ABSTRACTS OF CARDIOLOGY


Standard and unipolar leads were recorded in normal men and in dogs, certain variations being made in normal electrocardiographic procedure: (1) The connections to the galvanometers were kept constant, whatever lead was being recorded. (2) In recording augmented unipolar leads, one set of electrodes was applied to the extremities nearer the elbow or knee than is usual, and a second set near the wrists and left ankle; these distal electrodes were connected through a resistance of 100,000 ohms to a Wilson central terminal. Amplitude was gained by increasing the degree of amplification rather than by removing one electrode contact. Intracavitary potentials were recorded in dogs.

With this technique it was found, when multiple leads (60 or more) were taken from the thorax, that a line could be drawn round the thorax; from points cephalad to this the records had an initial upstroke, while those from points caudal had an initial downstroke. The amplitude of these initial waves was shown to change in an orderly manner, the greatest positivity being cephalad and to the right and the greatest negativity caudal and to the left. When the galvanometer connections were kept constant aVr was not the reverse of lead I, and aVF leads from the lower part of the thorax had identical polarity. In view of these observations it is suggested that the currently held theory that only depolarization of surface muscle is recorded in the electrocardiogram must be discarded, or alternatively it must be accepted that deep potentials are recorded. It is claimed that the findings recorded can be explained adequately as due to depolarization waves, transmitted along muscle strands and parallel to the direction of its fibres, which are approaching the electrode in one case, and receding from it in the other, thus producing a positive and a negative deflection respectively.

[This closely reasoned paper should be read in its entirety. Provocative rather than convincing, it yet presents data which are not easily reconciled with current orthodox views.] William A. R. Thomson


Acute primary pericarditis is believed by the authors to be more common than is generally recognized. Five illustrative cases are described. The chief complaint was of substernal or precordial pain, often during a respiratory infection. Clinical signs of a pericardial effusion and pleural effusion were sometimes found. Serial electrocardiograms showed elevation of the RS-T segment and inversion of the T wave. In some cases the electrocardiographic signs persisted after the symptoms had disappeared. Radiological examination showed a typical change in cardiac silhouette. The condition may recur. No definite etiological factor has been found and the treatment is symptomatic. The relation of the condition to constrictive pericarditis has not been determined.

H. E. Holling


Twenty cases of subacute bacterial endocarditis have been closely followed up for 27 to 63 months after treatment with penicillin. No case relapsed or became reinfected. One patient died. Of the remainder, one developed a hemiplegia, and one congestive heart failure, but the rest are working as hard as before their illness. Four have married and two have borne children without difficulty.

No heart normal in size before treatment became enlarged. In 4 cases the heart increased in size during treatment, but no regression or further enlargement has been noted. One patient has acquired aortic incompetence since infection. No others show ausculatory evidence of fresh valvular damage. Three patients developed paroxysmal auricular fibrillation, one frequent ventricular extrasystoles. In 2 cases of infection of congenitally stenosed pulmonary valves exercise tolerance has now increased. The difficulty of assessing the roles of bacterial and coincident rheumatic infection is stressed.

D. Verel


Cases of subacute bacterial endocarditis treated at the Massachusetts General and West Roxbury Veterans Administration Hospitals are discussed. Comparison of the cases treated in 1944-46 with those treated in 1947-49 shows that the disease incidence has fallen by almost half, but the condition has become more resistant to treatment by antibiotics. This change is thought to be due to the increasing use of antibiotics for other comparatively trivial ailments, resulting in cure of the undiagnosed cases of endocarditis and increased resistance to antibiotics in the remaining cases.

Not a single instance of bacterial endocarditis superimposed on coarctation of the aorta occurred in this series of 97 cases. Congenitally bicuspid aortic valve was a frequent underlying lesion in fatal cases.

Death was more frequently due to irreversible cardiac, renal, or cerebral changes, than to failure to combat the
infection. This indicates that the infection should be recognized early and adequately treated if the outcome is to be successful.  

