BLOOD COAGULATION


It has been shown that in the one stage method of determining the prothrombin level in the blood, the end point in the test may be reached when as little as 40 per cent of the available prothrombin has been converted to thrombin. In other words, a plasma containing 40 per cent of the normal amount of prothrombin might give a 100 per cent prothrombin estimate by this method. Furthermore, in carrying out the test, such factors as fibrinogen, prothrombin accelerator, and the various anticoagulation substances are uncontrolled. The two stage method, which allows the prothrombin conversion to go to completion, and then in a second step permits the thrombin thus formed to act on a standardized fibrinogen solution, eliminates a number of the variables present in the one stage test. The chief objection to it is that it is difficult to perform.

The two stage test is a more accurate measure of available prothrombin, while the one stage test gives more information regarding the likelihood of bleeding, since it is a measure of the activity of a number of factors, both coagulation and anticoagulation. As an estimate of liver function, both methods are of value, although the two stage test, being a more sensitive reflection of changes in prothrombin, may show degrees of liver damage not registered by the one stage test.

With regard to the control of anticoagulant therapy, the one stage method is a more sensitive measure of heparin effect than the more commonly used coagulation time of whole blood. In dicumarol therapy, efforts are directed toward the control of the single factor, prothrombin, and the two stage method is preferable. However, the one stage test is of value as a measure of the overall safety factor.

ABRAMSON


The author reviews the results of the use of heparin in the routine management of thromboembolic disease during a nine year period (1940-1949) at the Mariestad Hospital, Sweden. Management consisted of (1) very early diagnosis of incipient thrombosis, (2) energetic treatment with heparin by intermittent intravenous injection, and (3) early mobilization of the patient. Clotting times were not determined routinely. Four hundred and forty cases of thromboembolism were diagnosed and 438 were recognized early enough to be treated with heparin. There were only 2 deaths. Complications occurred in less than 4 per cent of the cases and included nonfatal pulmonary embolism, recurrence, slight hemorrhagic
tendency, and anaphylaxis. Thirty-nine patients had pulmonary embolism before undergoing treatment and all recovered.

Wessler


The authors used regional heparinization in patients following the removal of arterial emboli and after the repair of a traumatized artery and excision of an aneurysm. In some instances the intravascular injections were continued for several days postoperatively. In others the injection was made at the time when the operation was performed. It was concluded that regional heparinization is of value in the prevention of thrombosis at the suture line. Furthermore, this form of administration of an anticoagulant reduces the danger of hemorrhage from the wound.

Abramson


The purpose of this study was to determine whether dicumarol, given in small doses so as to avoid hemorrhage as well as the necessity of extensive laboratory control, would have any demonstrable effect in reducing postoperative thromboembolic crises. The majority of the patients in the group were over 35 years of age and undergoing major pelvic and vaginal plastic surgery. Most of the subjects were given dicumarol one to two days postoperatively and again five days later. A third dose was prescribed after an additional five days if the patient was still in bed. Prothrombin determinations demonstrated that in most women the doses of 100 to 200 mg. were sufficient to prolong the time appreciably by the second day after ingestion, this effect usually lasting two to five days. Comparison between the dicumarol-treated group and similar untreated groups gave fair but not striking evidence supported by statistical analysis that the drug reduced thromboembolic complications, but only during the period of its action.

Abramson


The authors describe a simple, reproducible and economical method for determining prothrombin levels in blood. The procedure consists of drawing whole blood into capillary tubes containing dry oxalate, adding this to a measured amount of thromboplastin on a slide, drawing the mixture in and out of the capillary tube, and timing the formation of a fibrin strand. The test can be performed with small volumes of blood, facilitating repeated determinations in small animals. In man, it permits the bedside determination of prothrombin time from blood obtained by finger puncture.

Sachs

CONGENITAL ANOMALIES


The authors discuss the use of new diagnostic technics in the diagnosis of dextrocardia. By means of standard diagnostic methods, roentgenography, catheterization of the right side of the heart, and “unipolar” electrocardiography, the position of
**ABSTRACTS**

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the heart and its chambers was studied in 2 cases. One case, a 27 year old man, showed mirror-image dextrocardia associated with situs inversus, sinusitis, and bronchiectasis (Kartagener's triad). The other case, a 21 year old student, had uncomplicated congenital isolated dextrocardia.

**Hellerstein**


Children with cyanotic congenital heart disease frequently tolerate relatively low degrees of oxygen saturation of the blood without any noticeable effects on the intelligence or on the state of consciousness when at rest. An investigation was made of the possible role of carbonic anhydrase in the blood of children with cyanotic congenital heart disease. Carbonic anhydrase is an enzyme, present in the hemoglobin of red cells, which accelerates the reaction of carbonic acid to carbon dioxide and water.

The carbonic anhydrase level in the blood was determined in 18 patients of different ages with proved congenital heart disease of the cyanotic type. The values found were compared with those obtained on 6 patients with congenital heart disease of the acyanotic type, 13 normal newborn infants and 27 patients with no cardiac disease who varied in age from 1 week to 20 years. The carbonic anhydrase was elevated in all of the patients with cyanotic congenital heart disease as compared with patients with acyanotic congenital heart disease or with no heart disease. When the results were corrected for the increased hematocrit, the blood carbonic anhydrase of the cyanotic patients did not differ significantly from that of the acyanotic patients of similar ages.

