ABSTRACTS

Editor: Samuel Bellet, M.D.

Abstracts

DAVID I. ABRAHSMON, M.D., Chicago
LAWRENCE H. BEIZER, M.D., Philadelphia
ARTHUR BERNEST, M.D., Newark
RUTH CORTELL, M.D., New York
ALFRED FROEBESE, M.D., Philadelphia
BENJAMIN A. GouLEY, M.D., Philadelphia
RAYMOND HARRIS, M.D., Albany
HERMAN K. HELLERSTEIN, M.D., Cleveland
J. RODERICK KITCHELL, M.D., Philadelphia
ALDO A. LUISADA, M.D., Chicago
M. PRICE MARGOLIES, M.D., Philadelphia
S. S. MINTZ, M.D., Philadelphia
CARL S. NADLER, M.D., New Orleans
MORTON J. OPPENHEIMER, Philadelphia

ALFRED PICK, M.D., Chicago
OTTO RITTER, M.D., Lausanne, Switzerland
ELLIOTT L. SAGALL, Boston
DAVID SHERF, M.D., New York
PAUL SCHLESINGER, M.D., Rio de Janiero, Brazil
LEON SCHWARTZ, M.D., Philadelphia
JOHN B. SCHWELD, M.D., New York
FRANKLIN SIMON, M.D., Newark
LOUIS A. SOLOFF, M.D., Philadelphia
RALPH M. TANDOWSKY, M.D., Hollywood
S. O. WAIFE, M.D., Philadelphia
MARTIN WENDKOS, M.D., Philadelphia
STANFORD WESSLER, M.D., Boston
ABRAHAM G. WHITE, M.D., New York

BACTERIAL ENDOCARDITIS


A woman, age 27, with known rheumatic heart disease contracted a febrile illness one month after handling a dead rat. Blood culture was sterile. Treatment consisted of penicillin and salicylates but recovery was slow. After seven months she returned to work. Seven months later, symptoms recurred and blood cultures were positive for Actinomyces muris. The organism was sensitive to chloramphenicol and in one week she was symptom free. Treatment was continued for four weeks.

There were no clinical features that distinguish this infection from that usually causing subacute bacterial endocarditis. The author believes that the first episode was due to the same organism that became resistant to penicillin.

SOLOFF


The clinical and laboratory findings are given of a case of subacute bacterial endocarditis apparently due to a mixed infection with H. para-influenzae and Str. viridans. The viridans was grown only from the first blood culture but thereafter intensive penicillin therapy precluded the possibility of its subsequent isolation. The H. para-influenzae was grown on three separate occasions and its disappearance after antibiotic (streptomycin) therapy to which it was sensitive, accompanied by the disappearance of the pyrexia and marked clinical improvement of the patient, all point to the organism being a causal agent of the disease.

The unusually long (11 weeks) survival of H. para-influenzae in vitro and the method of preparing a stable suspension are thought to be interesting laboratory findings.

BERNSTEIN

CONGENITAL ANOMALIES


Two new cases of the Eisenmenger complex in adults are reported in detail. In addition, data on 33 autopsied cases of this syndrome are tabulated and their clinical and pathologic features reviewed. The concept of the Eisenmenger complex is widened to include cases in which the aorta is completely dextroposed, and arises from the right ventricle.

Microscopic examination of the pulmonary arterioles in two cases revealed severe intimal and medial changes. It is believed that they constitute a characteristic feature of the Eisenmenger complex, being evidence of long-standing severe pulmonary hypertension. Further evidence is presented to support the view that no dividing line exists between the uncomplicated defect of the ventricular septum and the Eisenmenger complex, and that both are caused by varying degrees of the same process of maldevelopment. The distinguishing feature of the two syndromes, the dextroposition of the aorta, may be difficult to determine owing to the fact that in the absence of the membranous septum there is a physiologic overriding of the aorta, and that an exami-
nation of the specimen of the heart may not permit an estimate of the degree of dextroposition which existed during life. Evidence is presented that anoxemia and cyanosis are due to admixture of venous blood in the aorta, or the shunt mechanism, rather than to incomplete pulmonary oxygenation.

The hemodynamics of the Eisenmenger complex are presented in the light of recent measurements of intracardiac pressure. Four cases are included in which the triad of basal defect of the ventricular septum, dextroposition of the aorta and deformity of an aortic cusp causing aortic insufficiency existed. In contrast to the remainder of the series, in three of these cases cyanosis was absent, and in the fourth one it was questionable. It is thought that because of the associated aortic lesion the dextroposition of the aorta was nonfunctioning, and, therefore, it is suggested that these cases be classified as ventricular septal defects and not as Eisenmenger's complex associated with aortic insufficiency.

**BERNSTEIN**


The clinical features of vascular anomalies would seem to depend on the stage of embryologic development at which maturation ceases. The authors have attempted to establish a classification and discuss (1) anomalies of large vessels conducting blood to the part (arterial aneurysm); (2) anomalies of large vessels conducting blood away from the part (phlebectasia); (3) anomalies of minute vessels (nevus flammeus); (4) abnormal communications between arteries and veins (arteriovenous fistula), and (5) anomalies associated with combinations of these functional elements. Methods of diagnosis are discussed. It is felt that logical therapy depends on careful diagnosis. Although surgical intervention and radiotherapy may be of value in some patients one should avoid unnecessary or useless procedures in most of these cases.

**KITTLE**

**SELLORS, T. H., and BELCHER, J. R.: Surgical Relief of Congenital Cyanotic Heart Disease. Lancet 266: 837, 1950.**

Seventy-two cases of cyanotic congenital heart disease were operated upon and followed for from six months to two and one-half years; 65 of these cases were typical instances of the tetralogy of Fallot, two had the tetralogy with situs inversus, two had transposition of the great vessels, two tricuspid atresia, two pulmonary stenosis only. Sixty-six patients had the Blalock operation, three had Pott's operation, two had pulmonary valvulotomies and one right-sided end-to-end pulmonary-subclavian anastomosis. There were nine operative deaths. Two died of arrhythmias, four of heart failure, one of thrombosis at the anastomosis, one of clotted hemo-

thorax with mediastinal displacement and one of a cerebral thrombosis three weeks postoperatively.

The end results showed 42 patients who were markedly improved, 22 moderately improved, seven not improved, and one who died one year postoperatively from a cause which could not be determined at autopsy.

**BERNSTEIN**

**CORONARY ARTERY DISEASE, MYOCARDIAL INFARCTION**


The authors describe electrocardiographic anomalies observed on three young women following abortion induced by injection of various materials into the uterine cavity. The changes of the electrocardiogram, consisting in inversion or flattening of T wave in limb leads and precordial leads, persisted over two to three months and terminated in complete restitution to normal. All three cases had neurologic manifestations (hemiplegia in two and protracted unconsciousness in the third), one had precordial pain and all a heart of normal size at x-ray examination. The electrocardiographic anomalies, which resembled those seen in anteroseptal infarction are ascribed by the authors to air embolism of a coronary artery following the intrauterine manipulation. To explain the "crossed" embolization, the authors quote from the literature old experiments in which it had been shown that air, injected rapidly into a peripheral vein in sufficient amount, may cross the pulmonary capillaries and appear in the greater circulation.