H. E. Holling


The radiological finding of systolic expansion of the left auricle in a patient with suspected mitral disease is usually taken as proof of mitral incompetence. The authors point out that of the cases of mitral disease reported by Lenègre there were 19 which did not show systolic expansion of the left auricle; of these, 4 patients had characteristic murmurs of mitral incompetence. There were 52 with systolic expansion of the left auricle but of these 10 had no systolic murmur and were thought on clinical grounds to have pure mitral stenosis. The authors’ doubts appeared to be confirmed by a case of systolic expansion of the left auricle which they record. At necropsy the valves, though stenosed, were completely competent.

They conclude that systolic expansion of the auricle is not pathognomonic of mitral regurgitation but is mostly due to an upward movement of the atrioventricular septum during ventricular systole. The sign is not one of mitral incompetence but of mitral disease and consequent dilatation of the left auricle.

H. E. Holling


The nature of the myocardial involvement in Friedreich’s disease is not known exactly but the changes may be of diagnostic value.

The clinical signs are tachycardia, especially paroxysmal, auricular fibrillation, and heart block; there may also be an apical diastolic murmur associated with cardiac dilatation. In their series the authors found an abnormal electrocardiogram in 5 out of 8 cases. In only 2 cases were there clinical signs of heart disease, an apical diastolic murmur with enlargement of the left ventricle.

Paul B. Woolley


Seven cases of bilharzic cor pulmonale were described. In one of the patients necropsy was performed and the detailed pathological findings recorded. Diagnosis of early cases can be made and confirmed radiologically. The X-ray appearance is that of the well-known “mitral configuration.”

The responsible lesions are mainly vascular, consisting of obliterator arteriolitis, produced by the passage of bilharzia ova through the arteriolar wall in an attempt to form extravascular parenchymatous tubercles. Healing of the intimal and medial lesions results in obstruction, which in some arterioles is complete. This is eventually followed by dilatation and atheroma of the main pulmonary artery and by marked hypertrophy of the right ventricle.

Hemoptysis was observed in 2 patients in the series.—Author’s summary


In this paper two cases of aortic embolectomy are described in detail.

Both patients were women with rheumatic heart disease and auricular fibrillation, and in both cases the presenting symptom was a sudden feeling of numbness in both legs, with relatively little lower abdominal pain. In both life and limb were saved.

The condition and the technique of operation are discussed. Operation is always worthwhile, because the result of conservative treatment is usually disastrous either to limb or life.

F. B. Cockett


Hemosiderotic foci of varying extent were found in the lungs of patients with mitral stenosis only when there was hypertrophy of the right ventricle, foci being strikingly absent when there was concomitant tricuspid stenosis. In a proportion of cases this pulmonary hemosiderosis can be detected many years before death and is sometimes present in symptomless cases.

W. S. Killpack


A case of anasarca with marked venous congestion but without evidence of pulmonary engorgement is described. Aortic incompetence was present and a chest radiograph showed gross enlargement of the left ventricle, the lung fields being clear. At necropsy the left ventricle was found to be much hypertrophied, measuring 3.5 cm. in diameter. The septum measured 3 cm. across and bulged into the cavity of the right ventricle, reducing this to a slit. The authors suggest that Bernheim’s syndrome should be diagnosed in cases of heart disease whenever left-sided failure would be anticipated, both from aetiological considerations and from the presence of enlargement of the left ventricle, and yet signs of systemic venous enlargement far outweigh those of pulmonary congestion.

C. W. C. Bain


The author concludes that the methonium drugs have no place in the routine management of hypertension, though they may be of value in treating certain resistant related symptoms. There is as yet no clear evidence that continuous reduction of blood pressure by drugs
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that paralyse the autonomic nervous system will prove beneficial in the long run to hypertensive patients, and it may well prove harmful to some. Even if desirable, such reduction is not easy to achieve with these compounds.  

T. Semple


The effect of khellin was tested in 9 cases of ischaemic heart disease. Objective evidence that khellin caused coronary vasodilatation was supplied by means of both the effort test and the anoxaemia test. Electrocardiograms of 4 cases provide convincing evidence that khellin is therapeutically active. Only in 1 of the 9 patients was the condition not improved by the drug. Nausea and vomiting of moderate severity occurred in 3 cases. The dose was 50 mg. orally three times a day for 2 to 4 weeks.

