ABSTRACTS OF CARDIOLOGY


Observations were made on 31 patients with the symptoms of angina pectoris who presented "trigger areas" in the muscles of the precordium. When the trigger areas were either infiltrated with procaine (0.25 to 0.5%) or sprayed with ethyl chloride relief of pain lasting for days was experienced by those patients whose angina had followed a coronary thrombosis, but not by those without such a history. H. E. Holling


The authors are convinced that the electrocardiogram is a real aid in the diagnosis of chronic cor pulmonale and that often a diagnosis of this condition can be made by the electrocardiogram before it can be arrived at by clinical methods. They describe their electrocardiographic findings in detail and list 10 principal diagnostic signs. R. T. Grant


A study of the coronary artery anastomoses in the interventricular septum was made in 50 hearts by injecting "lipiodol" at low pressure (50 mm. Hg or less) into the coronary arteries, the septum being isolated. The injected specimens were examined radiographically. The authors conclude that: (1) in normal hearts, specially in those from young subjects, septal anastomoses are so frequent as to be considered the rule; (2) anastomoses are rare in elderly subjects. R. T. Grant


Transposition of the aorta and pulmonary artery is a rare deformity, in the presence of which survival is only possible through the persistence of fetal passages such as ventricular or auricular septal defects, patent ductus arteriosus, or entry of pulmonary veins into the right auricle. Length of survival depends on the amount of mixing of pulmonary and systemic blood that can take place. The average in 123 reported cases is 19 months, but one patient lived a normal life for 56 years.

Experiments were performed on dogs to discover whether venous shunts would permit survival in the presence of aortic and pulmonary artery transposition. The shunts were performed first, and consisted of anastomosis of the veins from the two upper lobes of the right lung into either the right auricle or the superior vena cava. The latter gave the better results, as there was less disparity in thickness between the vessels anastomosed. These shunts were shown to be patent some months after operation but in no case in which experimental transposition was subsequently effected has survival been possible for more than a few minutes. This is presumably because the shunt allowed insufficient mixing. Further attempts are being made. J. B. Kinmonth


Observations were made on 142 pregnant women with rheumatic heart disease through pregnancy and the puerperium; the literature on the subject was studied. It is concluded that pregnancy itself has little effect on the prognosis in rheumatic heart disease. H. E. Holling


The changes in the circulation of 28 persons (8 normal subjects, 8 with congestive failure, 7 with mitral stenosis, and 5 with emphysema) were studied by means of cardiac catheterization at rest and during exercises in a supine position in which the patients pushed with their feet against weighted pedals. In the controls cardiac output and the arterio-venous oxygen difference both increased, though the increase in cardiac output was the greater. In congestive heart failure there was little change in cardiac output but a large increase in arterio-venous oxygen difference. The normal pulmonary vascular bed can accommodate the amount of blood associated with a large increase in the rate of blood flow, with little or no increase in mean pulmonary arterial pressure. With left ventricular failure mean pulmonary arterial pressure, already elevated at rest, rises much further on exercise. Similar changes were noted in well-marked mitral stenosis, but in some patients the increase appeared larger than could be accounted for by a fixed obstruction at the mitral orifice. In advanced pulmonary emphysema the elevated pulmonary arterial pressures noted at rest and on exercise were believed to result from destruction of small vessels in the lung. W. T. Cooke
ABSTRACTS

Treatment of Thromboangiitis Obliterans and Thrombo-
phlebitis with Tetraethylammonium Chloride. R. Bux-
March, 1948.

The action of tetra-ethyl-ammonium chloride in estab-
lishing a temporary sympathetic block was used in the
treatment of 6 cases of thrombo-angiitis obliterans and
of 5 cases of thrombophlebitis, 2 to 3 ml. being injected
up to 3 times daily for varying periods of time [the actual
dosage is not given]. Among the cases of Buerger's
disease, 1 is included in which the condition followed a
fracture of the first lumbar vertebra. This patient and
2 others of this series were markedly improved by the
treatment, although a lumbar sympathectomy preceded
improvement in 1 of them. In 3 other cases treatment
failed. In the 5 cases of thrombophlebitis pain ceased
within 2 days of starting treatment, and the average time
taken to effect a cure was 7 days. 