**PIECE**


A series of 36 patients with severe myocardial ischemia is presented in which surgical methods for relief were attempted. Carbo-omentoectomy with or without abrasion with aleuronat paste or asbestos, or pericardiectomy with abrasion and insufflation of asbestos were the usual surgical procedures. Of these, 11 did not survive the first month, three were not relieved of angina, and 16 were thought to have benefited from the grafting. Nearly all of the patients were cardiac derelicts "and to restore a third of such patients as these to full activity, even temporarily, as well as to relieve them of their pain seems to have been worthwhile."

Exact pathologic proof of the efficacy of grafting in this series is lacking but it is difficult to deny that something very striking has happened to the myocardium in the clinically successful cases. It is not unreasonable to suppose that, as in the laboratory
animal, a collateral circulation has been established. In view of the extreme degree of bilateral coronary disease likely to be present in comparable cases coming to necropsy, it is almost impossible to explain the clinical relief obtained solely by an improvement in the intercoronary circulation.

BERNSTEIN

ELECTROCARDIOGRAPHY


This study was based on the electrocardiograms taken on 90 patients ranging in age from 9 to 66 years with Addison’s disease. Electrocardiographic studies were made at all levels of adrenal cortical function ranging from complete depletion and Addisonian crisis to adequate replacement.

The electrocardiogram was normal in 48 per cent of the patients and abnormal in 52 per cent. The abnormalities in order of frequency were flat or inverted T waves, especially in left precordial leads; prolonged Q-T interval; low voltage in standard limb leads and less often in chest leads; prolonged P-R interval; increased QRS duration; and depressed RS-T segments. U waves were commonly seen, especially in patients receiving desoxycorticosterone acetate. It is believed that these U waves may be explained on the basis of increased after-potentials of cardiac muscle consequent to the lowering of serum potassium by desoxycorticosterone acetate.

In most cases desoxycorticosterone treatment resulted in no change in serial electrocardiograms despite clinical improvement. In 22 per cent, the electrocardiograms showed an increase in abnormalities. This may be due to the unmasking of latent myocardial damage by the clinical improvement and its associated increased cardiac load. In some cases it was due to lowering of serum potassium. Occasionally, in untreated cases with high serum potassium, abnormally tall T waves, depressed RS-T segments and prolonged Q-T intervals were normalized during desoxycorticosterone therapy.

There was no consistent relationship between subjective clinical state and the electrocardiogram and there was no correlation between electrocardiographic changes and increase in heart size during clinical improvement. In eight patients no distinctive electrocardiographic abnormalities occurred during Addisonian crisis. Abnormal electrocardiograms were more likely when the hematocrit was low, and also when the basal metabolic rate was below −19 per cent. Almost all patients with abnormal electrocardiograms showed impaired 17-ketosteroid excretion and abnormal eosinophile response to the ACTH test.

Cortisone had no effect on the normal electrocardiograms of four patients. On the other hand, of 12 patients with abnormal tracings, cortisone resulted in improvement in the electrocardiogram in 10. The duration of cortisone effects was uncertain. The importance of depletion of carbohydrate-regulating factors in causing electrocardiographic abnormalities is suggested by these observations.

It is not yet possible to define precisely the physicochemical factors resulting in electrocardiographic abnormalities in Addison’s disease. The pattern is complex and composite, and includes the following factors: deficiency of adrenocortical carbohydrate regulating factor, electrolyte imbalance, alterations in extracellular fluid volume, reduced basal metabolic rate, and anatomic changes in the myocardium. There is no specific electrocardiographic pattern of Addison’s disease. The pattern in an individual case is probably the resultant of functional and structural alterations in the heart. Indeed, the latter may account for the persistence of abnormalities in certain cases despite clinical improvement.

ENSIEBEGG


Four patients undergoing surgery of the heart or of the lungs provided the opportunity for the authors to investigate how the unipolar chest and limb leads reflect the potential variations, present at or in the heart. They found at the surface of the auricles characteristic differences in pattern of the auricular electrogram when obtained near the superior, or the inferior venae cavae, or over the rest of their surface. These three patterns were not propagated to the outer thoracic wall, where the auricular electrocardiogram consisted usually of one and the same pattern. At the surface of each ventricle, a definite pattern is present, the right and left part-electrogram. Transitional forms were found mainly near the left part-electrogram. Transitional forms were found mainly near the sulcus longitudinalis. Mixed forms were recorded over the great vessels. The right and left electrograms, with diminished voltage, were reflected on the thoracic wall, the left mainly to the left axillary line and almost the entire posterior thoracic wall, the right mainly to the midsternal area. Transitional forms, present at the cardiac surface over a small area, predominate at the chest wall in the broad area between the left axillary line and the midsternal line. Right or left cavity electrograms were not found at the surface of the heart, nor in distinct form over the shoulders. The V₁ and V₁₀ electrocardiograms were in no way identical with the ventricular initial complexes of the electrogram from the right and left auricular surface. The “two pattern theory” is valid for the initial complex of the electrograms obtained from the surface of the heart and the electrocardiograms recorded from the entire thoracic wall. The “perpendicular epicardial
projection theory” is only valid for the right and left electrogram, not for the transitional or mixed forms. The “perpendicular epicardial projection theory” is also invalid for T waves. The “perpendicular endocardial projection theory” seems to be invalid for humans, since intracavity electrocardiograms were not found at the auricular surfaces.

GELFAND


The authors studied five patients who developed bundle branch block during paroxysms of supraventricular tachycardia (auricular fibrillation or flutter), simulating ventricular tachycardia. The impaired conduction is due to functional fatigue of a bundle branch produced when critical cardiac rates are exceeded. The differentiation between paroxysmal supraventricular tachycardia with functional fatigue block and ventricular tachycardia is important therapeutically since digitalis would be prescribed in the former only.

Hellerstein


In the majority of studies dealing with the ventricular gradient only its projection on the frontal plane has been considered. The authors present a method for the determination of its projection on a horizontal plane, with the help of precordial leads (V2 and V6) obtained at the level of the electrical center of the heart (point zero). The method of the determination of the latter was described by the authors in a previous communication.

By determination of the ventricular gradient in two planes it is possible to study its values in space and to verify the constants developed by Ashman. In intermediate and vertical hearts values obtained by this method were in good agreement with Ashman’s criteria for normality and abnormality. Considerable deviations from the latter were found with hearts in horizontal position. The determination of the spatial ventricular gradient appears especially useful in cases in which the interpretation of its frontal projection is doubtful. This applies in instances where the anatomic axis G and Aqrs lie in close approximation or where ischemia of the anterior or posterior wall may produce an abnormal vectorial component, perpendicular to the frontal plane.

Pick


The authors studied the effects of minute doses of acetylcholine (μg.) on intracavitary, epicardial and standard leads of the electrocardiogram. Alteration of repolarization in the atria was reflected by T_a depression, and in the ventricles, by increases in the amplitude of the T wave in extracavity leads. The expected reciprocal changes occurred in intracavity leads. These changes were independent of any change in blood pressure and chronotropic effect of acetylcholine. The similarity of the effects of acetylcholine in these experiments and of the effect of cooling of the subendocardial lamina upon the epic-endocardial gradient of repolarization supports the concept of the influence of acetylcholine upon the deeper lamina by its effects on the Purkinje fibers.