Paul Wood


The authors conclude that the administration of 100% oxygen had no influence on myocardial anoxia in patients with acute myocardial infarction or angina pectoris in which blood arterial oxygen saturation was normal. As a therapeutic method for the relief of intractable pain it has no place. There is even evidence that hyperoxygenated blood may interfere with the reactive hyperaemia evoked by myocardial anoxia. This is, however, no contraindication to the routine administration of oxygen whenever other indications for its use in such cases are present.

J. L. Lovibond


The post-mortem findings in 4 cases of persistent truncus arteriosus occurring in infants are reported. Three of the cases were of the "partial" type in which there is some evidence of division of the truncus. The fourth case was an example of the "complete" form, in which there is no division of the truncus and the pulmonary arteries arise directly, and independently, from the common arterial trunk. In a valuable discussion of the radiological appearances it is noted that in 2 of these cases the "diagnostic" shelving of the right ventricle in the left anterior oblique view, described by Taussig, was absent.

James W. Brown


In 150 well-authenticated cases of myocardial infarction the relation of the duration, location, radiation, and mode of onset of pain to the mortality rate was studied.

The investigators suggest that, if the cases of severe pain and death before the patient is seen by a doctor are disregarded, there does appear to be some relation between the duration of the pain and the gravity of the prognosis; pain of over 24 hours' duration is associated with the highest mortality (39%). In cases in which pain is limited to the thorax the prognosis is worse than when pain radiates to the neck and limbs. It is suggested that in the former cases the infarction is more dangerous, producing a greater degree of shock and therefore a lessened perception of pain.

The authors point out, however, that these relations are by no means constant. J. B. Wilson


Among 527 patients with congenital heart disease of the cyanotic type treated at the centre for cardiovascular disorders at the Broussais Hospital, Paris, 29 did not show the usually associated right electrical axis deviation. The electrocardiogram in 22 showed left axis deviation, and in the remaining 7 the electrical axis was normal. When left axis deviation is present in a case of congenital heart disease with cyanosis two conditions come to mind immediately: tricuspid atresia and the much rarer condition of coarctation of the aorta of the infantile type (in children after the age of 2 or 3).

A. I. Suchett-Kaye


Studies of abnormal left ventricular pulsation in 70 cases of myocardial infarction and in 15 other cases were undertaken by means of electrokymography.

Abnormal paradoxical left ventricular pulsations were detected by cardioangiography in 48, and by electrokymography in 54 cases out of the 70 cases of myocardial infarction. In respect of localization of the infarcted area, there was correlation between electrocardiography and electrokymography in 100% of cases of anterior-wall infarctions only. Paradoxical pulsation of the left ventricle was detected in a number of the patients with left ventricular hypertrophy but no evidence of myocardial infarction. Hence, the authors conclude, "the finding of paradoxical pulsations on the fluoroscope or electrokymogram does not permit one to conclude that myocardial infarction has occurred."

A. I. Suchett-Kaye


During the course of 3 years more than 1000 patients with defective circulation in the lower limbs were investigated at the Manchester Royal Infirmary. As most of the patients complained of pain, differential diagnosis was required from a number of conditions, including osteoarthritis, foot strain, and meralgia paraesthetica.
Apart from a few cases of traumatic thrombosis, the disabilities were classified as juvenile obliterative arteritis, primary popliteal thrombosis, and senile obliterative arteritis, the first two usually being associated under the general term “thromboangiitis obliterans” or “Buerger’s disease.”

Despite its name, the last-mentioned condition occurs in a variety of age groups. In diffuse lesions arteriography shows that the main vessels are narrow and irregular; the arterial walls may be calcified. Thrombosis of the popliteal artery occurs in nearly 50% of cases. The localization of the thrombotic area may depend upon repeated injuries caused by movement of the knee joint. On the other hand, the onset of thrombosis may be determined by hypotension due to prolonged rest in bed. Thrombosis of the superficial femoral artery affects about 13% of cases. In this condition the patient experiences claudication in an apparently healthy limb. Although nutritional changes are absent, gangrene of the limb is more likely to result from femoral thrombosis than from popliteal thrombosis. The distal type of senile obliterative arteritis is characterized by the sudden onset of ischemic changes in the hands and feet, accompanied by transient attacks of gangrene of the superficial tissues.

Juvenile obliterative arteritis begins in the small arteries of the feet and results in gangrene of the lower limbs. Fungus infection of the toes may constitute an important factor in the etiology of the disease.

