ABSTRACTS OF CARDIOLOGY


Details are given of a study of 25 cases of pregnancy complicated by congenital heart disease, 29 infants in all being delivered. There were 13 with a patent ductus arteriosus, 8 with interventricular defect, 4 with interauricular communications, 1 with pulmonary stenosis, and 4 of undetermined type. Toxemia was a common and severe complication. Premature delivery took place in over 25%. Labour tended to be shorter than the average, and forceps delivery was resorted to in over one-third of the cases although half of the patients were multipara.

All patients were classified according to the functional groups of the New York Heart Association, before pregnancy, during the first 3 months and the last 3 months, during labour, and later in the puerperium.

The blood pressure, vital capacity, venous pressure, and circulation times were investigated in many of the patients. It was found that decrease of vital capacity was most valuable in prognosis. A sudden fall in blood pressure was noticed repeatedly soon after confinement and gave rise to considerable anxiety; the mechanism of this is discussed. A patent ductus arteriosus was found to be the most serious of the congenital cardiac complications. All but 1 of the cases of cardiac failure were associated with this lesion, as was also the only fatality.

*Brailwaite Rickford*


A student was entrusted with the operation of transfusing a donor's blood directly into the veins of a patient with septicemia. He thrust the recipient's needle into the veins of the donor though fortunately failed to enter the veins of the septicemic patient with the other needle.

The subsequent attempts to carry out the transfusion caused the injection of about 200 ml. of air into the veins of the donor but no blood. The donor, whose arm veins became inflated was alarmed and eventually brought the operation to an abrupt end by pulling out the needle and releasing the tourniquet. His veins deflated but he was seized with a tickling sensation in the throat, with cough and violent dyspnoea. He lost consciousness for 4 to 5 minutes and did not recover his health for some days. For 5 months after this accident he was subject to attacks of paroxysmal tachycardia or palpitation lasting from a few seconds to a few minutes. The radiograph of his chest revealed a slight left ventricular hypertrophy. Eventually he had an attack of arrhythmia lasting for days and an electrocardiogram showed auricular fibrillation.

He had no subsequent attacks and later acted again as a blood donor.

The author considers this to be an instance of an autonomic excitation initiated by the presence of air in the pulmonary vessels.

*H. E. Holling*


Cytochrome C enhances the uptake of oxygen by the tissues. When injected intravenously it is capable of restoring to normal an electrocardiogram in which changes have been produced by inhalation of a 10% oxygen mixture. The authors have shown that cytochrome C in 50-mg. doses given intravenously to patients suffering from angina of effort is unable to increase their capacity for effort without pain.

*Allan Suchett-Kaye*


For the past 4 years the author has advocated a rice–fruit–sugar diet in hypertensive vascular disease and all forms of nephritis. This diet contains in 2000 calories, not more than 5 g. of fat, 20 g. of protein, 200 mg. of chloride, and 150 mg. of sodium. All fruits and fruit juices are allowed, sugar and dextrose are unrestricted, and supplementary vitamins are given. The effects of this diet on the blood and urine chemistry, blood pressure, heart size and electrocardiogram, oedema, and retinal arteriopathies in several hundred patients are recorded and illustrated by typical examples. [It is extremely doubtful if the inferences which the author draws from his data would stand up to strict statistical scrutiny.]

*Henry Cohen*


A series of 10 cases of auricular fibrillation and complete heart block, all in patients with advanced cardiovascular disease, were studied. The authors' two main points are that: (1) the presence of this combination, in the absence of a digitalis effect, implies a serious prognosis; (2) it is important to distinguish heart block due to intrinsic cardiac disease from that due to digitalis. In cases in which symptoms of digitalis intoxication are slight or absent the distinction can be made by observing serial electrocardiograms.