Hellerstein


The authors question the correctness of the concept of the ventricular gradient from the viewpoint of electrophysiology and of its clinical usefulness. Electromotive forces producing the T wave are more complex, asynchronous and opposite in direction than forces giving rise to the QRS. Furthermore, forces responsible for the T wave differ in magnitude from forces reflected in the electrocardiogram as R wave, the ratio being about 100/25. Simple determination of the mean electrical axis of QRS and T, used for the determination of the ventricular gradient, may omit significant anomalies of the electrocardiogram, for example, a widened S wave in right bundle branch block or anomalies of the T wave present only in the precordial leads. Since the ventricular gradient is derived from leads in a single (frontal) plane, abnormalities consisting in spatial deviations of the QRS and T vector are completely missed. Finally, it must be borne in mind that the ventricular gradient, as has been shown repeatedly, may remain within normal limits in a considerable percentage of cases with severe myocardial involvement and may be abnormal in clinically normal hearts.

Pick


The electrocardiograms of one individual with idiopathic steatorrhea and two with ulcerative colitis were studied in relationship to simultaneously determined blood potassiuamts that were below normal for a long time. Different electrocardiographic patterns were obtained with similar depressions of the blood potassiuamts. The electrocardiographic abnormalities consisted of (1) depressions of T waves, (2) sagging of the S-T segments, (3) increase in voltage of P waves, (4) increase in height and width of U wave,
(5) lengthening of any portion of the electrical cycle. These changes may occur singly or in any combination. Prolongation of the Q-T interval is not commonly associated with hypokalemia. Previous reports of prolongation of the Q-T interval are due to misinterpreting the broad tall U wave for a T wave.

**Soloff**


An instance of complete absence of the right bundle of His is reported as determined by serial microscopic study. The subject was a boy, age 19 years, who was cyanotic, on and off, since 6 years of age, who could not play normally because of fatigue. Physical examination revealed a cyanotic boy with a large heart, a systolic mitral murmur, a split mitral sound and an indeterminate type of block in the electrocardiogram. He died suddenly.

The absence of a right bundle is regarded as a congenital defect because of the clear cut healthy appearing right border of the bundle of His and of the absence of fibrous tissue.

**Soloff**


The authors describe the electrocardiographic observations in 120 cases of posterior myocardial infarction studied by means of the limb leads, the dorsal lead of Nehb, and special derivations of these authors from the axilla and posterolateral thoracic area. Infarcts of large size produced changes in all of the leads used whereas infarcts of small size were associated with changes only in the limb leads and special leads of the authors, or the latter derivations alone. Two cases of aneurysm of areas of posterior myocardial infarctions disclosed persistent elevation of the RS-T segments in those leads showing the most striking abnormalities of infarction.

**Rosenbaum**

ENDOCRINE EFFECTS ON CIRCULATION


Under suitable experimental conditions simultaneous treatment with lyophilized anterior pituitary hormone (LAP) and cortisone causes an experimental simile of "collagen disease" or "hyalinosis" in the rat. This is characterized by an eventually fatal nephroclerosis with myocarditis (resembling that seen in acute rheumatic fever) and periarteritis nodosa. Adrenalectomy completely prevents these renal and cardiovascular lesions and enables the rats to remain physically fit despite this hormone treatment. It is concluded that the active factor in LAP exerts its principal toxic effects, and produces an experimental equivalent of "collagen disease," only in the presence of functioning adrenal tissue. Observations described elsewhere have shown that the so-called "growth hormone," or somatotroph hormone (STH), accurately reproduces the hyalnosis syndrome caused by LAP. This effect of STH can be inhibited by cortisone, but only under conditions which permit the latter to induce marked adrenocortical atrophy. Cortisone fails to cause adrenal involution in rats treated with LAP since the latter is rich in ACTH. This agrees with the view that LAP preparation causes hyalinosis by virtue of the STH it contains and that the pathogenicity of STH depends largely upon the functional capacity of the adrenal cortex. These observations strongly support the concept according to which endogenous suprarenal hormones participate in the pathogenesis of the "collagen diseases."

**Bernstein**

HYPERTENSION


A comprehensive hypothesis concerning the pathogenesis of hypertension is presented and evaluated. Essential hypertension is felt to be initially a psychosomatic disorder in which repressed psychic disturbances produce increased activity of the sympathetic nervous system. Sympathetic stimulation may raise the blood pressure acutely, produce renal ischemia, and activate the adrenal cortex. Renal ischemia leads to the production of pressor substances and hypertension. Hypertension itself causes arteriolar sclerosis, especially in the kidney, resulting in more renal ischemia. Adrenal cortex activity itself may lead to hypertension. Variation in the degree of the causative factors (psychic and neurogenic), along with the presence and severity of the contributory factors (renal and endocrine disease as well as arteriosclerosis), account for the wide variation in the course of different patients and in the relative efficacy of various treatments. Therapy must be directed against the cause. Psychotherapy has sometimes altered the course of hypertension in the earliest stages by attempting to re-educate the individual so that he will react to his conflicts by overt action or by insight and logic, rather than resolving them by repression, emotional tension and subsequent discharge via his hypothalamus and sympathetic nervous system. The neurogenic factor may be controlled by "chemical" or operative sympathectomy. The humoral factor may be controlled by destruction of the pressor substance, inhibition of its formation, "flooding" a system with a nontoxic competitive agent, increasing the concentration of a
naturally occurring antagonist, and increasing renal blood flow by nonspecific methods.

HARRIS

Goetz, R. H.: The Effect of Sympatholytic Drugs on the Cardiovascular System in Man with Special Reference to Hypertension. Angiology 2: 1 (Feb.), 1951.

The author reviews his own experiences and those of others in the clinical use of sympatholytic drugs. The current status of these agents is summarized. Dehydroergocornine is of more value in the treatment of hypertension than of peripheral vascular diseases. Tetraethylammonium chloride is of value in relieving causalgic pain. The marked postural hypotensive effect of the polymethylene-bistrimethylammonium compounds (C5 and C6) mitigates against their therapeutic usefulness. Priscol represents the most easily administered sympatholytic drug at present available. It is effective orally, intramuscularly, and intravenously and in cases of spastic vascular disease has produced, on oral administration effects equal to the effect of sympathectomy. Both Dibenamine and benzodioxane are of value in the diagnosis and management of pheochromocytoma.

WESSLER


Experiments on female piebald rats revealed that electrophoretically pure somatotrophic hormone (STH) produces nephrosclerosis with variable degrees of nephritis, marked polyuria, myocarditis, pancreatic periarteritis nodosa, and hypertension. The type of the toxic manifestations, as well as the sensitization of the animals to these STH effects by unilateral nephrectomy and NaCl, parallel previous findings in animals receiving excesses of desoxycorticosterone acetate (DCA) or lyophilized anterior pituitary (LAP) material.

It is assumed that STH is the active principle responsible for the toxic actions of LAP upon the kidney and the cardiovascular system. The lesions caused by STH are considered to be, in all likelihood, secondary to a sensitization of the tissues to DCA-like mineralocorticoids. In addition, STH may also increase the production of mineralocorticoids by the adrenal.