A. Garland


Harvey’s classic has been translated into many tongues, English, Spanish, German, Russian, Danish, and Swedish. This is the first authentic translation into the French language since Charles Richet, 1879. It forms a dignified production, carrying all the authority and enthusiasm of Professor Laubry and reflecting his profound admiration of Harvey, without whom, he suggests, physiology, complex as it has now become, “would be but a dead letter.” The facsimile of the full original Latin text is preceded by Laubry’s scholarly appreciation of the discovery of the circulation of the blood, which he divides into three periods, Hippocrates to Galen, the Renaissance, and finally Harvey. His translation which follows is faithful to the original, yet free enough in style and modern idiom to be clear and readable.

J. L. Lovibond

Congenital Heart Disease. J. W. BROWN, M.D., F.R.C.P., Physician to the Grimsby General Hospital, etc. London: Staples Press. Second edition. (Pp. 344; 30s.) This new edition has been partly rewritten. It contains as did the first edition, a full account of the embryology, morphology, and anatomy of congenital diseases of the heart. In spite of the large field covered, and the numerous references to other works, the book is a pleasure to read. The completeness and the full bibliography, make it valuable for reference. The book is attractively printed and the illustrations are excellent.

Dr. Brown still believes that the maladie de Roger is the commonest congenital abnormality of the heart met with in child life. His wide experience, drawn from the study of so many children, makes it likely that his figures are more representative than those of some recent series, which appear to be unduly influenced by selection. Unfortunately, as there is scant reference to the common mild type of pulmonary stenosis, and none to the loud parasternal systolic murmur heard not infrequently in normal children, doubt still remains.

The electrocardiography is inadequate, being limited to the routine limb leads, whilst the value of the second sound in the pulmonary area as an aid to diagnosis receives little comment. In spite of minor blemishes the general excellence of this book is such that it must find a place in the library of all interested in heart disease.

W. O’Brien

Quinidine in Disorders of the Heart. HARRY GOLD, M.D., Professor of Clinical Pharmacology at Cornell University Medical College, etc. Paul B. Hoeber, Inc., N.Y. 1950. Pp. 115. 16s.

The dangers of quinidine therapy have, perhaps, been responsible for excessive caution in its use. Indeed, many of the defeats in quinidine therapy, and even some of the disasters, are often due to using too conservative systems of dosage. The author of this excellent monograph points out that the effective dose of quinidine has to be determined for every individual. In arriving at this the patient’s co-operation is often called for. There is scope for much wider flexibility in its administration; in one case the drug had been taken in the large dose of 60 grains (4 g.) a day for 14 years with no ill effect. In other cases the therapeutic result is best achieved by prescribing a dosage scheme to produce a pyramidal summation effect. The initial small “test” dose is probably unnecessary. Good reasons are given against the simultaneous use of digitalis and quinidine.

A refreshing book, which deserves to be widely read.

J. L. Lovibond


Cases are reviewed and the authors then quote 219 cases of acute pericarditis. Of these, 14 were diagnosed as having non-specific benign pericarditis. It is noteworthy that the possibility of coronary thrombosis was considered in all the cases.

This essentially benign disease with a good immediate and ultimate prognosis must be distinguished from myocardial infarction. In the former a friction rub is present at the beginning of the illness and lasts a week or more; in the latter it occurs 2 or 3 days after the onset of the pain and is typically transient. The pain in the former is intermittent, and may last for 2 or 3 weeks.

Geoffrey McComas

The histological changes found in the lungs in haemosiderosis of cardiac origin are described. The haemosiderosis which results from prolonged left ventricular failure is indistinguishable from that due to mitral stenosis. These focal accumulations of haemosiderin are believed to be the end-result of haemorrhages from the broncho-pulmonary anastomoses in the mucosa of the terminal bronchioles. The haemorrhages are believed to follow variceous distension of the anastomoses brought about by raised pressure in the pulmonary arteries, the exit side of the anastomoses. In mitral cases the increase is absolute and persistent; in cases with remittent left ventricular failure there are periodic falls in the bronchial-arterial pressure. From the accumulations of siderophages in the group of alveoli which constitutes the focus, soluble iron reaches the adjacent stroma and there produces damage followed by reactive changes. These in turn, by lymphatic obstruction, tend to perpetuate the accumulation and so accelerate the vicious circle. [Author’s summary.]