G. Schoenewald

The Effect of Tetra-ethyl-ammonium Chloride on Blood
Pressure Before and After Sympathectomy for Hyper-
tension. H. S. Brown, E. V. Allen, and W. McK.

Tetra-ethyl-ammonium chloride blocks the transmission
of impulses from preganglionic to postganglionic fibre of
the autonomic nervous system. The effect is transient
and includes a fall in blood pressure of hypertensive
patients in the recumbent position, orthostatic hypo-
tension, tachycardia, mydriasis, and increase in the skin
temperature of the toes. In the present observations the
drug has been found to reduce greatly the blood pressure
of recumbent hypertensive patients who have undergone
sympathectomy by the Smithwick operation. Compared
with the pre-operative action of the drug, 25 to 30% of
the dose has post-operatively two or three times the
effect. Observations on 6 subjects are recorded. The
significance of the effect is considered. The authors
discard the possibility that it may be due to the drugs'
acting in more concentrated manner on the relatively few
remaining effective ganglia. They suggest that the fact
that the residual post-sympathectomy hypertension can
be reduced to normal indicates that organic changes in the
arterioles are not an important factor in the persistent
hypertension.

C. L. Cope

Pathology and Clinical Features of Idiopathic Isolated

The authors have been able to study 7 cases of idio-
pathic myocarditis both clinically and at necropsy, and
consider that the condition may be diagnosed during the
patient's life. The etiology is obscure. Heart failure
came on suddenly, sometimes after such conditions as
physical exertion, pregnancy, or acute infection (in-
fluenza). In 4 cases the aorta was hypoplastic. Five
patients were females; ages ranged from 20 to 60 years.
The clinical picture was one of severe and rapidly
progressive congestive heart failure with cyanosis and
dyspnoea. The heart was enlarged; arrhythmias were
common. The blood pressure was low, the pulse soft.
Occasional bouts of pyrexia occurred. The electro-
cardiogram pointed to a diffuse lesion; voltage was low,
Diagnosis was made by exclusion in 5 cases during life.
At necropsy, coagulative necrosis and myolysis of the
myocardium were sometimes the chief features, while in
other cases exudative and proliferative changes
predominated. 

S. B. Gilder

The Diagnostic Value of Electrocardiographic Patterns,
Based on an Assay of 261 Additional Autopsied Cases.

This study is a continuation of previous work on the
same subject. It is based on a series of 261 consecutive
cases in which electrocardiograms (including chest leads)
were made within 2 months of necropsy. The authors
conclude that in general the electrocardiogram is a good
index of whether or not the heart is structurally normal.
An abnormal electrocardiogram is excellent evidence that
the heart is abnormal. On the other hand, a normal
electrocardiogram is occasionally found with an abnor-
mal heart. In 41 cases of the series a discrepancy existed
between the electrocardiographic diagnosis and the
necropsy findings; these cases are discussed and
separately tabulated.

R. T. Grant

Studies of Fluorocardiography in Normal Subjects.
F. G. Fleischner, F. J. Roman, and A. A. Luisada.

Fluorocardiography (electrokymography) is a newly
developed procedure for recording on a continuous film
the pulsations of various areas of the cardiovascular
silhouette and the opacity changes of the lung fields on
X-ray examination. Simultaneous phonocardiographic
records are taken, which permit exact timing of the
fluoroscopic pulsations. This paper is a further contribu-
tion to the study of fluorocardiography in normal
subjects. Records of tracings of the ascending aorta,
pulmonary veins, and pulmonary parenchyma are
presented and their significance is discussed. The tracing
of pulsations in the pulmonary parenchyma is com-
parable to a plethysmogram and is influenced by both
arterial and venous changes in the blood content of the
lung. From the tracings the velocity and duration of
pulmonary arterial waves have been measured; the
speed of the pulse in the lesser circulation has been found
to be roughly one-third of the speed of pulse waves in the
greater circuit. This is due to a lower pulmonary pressure
and greater extensibility of the pulmonary vessels.
[Those interested in fluorocardiography should become
acquainted with previous work by the same authors on
the subject and the appended references will be useful.]