The cardiovascular and renal damage normally caused by STH overdosage is prevented if cortisone is simultaneously administered in doses adequate to produce adrenocortical atrophy. In the production of the so-called "diseases of adaptation" STH appears to play a part equally as important as that of ACTH. The former is responsible for the activity of mineralocorticoids, which stimulate defensive granuloma formation, while the latter regulates the secretion of glucocorticoids, which inhibit such defense reactions.

BERNSTEIN


Three cases are described in which there was persistent or intermittent increased intracranial pressure without demonstrable cause. The signs and symptoms were similar and referable to increased intracranial pressure. They included severe headache, lethargy, blurring of vision, vomiting and palpitation. The spinal fluid pressures were greatly elevated but the spinal fluid was normal. Ventriculograms disclosed no abnormalities. Postmortem examination disclosed no abnormalities in one patient who died after exploratory procedures upon the brain. A second patient recovered when treated by simple decompression and a third had repeated attacks over a period of seven years despite three decompressions. The authors refer to nearly forty similar cases which have been recorded in the literature. Dandy is said to have defined the syndrome as the signs and symptoms of a space-occupying lesion that could not be demonstrated.

ROSENBAUM


It has been previously demonstrated that hypertensive rats, when given a free choice, ingest much less sodium chloride and sodium bicarbonate than do normal rats. Adrenalectomy and DCA increased the intake of 0.17 M sodium chloride in both normal and hypertensive rats made hypertensive by latex encapsulation. The increases were less, however, in sodium chloride selected by normal rats. Reduced intake of sodium chloride by hypertensive rats is independent of adrenal glands or increased water intake. The authors suggest altered renal function as a possible cause of reduced sodium chloride uptake in hypertensive rats.

OPPENHEIMER


Detailed summaries of three patients manifesting symptoms of toxemia of pregnancy prior to the third trimester of their respective pregnancies are pre-
presented. Two of the patients were primigravid, the other was gravida 1, para 0. Two had been found normal with respect to blood pressure readings and urinalyses during the initial examinations at the time of pregnancy. Pregnancy was terminated in each of these patients by hysterotomy because of a progressively deteriorating course despite vigorous therapy. Postoperative recovery was satisfactory with an improvement in the urinary findings, blood pressure and retinopathy in each instance. The authors have reviewed the literature and emphasize that true toxemia of pregnancy may occur prior to the third trimester. The presence of cardiovascular or renal disease antedating the pregnancy should be excluded and the diagnosis substantiated by the rapid clearing of symptoms with the termination of pregnancy.

SHUMAN


The series of reported proved cases of pheochromocytoma now reaches over 100 with a variety of clinical patterns being recognized. Of the pharmacologic tests the authors feel the most reliable agent is histamine. Rapid intravenous injection of between 0.05 and 0.0125 mg. of histamine base was invariably followed by a severe flush, headache and a sharp but fleeting fall in blood pressure. In five of the six cases subsequently proved to be pheochromocytoma the patients, after injection, suddenly blanched and cried in alarm and the blood pressure rose precipitously. The patients broke out in profuse sweats, the pupils dilated, and all the manifestations of a severe spontaneous attack were experienced. One case studied by the authors failed to give a positive histamine test, but on exploratory surgery pheochromocytoma was found. Subsequent events showed that there was little doubt her paroxysmal hypertension was caused by this tumor. Benzodioxan test was positive in one patient in the series and negative in two other patients who had proved pheochromocytoma. The authors state although roentgenograms following perirenal air injection have been reported to be effective, interpretation in their cases was often confusing. In one instance alarming though not fatal air embolism occurred. In their later cases laminograms have been used and correctly localized the tumors in three cases. While tests may be extremely helpful no one of them can be interpreted as absolute evidence and the clinical picture must be regarded as a whole. Where reasonable doubt occurs abdominal exploration should be performed.

KITCHELL


The successful removal of a pheochromocytoma from a 66 year old female is reported. The test substances, histamine and acetyl-β-methylcholine, failed to produce a typical paroxysm. The rise in blood pressure after injection of these substances and that following abdominal palpation were not associated with tachycardia, nor with any of the symptoms or other signs which characterize a spontaneously occurring attack. The pressor effect of noradrenaline following intravenous injection is not usually associated with tachycardia or with distressing subjective symptoms. It might, therefore, be postulated that asymptomatic paroxysmal hypertension in the presence of pheochromocytoma is due to the release of noradrenaline and that attacks with tachycardia and marked subjective symptoms follow the release of adrenaline. The value of noradrenaline in the control of postoperative hypotension is again noted.

BERNSTEIN


Two cases of pheochromocytoma are described. In the first, as a result of radiologic investigation, a malformed kidne was thought to be the cause of hypertension. An unsuspected pheochromocytoma was present however, and death occurred shortly after operation.

In the second case the diagnosis was made clinically and was confirmed by the Goldenberg test, using piperoxane. Calcification in the tumor was demonstrated by radiography. The blood pressure was recorded at frequent intervals during the operation for removal of the tumor in the second case and was controlled by piperoxane and adrenaline as indicated.

BERNSTEIN


A case of pheochromocytoma of the left adrenal gland in which the tumor was successfully removed is described. The arterial blood pressure, which had been persistently elevated for at least seven years, reverted to normal levels. The preoperative diagnosis was essential hypertension and a splanchic sympathectomy was decided upon. At surgery, a tumor was found in the left adrenal gland and was successfully removed. The postoperative collapse which supervened was overcome by an infusion of l-noradrenaline. In retrospect certain clinical features such as excessive sweating, low grade pyrexia, peripheral vasomotor phenomena, and episodes of pallor were noted which should have suggested the postoperative diagnosis.

BERNSTEIN
**PATHOLOGIC PHYSIOLOGY**


The authors discuss the development of hypercholesteremia during cortisone and pituitary adrenocorticotrophic hormone (ACTH) therapy. Hypercholesteremia in man has thus far been produced by only one hormonal mechanism, that is, the suppression of normal thyroid function. The present study shows that a second hormonal mechanism now becomes available to researchers with the demonstration that prolonged administration of cortisone or pituitary adrenocorticotrophic hormone can produce abnormal cholesterol elevations. The impression was that cortisone produced a somewhat higher or more sustained level of serum cholesterol than did those on ACTH. The authors discuss the production of many of the signs, symptoms and laboratory indications of Cushing's syndrome in patients who have received prolonged courses of cortisone or ACTH, and the possible development of premature atherosclerosis in these persons, perhaps related to the sustained hypercholesteremia.

Kitchell


The authors have applied the hydraulic principles and formulas of fixed orifices to the in vivo estimation of degrees of valvular stenosis. These formulas were considered applicable because of the high kinetic energy loss through small fixed orifices or in the presence of high volume flow. In its general form, the formula is $A = \frac{F}{C\sqrt{2gh}}$. $A$ is the cross sectional area in sq. cm. of orifice; $F$ is the rate of blood flow in cc. during the time the valve or orifice is open; $h$ is the "loss of head" or the pressure gradient across the valve or orifice; $C$ is an empiric constant which consists of corrections for the conversion of pressure in mm. Hg to cm. and, in the case of the mitral valve, a correction for the method used of estimating the diastolic filling period; and $g$ is gravity acceleration. To confirm the applicability of this formula to the living patient, a fresh autopsy specimen of a stenotic mitral valve was set up in an artificial pressure and flow system. Readings at all levels of pressure checked closely with calculated values. Calculated and measured areas of stenotic mitral valves checked within 0.2 sq. cm. in six postmortem examinations and in 5 patients at the time of operation. Changes in mitral valve area following fracture valvuloplasty were noted in 2 patients.