This monograph records the author’s experience with cervico-thoracic ganglionectomy, consisting of removal of the stellate ganglion and section of the 2nd, 3rd, and often the 4th thoracic ganglia. A group of 105 patients were operated upon, and a control group of 88 patients with similar symptoms and signs were observed.

Of the 105 patients, 11 died following operation. The mortality rate within 2 years of admission was shown by statistical analysis to be no greater in the operated group than in the control group. The majority of the patients still alive have been followed up for more than 3 years. Definite relief of pain was obtained in 52% of the patients surviving the operation, and some relief in a further 15%, in whom the effect was difficult to evaluate because of progressive cardiac decompensation or other post-operative developments.

The author concludes that the operation should be reserved for a group of patients who, after an adequate period of observation cannot be controlled effectively on a medical regime. The operation is contraindicated by a history of myocardial infarction followed by a permanent drop in blood pressure, by cardiographic changes indicating severe myocardial damage combined with cardiac enlargement, and by the presence of moderate or marked cardiac insufficiency. *D. W. C. Northfield*


In view of controversial opinion concerning the clinical value of the unipolar limb leads in the diagnosis of posterior infarction in cases in which a large $Q_3$ is the only abnormality in the standard-lead electrocardiogram, a comparative and critical study of $Q_2$, $Q_3$, and $Q_{AVF}$ was undertaken in 109 cases in which $Q_3$ was at least 25% of $R_3$.

It is concluded that the mere presence of a deep $Q_3$ with or without an inverted $T_3$ is not a reliable diagnostic sign of posterior myocardial infarction, and that while the finding of a significant $Q_3$ is definitely helpful in the diagnosis, its absence does not rule out the possibility of a posterior wall lesion; but that the use of the unipolar leg lead can be of real help in the differentiation between the normal and abnormal $Q_3$ and thus in establishing or excluding the diagnosis of posterior wall infarction.

*A. I. Suchett-Kaye*


The dietary history of 139 healthy males and of 90 who had suffered myocardial infarction before the age of 40 was investigated. There was no significant difference in the amount of cholesterol contained in the diets of the two groups, nor did the level of cholesterol in the serum appear to be related to the dietary intake. Judging by this study there appears to be nothing to be gained by restricting the intake of cholesterol-containing foods by patients with coronary artery disease.

*H. E. Holling*


In England and Wales the number of deaths from coronary heart disease doubled between 1938 and 1948. This might be due to the substitution of "coronary thrombosis" for "myocarditis" in the certificates, but the number of deaths from rupture of the heart found at coroner’s inquests more than doubled during the same period. Also the number of recent infarcts found at necropsy at the London Hospital increased seven-fold between the period 1907 to 1914 and that of 1944 to 1948, the greatest increase being from 1916 to 1919, at a time when coronary occlusion was not diagnosed clinically.

The incidence of severe coronary atheroma, however, has decreased. Examination of the necropsy records at the London Hospital shows that there was less advanced atheroma, as measured by calcification of the arteries, in 1944 to 1949 compared with the years 1908 to 1913. The decrease took place mainly during the two war periods and may be ascribed to the rationing of fats.

The problem of why coronary heart disease should increase while atheroma is decreasing is discussed. It seems that while atheroma provides the basis for coronary occlusion, there are precipitating factors affecting the coagulability of the blood. It may also be that calcification of the artery represents a stage of healing, and that subintimal haemorrhages, possibly with concomitant spasm, are more likely in the earlier stages. In conjunction with the unknown precipitating factors this might account for the tendency in recent years for coronary occlusion to occur in younger age groups.

This paper establishes the fact that in spite of a decreasing incidence of calcified coronary arteries,
myocardial infarction has increased in the last 40 years much more than can be accounted for by the ageing of the population.  

C. W. C. Bain

Some Aspects of the Pulmonary Circulation in Normal Man and in Chronic Cardiopulmonary Diseases.  