A. I. Suchett-Kaye

Kymographic Studies of the Function of the Auricle. B.
Fabricius. Acta radiol., Stockh., 29, 152–158, Feb. 28,
1948.

By studying the movements along the left border of the
heart between the pulmonary conus and left ventricle with
simultaneous kymograms and electro-cardiograms the
author has concluded that the kymographic waves at the
level of the left auricular appendix have little significance. Previous workers have described systolic contraction waves arising in the appendix itself and impulses transmitted from the left ventricle and from the pulmonary artery. But owing to the superimposed left hilar shadow and to the small undulations of the auricular appendix the interpretation of these waves has always been difficult. It is probable that the auricular appendix has no independent regular muscular function and therefore no important influence on the circulation. It appears to serve as a complementary space during ventricular systole to preserve the smooth contour of the heart within the pericardial sac.

J. L. Lovibond


In the 4 cases reported, portal hypertension was manifested by repeated severe hemorrhages, for which a variety of previous operations (splenectomy and direct attacks on the varices or their efferent venous trunks) had proved unavailing. A portacaval shunt was then carried out with complete relief in 3 of the patients for the duration of the follow-up periods (14, 14, and 22 months). The most satisfactory portacaval shunt is one in which, after splenectomy, the stump of the splenic vein is anastomosed to the side of the left renal vein. The left kidney should be preserved, since the operation is a severe one and may be followed by oliguria and a rise in the blood non-protein nitrogen even in the presence of both kidneys. Anastomosis of the portal vein to the inferior vena cava may be impossible because of cavernomatous transformation of the portal vein. This operation is also fraught with risk to the bile ducts. The veins of the portal system are devoid of valves, and therefore a shunt downstream from the main trunk may decompress the whole system.

The author emphasizes that previous splenectomy may result in obliteration of the stump of the splenic vein and preclude the establishment of a spleno-renal anastomosis. Therefore the surgeon undertaking a splenectomy for portal hypertension should be prepared to proceed at once to effect a spleno-renal shunt. Francis F. Rundle


The authors describe briefly the pathology of dissecting aneurysm, and discuss the relative importance of atherosclerosis, syphilis, and idiopathic cystic medial necrosis as aetiological factors. They stress the extremely varied symptomatology, and suggest that the clinical manifestations may conveniently be divided into 8 groups, according to whether the symptoms and signs are produced by disturbance of the circulation to the heart, lungs, brain, arm, spinal cord, gastro-intestinal tract, genito-urinary tract, or leg respectively. Histories and necropsy findings in 10 cases are given. The correct diagnosis was made during life in 3 cases, 1 of them at laparotomy. The incidence of dissecting aneurysm during the past 10 years at the authors' hospital (The Charity Hospital of Louisiana) was 1 in 454 necropsies. All the cases recorded in this paper were in males.

A. R. Kelsall


The authors carried out percussion of the left cardiac border in 25 subjects and compared the position of the outermost point of dullness with the position of the outermost point of the left cardiac silhouette as seen in radiographs taken at 6 feet. They conclude that the heart size was overestimated in about as many cases as it was underestimated, and that the margin of error was not more than 1 cm. in 56% of cases, and not more than 1.5 cm. in 80%. They consider that cardiac percussion of the left border should not be discarded as unreliable. [Two criticisms of this paper are: first, the patients were lean male subjects, and secondly, the majority of these had hearts within normal limits of size. It would have been more convincing if the authors could have shown the value of percussion in cases where the apex beat is not palpable.]

S. Oram


The author investigated the effect of potassium salts on the electrocardiogram in patients with hypertensive disease and in normal subjects, in doses varying between 10 and 24 g. daily. In the hypertensive group there was a reduction in voltage of the QRS deflections, frequently reduction in length, and shift to the right of the mean axis. An originally inverted T wave became less inverted or upright; it became taller when it was originally upright. In a few instances the T wave became more deeply inverted, though the voltage of the QRS deflection was reduced. All these changes persisted several hours after the administration of the potassium salts. The changes in normal subjects were the same as those in the hypertensive group, but much less pronounced. It is interesting to note that the same type of changes in hypertensive patients can be brought about by a diet with sodium restriction or by sympathectomy. A. I. Suchett-Kaye


The disturbances which emotional stress may produce in the function of the gastro-intestinal and genito-urinary tracts and respiratory and cardiovascular systems is reviewed.