Formulas have likewise been derived for calculation of the cross sectional area of stenotic pulmonary, tricuspid and aortic valves, patent ductus arteriosus and of atrial and ventricular septal defects. These formulas are valuable (1) in the objective appraisal of operative procedures designed to widen stenotic orifices or to abolish abnormal shunts; (2) selection of patients with sufficient stenosis to account for their major symptoms (in mitral stenosis, valve area of less than 1.5 sq. cm.); (3) to determine the size of the valve orifice that must be created at operation in order to relieve symptoms. These formulas cannot be applied to normal valves since the pressure gradient across the normal valve cannot be measured.

Hellerstein


The authors measured, with help of a specially constructed device, the distensibility of the carotid sinus and adjacent parts of the carotid arteries excised from bodies of normotensives and of patients who had during life various types of hypertension. The results were then correlated with clinical data. A definite parallel was found between the impairment of elasticity of the excised vessel on one hand, and the age and the degree of hypertension on the other hand. The correlation was especially striking among females. A marked loss of distensibility was present in cases of essential hypertension and was most marked in patients who died of malignant sclerosis. Cases of chronic nephritis failed to reveal alterations of elasticity of the vascular wall if compared with normotensives of corresponding age groups.

Pick


The blood flow through digits was measured calorimetrically in man after arterial and after venous obstruction, using heat supplemented by tetraethylammonium chloride (TEAC) to release
sympathetic tone. In addition blood flow measurements were performed during spinal anesthesia.

In this experiment spinal anesthesia produced no greater release of sympathetic tone in a toe than indirect heat supplemented with tetraethylammonium chloride as measured by skin temperatures. There was evidence that prolonged venous obstruction is incomplete because of considerable reflux through deep veins. The authors also discuss the several factors which are responsible for discrepancies between plethysmographic and calorimetric data.

**WAIFFE**


To study the role of the sympathetic system in the cerebral circulation, blood flow measurements were made before and after bilateral stellate ganglionectomy in 7 patients. Four subjects had Parkinson's disease, and one each had advanced cerebral arteriosclerosis, hypertension with cerebral atrophy, and old hemiplegia.

Using the nitrous oxide method a significant decrease in cerebrovascular resistance was noted after stellate ganglionectomy. The cerebral blood flow was increased to a moderate extent. A high correlation was found between the preoperative cerebral blood flow and the decrease in cerebral vascular resistance. Stellactomy reduced the vascular resistance particularly in patients with abnormally slow blood flows and increased resistance. This may indicate that a portion of the increased resistance can be due to spasm mediated over sympathetic reflexes.

**WAIFFE**


The authors have described the deviations from the normal circulatory pattern in 21 patients with mitral stenosis studied by cardiac catheterization. They have related the physiologic responses and clinical symptoms to the severity of the mitral stenosis and to the magnitude of the pulmonary vascular changes. The mitral valve orifice area were calculated from standard hydrokinetic orifice formulas. There was a good correlation between the clinical classification of patients and the calculated mitral valve orifice area. In Class IV patients the areas were less than 1.0 sq. cm., and in Classes I and II, more than 1.5 sq. cm. There was an increase of tissue oxygen extraction (as measured by arteriovenous oxygen difference), pulmonary artery, pulmonary “capillary” and right atrial mean pressures, pulmonary arteriolar resistance, total pulmonary resistance, and right ventricular pressure work. Cardiac output, cardiac index, and stroke volume were decreased, although there was a wide range of values. Patients with auricular fibrillation had lower cardiac indexes than those with normal sinus rhythm and similar pulse rates, supporting the concept that atrial systole contributes a significant portion of the left ventricular inflow. Pulmonary “capillary” pressures were increased above normal as a result of the increase in left atrial pressure proximal to the stenotic mitral valve. Six patients had pulmonary edema during the study. Each had pulmonary capillary pressures in excess of 30 mm. Hg. Pulmonary arterial pressure was increased as a result of the rise of pulmonary capillary pressure and increased pulmonary arteriolar resistance. The latter was due to true pulmonary parenchymal or vascular disease. The work of the right ventricle against pressure was increased from two to four times the normal. Inadequacy of the right ventricle, as indicated by an elevated filling pressure, was seen in over one-half of the patients. Incompetence was believed to be due to increased pulmonary pressure load and underlying myocardial damage from rheumatic fever. On the other hand, paroxysmal pulmonary edema develops in patients with overactive competent right ventricles. A momentary increase in right ventricular output over the left produces an increase of pulmonary blood volume and pulmonary capillary pressure, and therewith pulmonary edema.

**HELLERSTEIN**


Coronary arteriovenous oxygen differences were normal at 20 C. heart blood temperature. Although the hemoglobin dissociation was shifted to the left, no serious hypoxia resulted. Breathing 100 per cent oxygen does not affect the coronary arteriovenous difference. Coronary venous oxygen pressure values of 4 to 5 mm. Hg often occur at 20 C. blood temperature with no evidence of impaired oxygenation of heart muscle. It is concluded that cardiac muscle has a striking ability to extract oxygen from blood at very low pressures.

**OPFENHEIMER**

Mufson, L.: Responses of the Abnormal Arterial Circulation to Various Stimuli, as Studied by the Use of Radioactive Sodium. II. Intraarterial Histamine, Papaverine, Aminophylline and Adrenaline; Sympathectomy and Etamon; Pain. Ann. Int. Med. 34: 428 (Feb.), 1951.

As a result of measurements of radiosodium diffusion through the peripheral vascular system, the effectiveness of histamine and of sympathetic block as vasodilators in obliterator arterial diseases was demonstrated. By this technic, intraarterial papaverine, aminophylline, and intravenous Etamon were
found to be ineffective where histamine intra-arterially was effective as a vasodilator. The difference in the effects which have been produced by histamine intraarterially and by paravertebral nerve block when a limb was edematous because of a deep venous thrombus and lymphedema, has suggested the possibility that the effect of histamine is mainly on the minute vessels and capillaries while that of sympathetic block is on the arteriovenous anastomoses.

WENDKOS


The author discusses results of an attempt to calculate the amount of rest volume of the heart in normal subjects and under pathologic conditions. The method consisted in a correlation of the heart volume, calculated from roentgenograms taken in two planes, with the circulation time. Circulation time was determined by following the curve of concentration in the arterial and venous blood of erythrocytes labeled with radioactive P32 and injected intravenously.

Even in the healthy subjects there is probably a small amount of residual blood. In pathologic conditions it varies greatly corresponding to the degree of dilatation of the heart and the form of the dilatation curve of the labeled erythrocytes. Calculations of the amount of "pool blood" from this curve may not be valid due to the impossibility of determining exactly the time when recirculation begins.

PICK

PATHOLOGY


A case of hemochromatosis with cardiac involvement is studied in detail. Thirty-five cases of hemochromatosis found in the literature are reviewed. The opinion of the author is that myocardial involvement is quite frequent in this disease and is a potential condition of failure. This possibility should be taken into consideration even when the electrocardiographic findings are negative. The failure which occurs in this disease can be chronic, acute or subacute. It cannot be controlled clinically because of the irreversible type of lesion of the myocardial fibers. The nature of these lesions is still obscure.

