910 and 1915 Bernheim published his view that a hypertrophied left ventricle by partial occlusion of the right ventricular chamber could produce the signs of right ventricular failure in the absence of pulmonary congestion.

The authors have studied the clinical and necropsy records in 33 cases of massive hypertrophy of the heart to at least twice the normal weight. Of these 33, 22 showed left ventricular hypertrophy. Four points were studied: (1) the initial symptoms of heart failure; (2) the weight of the liver and the lungs; (3) hearts with a left ventricular myocardium at least twice as thick as the right; (4) right auricular enlargement in the X-ray films. On the grounds of history alone no case was acceptable as one of Bernheim’s syndrome. Comparison of the weights of the liver and lungs failed to suggest any evidence of Bernheim’s syndrome, neither was gross eccentric hypertrophy of the left ventricle found to be associated with the symptoms expected. Finally, right auricular dilatation was not seen in the X-ray films.

The authors sum up by saying that they could find no clear-cut evidence of Bernheim’s syndrome in their material.

John Anderson


Paralysis of the left vocal cord associated with heart disease is relatively infrequent, about 80 cases having been reported. This article deals with 4 cases, in 3 of which there was mitral stenosis. The possible mechanisms producing paralysis are discussed, and it seems most likely that the dilatation of the pulmonary artery leads to compression of the left recurrent laryngeal nerve against the arch of the aorta and the ligamentum arteriosum. Dilatation of the pulmonary artery is a constant feature in mitral stenosis, certain forms of congenital heart disease, and in arteriosclerotic heart disease with failure of the left ventricle. The reported cases mainly fall into these groups.

James W. Brown


In this important paper the authors describe the effect of administration of dicoumarol to 19 patients for periods of 5 to 20 months. The patients receiving this treatment were those whose lives would otherwise have been severely restricted and in danger—patients with auricular fibrillation and a history of frequent embolic attacks, with phlebitis migrans and recurrent thrombophlebitis, and also some with coronary thrombosis and cardiac infarction. These patients were kept in hospital for a short period while their idiosyncrasies to the drug were studied, and thereafter reported twice weekly for prothrombin estimation and regulation of their dose of dicoumarol. In very stable cases the period between prothrombin estimations may be extended to 10 or even 14 days but this is not generally advised. Only intelligent patients who can be relied upon to report regularly for prothrombin estimations and to take exactly the prescribed dose of dicoumarol should be selected for this type of therapy.

The Link—Shapiro modification of Quick’s method was used for the estimation of prothrombin time, which was kept as far as possible between 30 and 35 seconds, the normal figure being 14 to 16 seconds. The thromboplastin used was checked daily to ensure its activity. Individual requirements of dicoumarol were found to vary between 175 and 800 mg. weekly, and did not seem to be related to age or weight, but to be affected by such things as protein consumption and, in one patient, by...
the amount of whisky taken. The prothrombin time was not affected by menstruation in most patients, nor was menstruation prolonged in patients receiving the correct dosage of dicoumarol. Water-soluble vitamin K analogue, 72 mg. 4-hourly, was given intravenously to patients whose prothrombin time exceeded 60 seconds. None of the patients showed any toxic effects, none had a serious hemorrhage, and all remained free from further thrombo-embolic episodes while under treatment.

G. S. Crockett

Failure of the Heart and Circulation. Terence East. 2nd ed. London: Staples Press Ltd., 1948 (pp. 144. 8s. 6d.)

The author has contrived to incorporate in his new edition the results of much of the work on the hemodynamics of the circulation that has developed during recent years with the use of the intracardiac catheter and other new techniques in cardiology. This has meant an extensive revision of the text, but the result is a successful handbook full of sound explanations and practical advice. He is careful to point out that the interpretations of some of these researches may still have to be revised, but emphasizes that many of the older ideas about heart failure have already been rendered obsolete. This probably explains why he does not commit himself about the value of digitalis in high output failure, yet, in spite of the contrary experimental evidence, many clinicians continue to acknowledge its usefulness. Not all will agree with the author's declared approval of theophyllin-ethylenediamine, nor with the clinical acceptance of Bernheim's syndrome, and mention might advantageously have been made of the routine digitalization of middle-aged patients with thyrotoxicosis before thyroidectomy as a valuable measure in preventing post-operative congestive failure.

J. L. Lovibond


The number of deaths from coronary thrombosis can be substantially, reduced as also can thrombo-embolic complications in endocarditis and cardiac infarction, by the proper use of anticoagulant therapy. This conclusion is based on the study of 1000 cases collected from 16 major hospitals on the eastern American seaboard. In this report are incorporated 800 case records. There are also a small series of 22 cases of rheumatic heart disease with auricular fibrillation and multiple embolic phenomena, and a further series of 19 patients for whom long-term ambulatory anticoagulant therapy was arranged.

The author believes that hemorrhage in the course of anticoagulant therapy is an overstressed danger, but he issues a warning that prothrombin estimations must be made by a skilled technician, and that there are certain obvious contraindications, such as visceral organic disease or possible bleeding surfaces.

G. F. Walker

Venous Thrombosis and Anticoagulants. K. P. Ball and H. O. Hughes. Brit. med. J., 1, 560–565, April 2, 1949. The authors describe 100 consecutive patients treated by them with anticoagulants, and review the present status of venous thrombosis with particular reference to incidence, sites of development, clinical features, the chief complication (pulmonary embolism), and the late sequelae (varicose veins and ulcers). They discuss treatment fully, and analyse its results in their series. They compare heparin and dicoumarol, and state the qualities necessary in an ideal anticoagulant.

Dicoumarol therapy needs strict clinical control and a reliable technique of prothrombin-time estimation. The authors describe such a technique. An appendix gives details of their methods and of commonly encountered difficulties.