*R. T. Grant*

It was found that after administration of a single oral dose of quinidine to patients with auricular fibrillation the effect on the circus rate of the auricle was roughly parallel to the quinidine concentration in plasma but no strict quantitative relation existed. For example, 2 hours after oral administration of 0·8 g. of quinidine sulphate the circus rate fell from 402 to 285 a minute and the plasma concentration of quinidine was 2·6 mg. per litre, whereas 10 hours after the administration of quinidine the circus rate was practically the same, 292 a minute, but the plasma concentration was only 1·3 mg. per litre. From a further series of experiments on dogs it is concluded that such quantitative discrepancies are due to the fact that the effect on the heart is not proportional to the concentration of drug in either the plasma or the myocardium. Indeed, an excessive increase in the concentration in heart tissue leads to a decrease in cardiac effect.

*T. Semple*


In a series of 40 cases of myocardial infarction with and without ventricular aneurysm, all the cases with aneurysm were associated with an upward QRS complex in the right arm lead of the electrocardiogram. This suggests that absence of this feature in a case of myocardial infarction indicates absence of aneurysm. *R. T. Grant*


The authors review earlier studies on the arterioles of patients with hypertension, and present a comparable study of the arterioles of the skin. The wall to lumen ratio is lower in the hypertensive group, with a mean of 1·57 (70 cases), against 2·14 in the 52 control cases, there is, however, considerable overlapping. Moritz and Oldt (*Amer. J. Path.*, 1937, 13, 679) have already shown that the thickening of the wall and narrowing of the lumen which commonly indicate a state of hypertension may be completely absent in cases with hypertension of long-standing. Conversely they find (in agreement again with Moritz and Oldt) that arteriolosclerosis may exist in the absence of hypertension and without any obvious correlation with age. *A. C. Lendrum*


This paper analyses 51 cases of secondary tumours in the heart or pericardium from the necropsy records of the Royal Cancer Hospital. The primary tumours were distributed amongst most of the organs of the body. Carcinoma of the breast was the commonest primary tumour (14 cases); secondary growth usually involved the pericardium, alone or together with the heart muscle. and was sometimes first manifested many years after radical extirpation of the primary tumour, periods of 5 and 16 years being recorded. The pericardium was sometimes normal save for an isolated secondary tumour, but otherwise pericardial effusion, fibrous obliteration, or obliteration by massive deposits of tumour were found. Hydrothorax and ascites resulted from cardiac failure. The symptoms sometimes resembled those of subacute bacterial endocarditis. Dyspnea, tachycardia, and cardiac irregularities such as auricular fibrillation or flutter were frequent outstanding signs. Some symptoms were attributable to the location of the tumour, causing heart-block, or to pericardial or pleural effusion but were not pathognomonic and further investigations were required to establish the diagnosis, including paracentesis for pericardial effusion and cytological examination of the fluid for tumour cells, radiological examination of the heart including tomography, and electrocardiography; the value of this last proceeding is emphasized. When the primary tumour is known to be radiosensitive, high-voltage x-irradiation may be useful in the diagnosis and treatment of cardiac secondary growths. *L. Foulds*


In a routine examination of 2619 candidates in Texas the author discovered 20 females and 1 male in whom there was a systolic murmur over the subclavian artery (or arteries). The first 11 cases were dismissed as cases of functional murmurs, but the other 10 received more detailed examination. The murmur predominated on the left, appearing on that side alone 11 times; it appeared on the right side alone once, bilaterally 5 times, and in 4 cases the side was not noted. General medical examination and radiographs of the chest were negative, except in 1 case where there was inactive apical tuberculosis on the opposite side to the murmur. The murmur is constant, fairly loud and definite, and accentuated by deep inspiration or gradual abduction of the arm. The greater the abduction the louder the murmur up to 135 to 150 degrees, when it disappeared because the blood flow to the arm had ceased. No case was observed which was thought to be a scalenus syndrome, and in only 1 was the murmur thought to derive from costo-clavicular compression. The presence of the murmur when the subject is in a relaxed sitting position suggests some as yet undefined mechanism by which the artery is obstructed even before abduction begins. The preponderance on the left side would indicate an anatomical variation, but in the absence of symptoms surgical exploration was not thought to be justified and the question of causation is unsettled. *H. T. Simmons*
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This little book does not pretend to be anything more than its title implies. A short descriptive text introduces each series of cardiograms, which are beautifully reproduced and clearly annotated. However, no attempt is made to outline the elementary physics of electrocardiography, and a description of unipolar leads is entirely omitted. A brief essay on cardiac radiology precedes a well selected and representative collection of excellent radiograms, which includes all the more common cardiac conditions. The reproduction of these plates is of the highest quality, and indeed the whole volume reflects great praise on the publishers. The omission of an index is regretted.