LUSADA


Acrosclerosis is relatively rare, and there is much conflict of opinion about whether it is an independent clinical syndrome or not. Acrosclerosis, scleroderma, scleroderma adultorum, and dermatomyositis have all been grouped together as dermotosclerosis because hardening of the skin is common to all of them at some time during their course. The cardinal feature of acrosclerosis is its invariable association with the Raynaud phenomenon; this is usually well established months or years before the skin lesions appear, but occasionally the vasomotor and cutaneous signs appear almost simultaneously. The characteristic features are outlined and differential diagnosis discussed. Most important besides the vasomotor phenomena is the fact that the process is always confined to the extremities and the face.

Etiology is discussed in general with special reference to the adrenal glands. It is suggested that these glands may ultimately be directly concerned in the pathogenesis of acrosclerosis. Treatment, both medical and surgical, is briefly discussed.

BERNSTEIN


Seven representative cases of isolated disease of the pulmonary valve or artery are reported. The first 3 cases are examples of congenital pulmonary stenosis, 2 of which were due to involvement of the valve itself and one to involvement of the infundibulum of the right ventricle. In the single case of infundibular pulmonary stenosis, the diagnosis was made during life because of findings similar to those observed in the cases of valvular stenosis except for the absence of a prominent pulmonary conus and right heart failure. In the case of the infant, the lesion was demonstrated at autopsy. Final confirmation of the diagnosis in the older child with valmonic valvular stenosis and in the child with infundibular stenosis was obtained from angiocardiograms and catheterization studies which showed a high right ventricular pressure and a low pulmonary artery pressure in conjunction with normal arterial oxygen values. The fourth case is that of a subacute bacterial endocarditis limited to the pulmonic valve, the diagnosis having been established during life only when a blood sample, removed from the pulmonic valve during catheterization of the right ventricle, yielded a nonhemolytic streptococcus when cultured. Recovery followed the institution of intensive penicillin therapy after the positive blood culture was obtained. During the height of the illness, systolic and diastolic murmurs of variable intensity were audible over the pulmonic valve area.

The fifth case is one of suspected rheumatic pulmonic valvulitis although the basis for this diagnosis is somewhat questionable. The last 2 cases are examples of pulmonary artery aneurysms due to intrinsic disease of the vessel wall, one the result of syphilis and the other of tuberculous involvement. In both cases, angiocardiograms helped to establish the diagnosis and ruled out aortic aneurysm.

Of 13 patients with arachnodactyly (Marfan's disease), 5 showed an aortic lesion. This consisted of dilatation of the ascending aorta or of the beginning of the descending aorta. In another patient there was a suggestion of a congenital weakness of the external carotid artery wall. In view of the several cases of fatal dissecting aneurysm in arachnodactyly the authors suggest that more attention be paid to the aorta and the large vessels in this syndrome.

WAIFE

PHARMACOLOGY


The authors studied the effects of certain drugs acting on the carotid sinus by cutting the vagus and aortic nerves of anesthetized dogs. Clamping the carotid arteries induced a marked reflex rise in systemic pressure with return to normal on declamping. Infiltration of the carotid sinus areas with 1 per cent l-adrenaline led to a progressive and prolonged fall in blood pressure, at which level carotid artery occlusion had no effect on blood pressure. l-Noradrenaline and pitressin applied locally to the carotid sinus areas caused a contraction of the arterial wall and stimulated the receptors of the carotid sinus nerves which reflexly buffer the arterial pressure. Such a stimulation of the pressoreceptors led to a marked and prolonged fall in arterial pressure. These substances also induced a suppression of reflexes normally provoked by a decrease in pressure inside the carotid sinus area (clamping).

Section of the carotid sinus nerves after this fall in pressure caused an immediate and very marked rise in systemic arterial pressure.

Papaverine and Priscol applied similarly caused a rise in systemic pressure through a decrease in stimulation of the pressoreceptors.

WAIFE


The authors appraise the current status of the preoperative and long term use of thiouracil derivatives. Propylthiouracil is the drug of choice. Methyithiouracil, although more active, is more toxic. Thiouracil has been recommended in the treatment of thyroiditis. The commonest abuses include failure to control the hyperthyroidism completely due to inadequate dosage; improper selection of cases for prolonged medical treatment, such as intrathoracic goiters, very large adenomatous goiters, or large exophthalmic goiters; mistaken diagnosis; and the use of small doses which accomplish little, but expose the patient to possible drug sensitivity. Toxic reactions to propylthiouracil occur in 2 per cent of patients. In 0.6 per cent of patients agranulocytosis may develop. The type of hyperthyroidism most likely to respond to medical treatment is primary hyperthyroidism or Graves' disease with small glands and mild toxicity.

HARRIS


The authors compared the effect of strophanthidin K, lanatoside C (Cedilanid) and digitoxin on the cardiodynamics in 32 cases with various types of heart failure using the method of Schultz and Blumberger for the determination of the phases of isometric contraction and of ejection. In cases of hypertensive and/or arteriosclerotic heart disease and cases with aortic lesions, strophanthidin and Cedilanid proved most effective by shortening the isometric contraction and lengthening the ejection time. Similar and optimal results were obtained in mitral and tricuspid lesions with digitoxin. All three glycosides had but little effect on the failing cor pulmonale.

PICK


Changes following 0.4 Gm. doses of theophylline diethanolamine were observed in 11 patients. Cardiac output rose slightly in the compensated cases, parallel with a rise in oxygen consumption. In the decompensated cases cardiac output rose more than the oxygen consumption, resulting in decreased arteriovenous oxygen difference and a better metabolic oxygen exchange. The data imply that the drug has a direct myocardial stimulating action. Both systemic and pulmonary venous pressures were rapidly lowered, presumably due to dilatation of the vascular bed. Pulmonary arterial blood pressures were consistently diminished, as were pulmonary capillary venous mean pressures. This explains some of the effects on cardiac dyspnea. There was no consistent change in brachial artery pressures. Respiratory volume, respiratory rate, pulse rate and oxygen consumption always increased.

ENSELBERG


The author reports a case of tuberculous peri-
carditis that did not respond to intramuscular streptomycin. However, weekly injections of 1 Gm. of streptomycin dissolved in 2 cc. of water, into the pericardial sac for six weeks brought rapid subsidence of fever and disappearance of the pericardial effusion.

**BERNSTEIN**

**Observations on the Effects of the Automatic Blocking Agent, Bis-trimethylammonium Pentane Diibromide (C<sub>4</sub>) in Normal Subjects and in Patients with Peripheral Vascular Disease and Hypertension, and Comparison with Tetraethylammonium Chloride.**


The effects of the intravenous administration of the autonomic ganglionic blocking agent, bis-trimethylammonium pentane diiodide or dibromide (C<sub>4</sub>) were studied in 22 normal subjects, 16 patients with peripheral vascular disorders, and 25 patients with hypertension.

In 16 of the 22 normal subjects there followed a definite increase in the skin temperature of the extremities, somewhat more marked in the lower than in the upper extremities, and in the fingers and toes, than in the arms and legs. The peak of the response occurred within 20 minutes after the injection, and then the effect gradually tapered off over the next three or four hours. A similar type of change was noted in the patients with hypertension.