The author reviews the additions made in the past few years to our knowledge of the pulmonary circulation and reports certain personal observations. In 10 normal people the range of pressure was found to be: pulmonary artery, systolic 22±2.9 mm., diastolic 8±1.7 mm., mean 13±2.3 mm. Hg; pulmonary capillary pressure 5 mm. Pressure-pulse tracings from the pulmonary capillaries show two distinct positive waves, one of which is thought to be the forwardly transmitted pulmonary systolic pulse, the other the backwardly transmitted left atrial pulse. The latter disappears in auricular fibrillation.

In left ventricular failure there is a rise in the filling pressure of the left ventricle which is transmitted back through the lungs and results in an increased pulmonary arterial pressure. In diseases of the lung restriction of the pulmonary vascular bed results in a rise of pulmonary arterial pressure, particularly under conditions such as exercise when the blood flow is increased. In chronic pulmonary emphysema the elevation of pulmonary arterial pressure shows some relationship to the degree of arterial oxygen saturation. Chronic anoxia due to lung disease leads to an increase in blood volume, polycythemia, and in increase in cardiac output. These changes put an increased strain on the right heart, which hypertrophies and then fails. In 4 cases of emphysema of varying severity it was found that the more severely affected cases showed a smaller increase in cardiac output on exercise and a greater increase in pulmonary arterial pressure than the milder ones. In chronic lung disease therapy should be directed towards overcoming infection with antibiotics, and the relief of bronchial obstruction by the reduction of bronchial secretion and the use of atomized bronchodilators.

H. E. Holling

Auricular Flutter Studied in Direct Leads from the Human Heart.  


A patient with mitral stenosis and impure auricular flutter was subjected to mitral commissurotomy. The opportunity was utilized to explore electrocardiographically the exposed left auricle. The results obtained suggested that poly-focal stimulation of the left auricle was responsible for the rhythm.

Paul Wood


The effect upon various arrhythmias of procaine amide, given intravenously in doses ranging from 200 mg. to 2000 mg., was investigated in 34 patients. Ventricular ectopic beats were abolished in 10 out of 11 cases, paroxysmal ventricular tachycardia in 2, and auricular extrasystoles in 3 out of 4 patients. No effect was seen in persistent auricular fibrillation and flutter. Side-effects included transient flushing, fall of blood pressure, and occurrence or aggravation of bundle branch block. Further studies, including oral administration, of this drug are in progress.

A. Schott

Apical Diastolic Murmurs in Patent Ductus Arteriosus.  


At the University of Colorado, the authors studied the heart sounds in 21 established cases of patent ductus arteriosus. In 9 cases apical diastolic murmurs similar to those of mitral stenosis were heard. In several of these cases operative correction of the disease abolished the murmur, and in one case of operative death the absence of coincident mitral stenosis was confirmed at necropsy. It is suggested that the murmur is produced by what is in effect a functional mitral stenosis: although the absolute size of the mitral ring is normal, its size relative to the ventricular capacity and the rate of blood flow is reduced owing to the effect of the shunt between the aorta and the pulmonary artery.

T. A. A. Hunter

Pulmonary Arteriovenous Aneurysm.  


The essential features of the fully developed case of pulmonary arteriovenous aneurysm are cyanosis and clubbing, a clinically normal heart, and a radiological shadow in the lung fields. Epistaxis and hemoptysis are frequent. Cases do occur, however, in which symptoms are absent, or appear rather abruptly in adult life. In half the cases multiple spidery telangiectases or discrete nodular haemangiomas are present in the skin or mucous membranes. A continuous murmur with systolic accentuation is often heard over the "tumour." The essential radiological features consist of a saccular, cirroid, or racemose, clearly defined shadow in the lung fields combined with enlargement of the related vascular shadows. Angiocardiography shows early opacification, and is particularly valuable in demonstrating multiple lesions.

Treatment consists of removal whenever this is practicable, even in symptomless cases, symptoms tending to develop at a later date if such cases are left untreated. Multiplicity of lesions is the chief drawback in carrying out surgical removal.

W. P. Cleland

Dilatation of the Aorta in Arachnodactyly. [In English].  


The incidence of dissecting aneurysm and aneurysmal dilatation of the aorta in reported cases of arachnodactyly is reviewed. Among 13 patients attending an ophthalmic clinic, radiological evidence of enlargement of the aorta was found in 5 cases, with clinical evidence of aortic incompetence in one. One other patient had a congenital heart lesion.

D. Verel