J. L. Lovibond


A study of the vital statistics for the city of New York from 1934 to 1944 reveals that the death rate from heart disease, particularly coronary disease, is inversely related to the rise of monthly temperature, and not related to the relative humidity of the atmosphere.

H. E. Holling


"Amidone" (methadon, "physeptone") (6-dimethylamino-4, 4-diphenyl-3-heptanone hydrochloride), which resembles morphine in its action, was given to a number of patients with peripheral vascular disease who suffered from pain at rest. The dose was 5 to 15 mg. by mouth. The drug relieved the pain at rest but was ineffective in intermittent claudication. One of the 18 patients developed a hemorrhagic urticaria and ambulant patients suffered from light-headedness, nausea, and vomiting.

H. E. Holling


A comparison was made by the use of plethysmographic methods of recording, of the blood flow in the foot (predominantly skin) and calf (predominantly muscle) in human patients, before and after sympathectomy of the lower limbs for peripheral vascular disease. The results show that, whereas the blood flow through skin was increased by sympathectomy, that through muscle was relatively unchanged. Exercise, local heating, and arterial occlusion and release were effective stimuli in increasing blood flow through sympathectomized muscles, suggesting that vasodilators of metabolic origin, and not the innervation, are important factors in the blood supply of muscles. The results indicate that sympathectomy is of value clinically for increasing the blood flow through skin, but not through muscle.

R. A. Gregory


In 333 examinations of 305 patients the transverse diameter of the heart as measured by direct percussion was compared with that obtained from a teleradiograph. 74% of the values obtained from percussion were within ±10% of the values obtained from radiography and 88% were within ±15% of the radiographic values. Fifty-five comparable examinations on 45 women gave similar results. The clinical method of percutting the heart size appears therefore to be of value.

H. E. Holling


Two cases of perforation of the infarcted interventricular septum are reported. In one of them the diagnosis was made during life. A review of reported cases revealed 56 similar, in 15 of which the diagnosis was made during life. The condition should be suspected in any patient who, shortly after a myocardial infarction, suddenly develops a systolic thrill and murmur in the third and fourth intercostal spaces just to the left of the sternum. These patients tend to develop right ventricular failure. In 38 cases the survival time was described, this being less than a month in 31. A further 6 patients died within a year, and 1 patient lived 4 years and 10 months. Out of 45 patients examined 43 had a systolic murmur, which in 22 was associated with a thrill. Rupture of a papillary muscle following infarction may be confused with this condition, but in the former the murmur tends to be heard best nearer to the apex, the patient's condition deteriorates rapidly, and the heart failure is left-sided rather than right-sided.

C. Bruce Perry


Blood volume changes were investigated in 20 patients with hypertension who had undergone sympathectomy. There were 11 women and 9 men; their ages ranged from 22 to 50 years and the periods of follow up from 3 to 18 months. Plasma volume was measured photo-colorimetrically with the T 1824 dye; whole blood and red cell volumes were calculated from hematocrit readings (Wintrobe). No consistent post-operative changes in the blood volume were found, and no consistent deviation from "normal" values was observed pre-operatively. It was noted that in 5 patients in whom the red cell volume was low before operation the response to sympathectomy was poor, whereas in 5 patients in whom the red cell volume was normal, or above normal, the results were good. In patients with long-standing vascular disease there was a tendency to low blood volume.
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The effect of vitamin E orally in doses of 300 to 400 mg. daily was observed in 22 patients with various forms of heart disease. The authors conclude that, although their numbers are few, they cannot, from the evidence, recommend vitamin E in the treatment of congestive heart failure, angina pectoris, or hypertension.