In 11 of the 16 patients with vascular diseases a definite increase in skin temperature was observed, while in the remaining 5, this did not occur. Seven of the patients were subsequently subjected to a sympathectomy. In the 4 of these who had had a good response with C<sub>4</sub>, skin temperature readings obtained after sympathetic demerivation were generally only slightly greater than the maximal increase noted after the use of the drug. In the other 3 patients, who had little or no increase in skin temperature after C<sub>4</sub>, there was a much greater rise after lumbar sympathectomy.

The autonomic blocking action of C<sub>4</sub> was three to four times as prolonged as that of tetraethylammonium chloride, the former drug also being effective in much smaller doses. Furthermore, it produced none of the side effects that occurred after tetraethylammonium chloride.

**ABRAMSON**


Four patients with scleroderma were treated with multiple intravenous infusions of 0.1 and 0.2 per cent solutions of procaine hydrochloride over a period of several months. All 4 cases showed remarkable improvement in the color, texture and elasticity of the skin and mucous membranes, and increased mobility of the interphalangeal, metacarpal-phalangeal and temporal mandibular joints. There was no appreciable effect in one case on the course of ulcers noted over the bony prominences of the joints of the hands. The infusions were given slowly; an average of 30 minutes elapsing during each one. The dose per infusion ranged from 0.5 to 0.8 Gm. in 10 per cent dextrose and water.

**KITCHELL**

**Temporal Arteritis—Two Cases Treated with Aureomycin.** Lancet 260: 89 (Jan.), 1951.

Two cases of temporal arteritis are described in which both patients were treated with Aureomycin. In case 1 the patient improved steadily while he was on Aureomycin, and the difference in his whole
appearance before and after starting the drug was remarkable. After two weeks he was afebrile and symptom-free. In case 2 the drug was badly tolerated, and its effect was less conclusive. However, the fall of temperature and return to normal of the temporal arteries soon after starting treatment with Aureomycin, and the relapse 48 hours after it had to be stopped, indicated a definite influence of the drug on the disease.

Although it is not claimed that the result of treatment in two cases is in any way conclusive, it is felt that the response to Aureomycin was sufficiently encouraging for this remedy to be tried by other workers.

BERNSTEIN


The effect of chloroform, ether, cyclopropane, divinyl ether, and nitrous oxide were studied in the dog heart-lung preparation. All these anesthetic agents produced cardiac dilatation of varying degree, presumably resulting from impairment of myocardial efficiency.

SAGALL


The authors obtained five fractions of tincture of digitalis by differential extraction, primarily with chloroform. The potency of each fraction was determined by the lethal effect after intravenous administration in the pigeon and cat, and by oral assay in man. The amount of digitoxin in each fraction was estimated by a fluorometric procedure. The results indicated that probably all of the oral activity for man is due to digitoxin which can be determined by microchemical measurements. This method offers a procedure for predicting the potency of digitalis preparations by microchemical analysis alone.

SAGALL


The threshold dose of epinephrine necessary to induce ventricular premature beats or tachycardia was determined in eight dogs under cyclopropane anesthesia. This threshold dose was increased slightly by tetraethylammonium chloride or by thoracic sympathectomy, but at the same time a reduction in the maximum pressor response was also observed. Restoration of the original arterial blood pressure by constriction of the aorta or blood infusion restored the original cardiac sensitivity to epinephrine. The authors concluded that the cardiac sympathetic innervation plays only a minor role in the induction of ventricular ectopic rhythms by epinephrine and cyclopropane.

SAGALL

PHYSIOLOGY


The authors studied the effect of stimulation of the stellate ganglion upon persistent nodal rhythm produced in rabbits by extirpation of the sinus node. Electrocardiographic tracings showed, following a short period of latency, a considerable acceleration of the ectopic rhythm and marked shortening of the P-R interval. The authors conclude that variations of both sympathetic and vagal tone may be responsible for variations of rate and P-R intervals observed in clinical cases exhibiting nodal rhythm.

Pick


Short time application of a current of 24 volts and 426 kilocycles to a spontaneously beating fragment of the heart of the chicken embryo produced an increase of the force of contraction and a three to five time acceleration of their frequency. These alterations disappeared instantaneously with interruption of the stimulating current. If the action of the latter was prolonged over several minutes the contractions occurred in groups which were separated by periods of complete latency. The authors feel that this observation may represent an adequate method for the study of the phenomena of contractility and automatism.

Pick


Action potentials were obtained with the cathode tube electrocardiograph from a part of the heart of chicken embryos. The preparation continued to contract after being kept one to three hours in a tissue culture medium. The electrocardiogram consisted of a small and narrow RS complex of 0.04 second duration, followed by a tall, wide and diaphasic (positive-negative) wave of about 1.5 second duration.

Pick

In continuation of previous experiments the authors were able to record for the first time in form of a curve, variations of electrical resistance occurring in a fragment of the heart of the chicken embryo during its spontaneous contractions. The curve was diphasic, the positive part indicating diminution of resistance by 0.5 ohm and the negative phase its augmentation by 0.75 ohm. The initial, positive part of this oscillation occurred always more rapidly than its final (negative) portion.

PICK


The authors present data confirming earlier reports that a contraction of plasma volume, a decrease in renal clearances, and a diminished salt and water excretion occurs on quiet standing. However, this antidiuresis is not necessarily dependent upon a contraction of total plasma volume, since, even when plasma volume was expanded by rapid infusions of albumin, salt and water excretion diminished during standing.

The renal response to salt loads is conditioned in part by the rise in serum sodium concentration. In these studies the usual renal response to elevated serum levels (following hypertonic saline) could be prevented or reversed by standing upright. Apparently alterations in both composition and effective distribution of plasma are important in the regulation of glomerular filtration and tubular reabsorption of sodium.

WAIFE

RHEUMATIC FEVER


The authors review the literature concerning the association of rheumatic fever and glomerulonephritis and present their own data. Acute glomerulonephritis and acute rheumatic fever occurred simultaneously in 2.5 per cent of 117 cases of clinically diagnosed acute nephritis. An additional 1.7 per cent had rheumatic heart disease. Thus, in the nephritis series 4.2 per cent had acute or chronic rheumatic involvement of the heart. In patients with rheumatic disease 5 per cent had acute or chronic glomerulonephritis at autopsy. Although the beta hemolytic streptococcus is the most frequent precipitating agent in both diseases, the determining factor as to organ susceptibility is unknown.

HARRIS


Eight new cases of combined syphilitic aortitis and chronic endocardial lesions of probable rheumatic origin are presented along with a review of 47 cases found in the literature. Such combined lesions occur in 1 to 10 per cent of large autopsy series. The clinical possibility of such a combined etiology should be considered when overlapping evidence of either disease is discovered clinically. Coexistent syphilitic and rheumatic lesions may be present when aortic aneurysm, aortic insufficiency and a presystolic apical murmur are present or when mitral stenosis complicated by aortic regurgitation is found in the presence of clinical evidence of syphils. The combination may also be present when aortic aneurysm and a diastolic murmur occur in a patient with a history of rheumatic infection.