The cardiovascular system is particularly susceptible to psychic disturbances. The effects may be central or peripheral. The central effects include: (1) increased cardiac output; (2) disturbances of cardiac mechanism;

Twenty-three patients were studied in whom a state of congestive failure was either induced or improved. Significant changes of degree of congestive heart failure were encountered 34 times; there were 26 instances of recovery and 8 of deterioration. The changes in body weight were taken as an index of the amount of oedema, and serial determinations of venous pressure were made by a direct method. For the most part changes in body weight and in venous pressure ran parallel, but in a few cases venous pressure altered without a change in body weight, and vice versa. When a patient with ascites was improving, the change in body weight might precede the fall in venous pressure. In such cases the venous pressure in the legs was originally higher than that in the arms, but as the ascites disappeared the pressures approached each other. The author concludes that in all phases of the syndrome of congestive failure changes in venous pressure and in the degree of congestion are concordant. Any initial discordance in the time relation change in the venous pressure to change in weight associated with oedema can be explained by the state of those tissues affected by oedema."

H. E. Holling

Clinical Electrocardiography. Third Edition. By DAVID SCHERF, and LINN J. BOYD.

It is due perhaps not so much to recent advances in electrocardiography that, since 1940, a third edition has already appeared, as to the increasing demand for a reliable descriptive account of its principles and practice. The new enlarged edition has called for much revision of the former text; nevertheless its authors continue to maintain the critical balance between the theory, physiology and practical application of their subject which remains a feature of their book. The importance of chest leads now meets fuller recognition. More space and greater detail is given to their discussion, particularly in regard to their diagnostic value in myocardial infarction, ventricular hypertrophy and bundle branch lesions. On the other hand unipolar leads are dealt with rather summarily, which is to be regretted in view of their increasing clinical significance. The reproduction of electrocardiograms is technically unsatisfactory; the majority suffer from over reduction, their definition is indistinct and their full description is often only to be found in the text on another page and not in the abbreviated captions beneath the illustrations. Sometimes the records are presented vertically below each other, but sometimes across the page which is confusing because the leads are not numbered. An adequate bibliography is included at the end of each chapter but unfortunately many references in the text are ambiguous through the omission of dates after authors' names. Attention to these details in the next edition will greatly enhance its merit as a book of easy reference. The text is amply cross-referenced with few misprints and good use is made of emphasis by italics. Some of the chapters, particularly those on extrasystoles, fibrillation and flutter, and the tachycardias are notably lucid.

J. L. Lovibond

Cardiovascular Diseases. Second Edition. By DAVID SCHERF, and LINN J. BOYD.

The original edition of this work consisted of a series of clinical essays on selected cardiac problems written largely from the practical point of view in relation to diagnosis and treatment. It has now been rewritten and becomes a complete and eminently readable textbook, retaining many of its former virtues. In the aetiology of certain cardiac symptoms the authors continue to emphasize the importance of the inflammatory myocarditis that occurs after rheumatic fever, tonsillitis, and many other infections, distinguishing it from the primarily degenerative myocarditis of old age and typhoid. One observes that they discard the term "coronary insufficiency" as a false aetiological nomenclature and that they reserve "angina pectoris" to describe a symptom and not a disease entity. The section on Cor Pulmonale could have been accorded more space and the explanations of the "Third Heart Sound" and "Gallop Rhythm" are not too clear. There is a full bibliography after each chapter, but references to authors in the text are mostly made by numbers and not by names, a method now obsolete in this country and one that renders the bibliography less selective. Some unaccustomed terms are used such as "adenitis," "hypocapnia" (for tachypnea), and "pathophysiology" though their meaning is usually clear enough. Description of radiology of the heart is limited and the plates that appear are not representative, notably the poor quality illustrations of cardiac aneurysm and atrial septal defect. It would be an advantage if the figures of the cardiographic strips were numbered plainly by leads, and if in the index which is otherwise complete, the main references were emphasized in heavy type. This book should be read in conjunction with the work on Clinical Electrocardiography by the same authors.

J. L. Lovibond