A. S. Dixon


At necropsy on 99 patients who died from cardiac disease pulmonary infarcts or organized thromboses of the pulmonary arteries were found in 20, of whom 17 also had venous thrombosis of the lower limbs. Right-sided intracardiac thrombi were found in 8 of these 20 patients; 2 of the 8 had no venous thromboses in the lower limbs. The internal planter and posterior tibial veins and collaterals were most commonly the site of thrombosis, which was usually recent and unassociated with phlebitis. Inflammatory changes were also rarely present in the pulmonary arteries. In 14 of these cases pulmonary infarction with thrombosis of the corresponding pulmonary artery and venous thrombosis in the lower limbs coexisted. The authors conclude that pulmonary infarction is commoner than has been indicated in previous descriptions of necropsies on patients dying from cardiac disease, and is usually associated with thrombosis of the corresponding pulmonary artery, which in the majority of cases is due to an embolus from a thrombosed internal planter or posterior tibial vein.

[Observations of right ventricular pressure in 5 of these cases, presumably by means of cardiac catheterization, might well have led to an increased incidence of pulmonary emboli being reported.]

I. Ansell

Treatment of Congestive Heart Failure. H. A. Reid and W. Hughes. Lancet, 1, 593–598, April 9, 1949. In this study of 107 patients admitted to hospital with congestive heart failure during a period of 6 months particular regard has been paid to fluid and salt balances. In most cases the therapeutic contribution of salt restriction could not be assessed, as improvements which occurred may have been due to concurrent treatment. But in 4 cases, one of which it described, improvement appeared to be a direct result of a change to a regimen of salt restriction. [Even in the published case, however,
the change to a restricted salt intake and the clinical improvement both coincided with an increase in the frequency of mersalyl injections.

Salt excretion, with or without a water diuresis, increases when mercurial diuretics are given. Edematous patients who complain of thirst and of dry tongue are "brine-logged" rather than water-logged, and can be clinically relieved by a low-sodium diet and mersalyl injections, even when, as in one case, water intake is also restricted. In the acute stage of congestive failure, forcing fluid intake above 34 litres daily has proved dangerous. Some patients who have recovered from congestive failure under treatment in hospital may be maintained at home on a salt-restricted diet without digitalis or mercurials. In such cases the value of salt restriction is indicated by the return of edema when a free salt intake is allowed.

Practical measures for salt restriction in patients in hospital or at home are discussed. A. S. Dixon


The syndrome of short P-R interval with abnormal QRS complexes and paroxysmal tachycardia was first described by Wolff, Parkinson, and White in 1930 (Amer. Heart J., 5, 685). The 11 cases then described have been followed up and 41 new cases added to the series.

It is shown that this syndrome occurs commonly in young people and more often in males than females. Paroxysmal tachycardia was present in addition to the electrocardiographic abnormalities in 70% of the cases. The syndrome is compatible with a full healthy life and strenuous activity and, apart from the occurrence of paroxysmal tachycardia, is asymptomatic. Errors in the interpretation of the electrocardiogram are not uncommon. Usually the sum of the P-R and QRS intervals is the same in the normal and abnormal beats, but this is not always so. The authors consider that the accumulated evidence favors an accessory conducting pathway as the cause of the abnormality. Digitalis may or may not affect the abnormal complexes. In the majority of cases the electrocardiogram in a paroxysm of tachycardia shows normal ventricular complexes.

C. Bruce Perry


Fifteen cases of massive dilatation of the left auricle are described. All the patients had mitral stenosis and incompetence and in all but one the auricles were fibrillating. Owing to the absence of pulmonary hypertension little complaint was made of dyspnea. One patient was hoarse because of a recurrent laryngeal palsy; another had erosion of the 7th to 9th dorsal vertebrae. Ten complained of deep-seated pain in the right upper part of the chest; this was ascribed to ischemia of the auricular wall.

Clinical signs due to the massive size of the left auricle were pulsation to the right of the sternum and dullness at the right base. Bronchietatic changes from partial occlusion of bronchi were common; occasionally areas of segmental collapse were found. Bronchograms showed widening of the bronchial angle. The authors suggest that the condition may be due to the impingement of blood, because of mitral incompetence, on a left auricular wall, which has been weakened by a rheumatic infection.

C. W. C. Bain


Khellin is a crystalline substance extracted from the fruit of Ammi Visnaga, an eastern Mediterranean plant known to Arabic medicine as Khella. Decocations of the seeds have been used as an antispasmodic since ancient times. The authors compared the coronary vasodilator action of khellin with that of aminophyllin, using both the heart-lung preparation and the isolated rabbit heart. Khellin was found to be about four times as effective as aminophyllin. Since it has a prolonged action khellin is useful in the treatment of angina pectoris; it is given orally in doses of 50 to 100 mg. three times a day, or intramuscularly in doses of 100 mg. once or twice daily. The authors have treated 250 patients with angina pectoris with khellin; the results were good in 56% and moderate in 34%. In patients subjected to a standard exercise test the exercise tolerance was found to be increased after taking the drug in every case. Khellin did not appear to be of great value in cases of coronary thrombosis. Side effects of the drug were slight.

H. E. Holling


Three groups of patients were studied: (a) 7 with hypertensive but with no radiological evidence of cardiac enlargement; (b) 7 with hypertension and cardiac enlargement; (c) 7 with angina pectoris. All were given tocopherol by mouth in doses ranging from 150 mg. of mixed tocopherols to 600 mg. of α-tocopherol daily, for a month at a time alternating with placebos for a month. The patients were studied for from 5 to 20 months. It was shown that the blood level of tocopherol can be significantly raised by oral administration. No appreciable subjective or objective benefit was observed.

C. Bruce Perry