HARRIS


The authors report treatment of 11 consecutive patients ranging from 6 to 18 years of age, 6 of whom had initial attacks and 5, recurrent attacks. Adrenocorticotropic hormone (ACTH) was given intramuscularly in a daily amount of 30 to 100 mg every six to eight hours for four to seven days. In all patients there was a disappearance of the associated signs and symptoms in 24 to 72 hours after the institution of therapy. In all these patients the level of circulating eosinophils before treatment ranged from 0 to 68. The authors feel that the circulating eosinophils are to be considered the most sensitive index to cortical hormone secretion. Three patients who had second courses of ACTH failed to show zero levels of eosinophils during treatment. The authors feel that a failure to drop to zero levels, or an eosinophil rise during treatment, is probably indicative of inadequate dosage; a fall in circulating eosinophils below normal range after discontinuation of therapy may indicate the necessity for readministration of ACTH. During therapy, circulating eosinophils should be maintained at zero levels. Four to 12 months after treating the 6 patients with initial attacks, 2 showed no evidence of residual cardiac damage, and 3 showed equivocal evidence. In 5 patients experiencing a recurrent attack there was no clinical evidence of increased cardiac damage.

From this work it would appear that the early treatment of acute carditis with adequate amounts of ACTH would shorten the course of the disease, result in minimal residual cardiac damage, and prevent death due to progressive carditis and congestive failure.
ROENTGENOLOGY


An experience with 147 carotid angiograms performed with 35 per cent Diodrast on 108 patients is reviewed as to complications that occurred. The patients were unselected.

Complications occurred in 14 cases, or nearly 10 per cent. Three of these were fatal. One fatality was attributed to postinjection cervical hematoma with resultant jugular vein obstruction. The other 2 were due to massive cerebral infarction.

Four cases developed permanent neurologic defects which were nonfatal, and were felt to be due to angiography. Only one of these was substantiated by pathologic examination. The remainder of the 14 cases had transient paralyses, convulsions, or other minor complications. In only one case did manifestations of drug sensitivity arise; and in this patient, no neurologic sequelae occurred.

The authors believe this high proportion of cerebrovascular accidents is due to vasospasm superimposed on an already impaired cerebral circulation. Prophylactic measures such as papaverine administration, sodium luminal, or stellate ganglion blocks are suggested.

SUTURE IN HEART AND VASCULAR SYSTEM


A method is described for ligation of such large vessels as the aorta. A long segment of artery is dissected free to permit the application of two noncrushing arterial clamps; between these the vessel is then severed. Both ends are sutured with silk, using a continuous stitch. This method appears to eliminate, as far as possible, the danger of hemorrhage from ligature failure or erosion.

ABSTRACTS


A case is described in which the aorta was inadvertently entered in the process of taking a biopsy from a neighboring metastatic carcinoid, and consequently the vessel had to be ligated. Complete paralysis of the feet and legs followed, and the skin of the extremities turned a bluish-white color. However, the next day the feet became warm and pink. When the patient left the hospital, no signs of nutritional changes were noted on the extremities, but a large superficial ulceration was present over the sacrum. Complete loss of motor power still persisted. Six months after ligation of the aorta, the patient became oliguric and developed marked lymphedema of both lower extremities. He died 5 days later, and at autopsy diffuse carcinoma was present.


Five cases of sudden death occurring immediately after completion of a surgical procedure are reported. Four of the patients were children, one was an adult. In only one case was there any suggestion of an abnormal cardiac response during the course of the operation, although all demonstrated myocardial disease or congenital malformation of the heart. The fact that the disastrous changes occurred during suction upon a tube passed into the trachea through the endotracheal tube or during extubation was given significance as a possible mechanism for the cause of death.


A series of 40 patients in whom the internal carotid artery was ligated for intracranial aneurysm is reviewed for complications. Seven deaths ensued, but only 6 were attributed to the procedure. The highest percentage of fatalities occurred in patients over 50 years of age. Various nonfatal neurologic complications occurred in an additional 9 cases.

Complications may occur within a few hours or later. The early manifestations are thought to be due to inadequate circulation. Late complications are caused by thrombosis or by emboli from a thrombus in the ligated internal carotid.

The Matas percutaneous carotid compression test is of value in predicting accidents only when it is positive. Bilateral carotid angiography and recordings of intracarotid pressure are advocated to test the adequacy of the collateral circulation prior to ligation.

Methods of preventing late complications caused by thrombosis include cervical sympathetic blocks
with procaine, administration of anticoagulants, and papaverine.

**Frobose**


After reviewing the findings associated with sudden occlusion of the distal end of the aorta by an embolus, the author reported a case of his own which was successfully treated by embolectomy 6 hours after onset of the condition. An incision was made in the right common iliac artery and the embolus from the aorta was expressed through this opening. Both iliac arteries filled immediately and pulsed normally, and a pulse was felt in the right dorsal pedal artery. None was observed in the left dorsal pedal artery, although the foot became warm. This pulse returned the next day. The postoperative recovery was uneventful. The patient regained complete function in his lower extremities. He lived for 14 months after embolectomy. His death was caused by a myocardial infarction.

**Abramson**


The authors analyzed 580 cases of thrombophlebitis and phlebothrombosis observed in a large general hospital over a period of seven years. They found that despite the various prophylactic measures that are being carried out on a large scale, the incidence of thromboembolism was increasing. The age incidence of fatal pulmonary embolism followed closely the age distribution of thrombosis. In approximately one-half of the former cases there was no clinical evidence of the presence of conditions which might lead to the production of emboli.

About one-fourth of the cases of thromboembolism occurred postoperatively, while the next largest number was observed in patients with heart disease. The highest mortality rate was noted in the latter group, while the lowest was present on the surgical and obstetrical services.

**Abramson**


A technic for producing pulmonary artery stenosis in dogs is described. The thorax is opened on the left side, and the heart and the pulmonary artery are exposed, the latter being isolated along its full length from valve ring to bifurcation. A curved clamp is applied to the superior aspect of the vessel and slowly closed to produce a fusiform narrowing of the lumen. A continuous mattress suture is placed along the inside of the clamp, the latter is removed, and the occluded segment is incised along the suture line.

This method of partial occlusion is technically safe and can be applied to the aorta and other great vessels. The complication of vessel wall erosion has been avoided by the absence of external constriction.

**Abramson**

---

**AMERICAN HEART ASSOCIATION, INC.**

1775 BROADWAY, NEW YORK 19, N. Y.

Telephone Plaza 7-2045

---

**ANNUAL MEETING**

The Annual Meeting and Twenty-Fifth Scientific Sessions of the American Heart Association will be held at the Hotel Statler, Cleveland, Ohio, April 18–20, 1952. All of those planning to attend should make room reservations directly with the Hotel Statler in Cleveland at the earliest possible date.

The Chairman of the Program Committee for the Annual Scientific Sessions is Dr. Irvine H. Page, Cleveland Clinic, 2020 East 93 Street, Cleveland 6, Ohio. All who desire to present papers at the meeting in Cleveland should forward to Dr. Page an abstract (in triplicate) of the proposed presentation of not more than 300 words. As a departure from previous practice, arrangements will be made at this meeting for a special session to present papers dealing with the basic science aspects of cardiovascular disease.

The deadline for the receipt of abstracts is January 1, 1952.