C. Bruce Perry


The author points out that mechanical overload is not necessarily the whole explanation for hypertensive heart disease. Many of the features of hypertensive heart disease may be found without hypertension. He calls attention to the possible pathogenic role of adrenaline and allied substances. Adrenaline intensifies the oxygen consumption of the heart, and may induce a state of anoxia, identical with experimental anoxia in diseased human hearts and in animal hearts after severe exercise. The author considers that anginal attacks are accompanied by abnormal elevation of the adrenaline sympathetic levels in the blood. Hypertensive heart disease is not necessarily accompanied by any rise in adrenaline level in the blood, but abnormally high elevations of the levels of this and similar substances may follow physical exercise in patients with hypertension. The electrocardiographic features of hypertensive heart disease are similar to those which result from the injection of adrenaline, and it is emphasized that the abnormal electrocardiogram may revert to normal after sympathectomy, even if the patient remains hypertensive. The author develops similar arguments to account for changes in the heart in uremia, thyrotoxicosis, and beriberi. These arguments are supported by a very extensive bibliography of 235 references. J. McMichael

Endocardiac Potentials in Right Heart Hypertrophy. Comparison with the Oesophageal Electrocardiogram.


Battro and Bidoggia have drawn attention to the similarity of the ventricular complex with the electrode in the right auricle and with the oesophageal lead in both healthy and diseased subjects. This paper deals with 5 cases of right-sided hypertrophy. The electrode, attached to a fine insulated wire, is introduced through the right external jugular vein, "sodium amytal" being used as premedication. There were no untoward effects, penicillin being given subsequently for 48 hours. Standard, unipolar, and precordial leads, and leads with the electrode at different intra-auricular and intra-ventricular levels were taken. The P wave is negative with the electrode at a high auricular level and gradually becomes positive as the electrode passes into the ventricle; the QRS complex at auricular level was positive in 3 cases and negative in 2. The ST segment was elevated in 3 cases when the electrode was in the ventricle. The oesophageal leads, taken at auricular level, were found to have QRS complexes similar to those taken at intra-auricular level. Very similar complexes were also found with the unipolar VR lead. Some anomalous changes were thought to be due to the impulse passing over the wall of the interventricular septum. Paul B. Woolley


In lightly anæsthetized intact dogs, coronary blood flow was measured by the nitrous oxide method, coronary sinus blood being obtained by catheterization. Cardiac output was estimated by the direct Fick method. Hypotension was produced either by the subarachnoidal injection of procaine solution or the intravenous injection of tetraethylammonium chloride. A decrease in cardiac output and cardiac work (cardiac output x aortic pressure) occurred. Coronary blood flow decreased but the rate remained relatively high in relation to the decreased work. Cardiac efficiency (work/oxygen consumption) was reduced but there was no evidence that the heart was less able to perform the work required of it, that is, that the hypotension was harmful to the heart. R. A. Gregory


It is generally thought that heart disease due to beriberi is accompanied by right heart enlargement and manifestations of a rapid circulation, and that a response to aneurin (thiamin) therapy is diagnostic. More recently, the diagnosis has been made when there is evidence of gross dietetic deficiency together with peripheral neuritis in the presence of an enlarged failing heart for which there is no other explanation. Even failure to improve with aneurin does not exclude the diagnosis. Should the heart respond well to the specific vitamin relapses may still occur.

Two cases are described. In the first, there was a gross nutritional inadequacy, with widespread œdema, cramps in the legs, and incoordination. The patient improved on treatment with the ordinary cardiac remedies, with aneurin, but very quickly relapsed. A further improvement occurred for a time, but in a third attack he died. Apart from some degeneration of the myocardial fibres and infiltration with small round cells, no other explanation of the failure was found at necropsy. In the second case the onset was similar, but the patient made a good recovery when given an adequate diet and large doses of vitamins orally and parenterally. The symptoms cleared up at the end of 4 months. J. McMichael
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R. T. Grant

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