**Mintz**


After weaning, 400 female rats were placed on vitamin A deficient diets containing only sufficient carotene to permit continued growth. On attaining sexual maturity, the carotene was eliminated from their diets. They were mated with male rats who had been fed adequate diets. Of a total of 1168 offspring, 75 per cent possessed some developmental defect of the eyes. No instance of another anomaly occurring in the absence of ocular manifestations has ever been found in rats with maternal vitamin A deficiency.

Using the ocular manifestations as a criterion of maternal vitamin A deficiency, the hearts and major thoracic vessels of 64 newborns and fetuses of 17 days gestational age and over, were studied. Nineteen offspring of comparable age from adequately fed mothers were used as controls. Twenty-eight of the 64 young studied showed congenital abnormalities. Interventricular septal defects were found in 22 with the majority of the defects occurring at the base of the septum. Sixteen of these had other cardiovascular abnormalities. Aorticopulmonary septal defects were observed in 3 cases. Embryologic aortic arch anomalies occurred in 22 cases, of which 16 were associated with an interventricular septal defect. These abnormalities included a retrograde subclavian artery, a right-sided aortic arch with 5 variants, the absence and other variations of the ductus arteriosus, the absence of the aortic arch and agenesis of the left pulmonary artery.

The authors state that many of the cardiovascular anomalies observed in these rats closely simulated malformations observed in man. They further emphasize that environmental as well as genetic factors may alter the development of the cardiovascular system.

**Margolies**


Forty patients with acyanotic congenital heart disease, who had presented diagnostic problems, were studied. The over-all findings suggested that the clinical diagnosis and x-ray diagnosis were reliable in approximately one half of the cases only. The clinical diagnosis appeared to be more reliable in patients with patent ductus arteriosus while the x-ray diagnosis was more reliable in patients with interatrial septal defects. The real value of heart catheterization, therefore, is in that group of patients whose disease presents unusual features.

**Waife**


The authors describe the case of a 6 months old white infant, born at term with no history of trauma to the neck region, who entered the hospital with a temperature elevation and a cough which was proved to be pertussis. By the third day definite signs of congestive failure were apparent. In the left posterior triangle of the neck, there was discovered a palpable thrill and a loud continuous bruit with systolic accentuation. This was transmitted to the crown of the head, the base of the neck, and the left elbow. By digital compression at the point of maximum bruit, an immediate decrease in heart rate of 25 beats per minute, and a rise in blood pressure in the right arm from 88/26 to 106/54 (Branham's bradycardia) was produced. Because of these findings, a diagnosis of arteriovenous fistula of one of the major vessels of the left cervical region with associated heart failure was made.
At operation, the fistula was found overlying the transverse process of the second cervical vertebra and was removed; it measured 8 mm. in diameter. The vertebral artery and vein were the chief vessels involved. The bruit and thrill disappeared and the pulse rate was below 100 by the third postoperative day. The chest film taken seven days after operation showed a striking decrease in the transverse diameter of the heart and clearing of the pulmonary congestion. Nine months later, the child was still in good health.

The authors could find no other case of congenital arteriovenous aneurysm of the vertebral vessels in the medical literature.

Margolies


Because intravenous angiocardiography in cases of coarctation of the aorta has not been able to demonstrate the stenotic segment entirely satisfactorily, retrograde arteriography was used in 15 patients in whom the diagnosis of coarctation of the aorta had been made on the basis of the clinical findings. The ages ranged from one year to 35 years. The injection was made into the left common carotid artery in all cases, after the vessel had been exposed under local anesthesia. Seventy per cent Diodrast was found to give the most satisfactory result. The dose found to be most satisfactory was approximately 1 cc. per Kg. of body weight up to a maximum of 50 cc. For satisfactory visualization, it is imperative that the first film of the series be taken immediately on completion of the injection and the remaining 2 to 3 films should be exposed as rapidly as the cassettes can be changed by hand. In one patient, a hematoma developed in the wound. Since care was taken to avoid entrance of the dye into the cerebral circulation, there were no other complications. In 9 of the patients, the exact location, degree, and extent of the stenosis were visualized, and these findings were confirmed at operation. Unnecessary thoracotomy was avoided in 4 of the patients because of the nature of the aortic defect visualized by this means indicated that operation had little to offer in these particular instances.

Wendkos


Two anomalies of the coronary arteries are reported. In an infant whose left coronary artery arose from the right pulmonary artery, the supply of oxygen to the myocardium of the left ventricle was insufficient to maintain the integrity of the tissues. In spite of the fact that the anoxia was of such a degree as to result in focal necrosis and fibrosis of the myocardium, there was no apparent tendency toward extension of branches from the right coronary artery into the wall of the left ventricle to compensate for this deficiency of oxygen. On the other hand, in the second case a complete absence of the left coronary artery was accompanied by the development of supplemental branches from the right coronary artery to the left side of the heart, and there was no apparent functional or anatomic abnormality of the myocardium.

It is suggested that the development of supplemental (collateral) circulation in the myocardium is not stimulated by local anoxia, but that pressure gradients may play a significant role in this phenomenon.

Bernstein

CONGESTIVE HEART FAILURE


The author reviewed the clinical features of a group of patients with congestive heart failure to evaluate the part played by venous congestion of the liver in their symptoms. In 456 cases of congestive failure the liver was found to be enlarged in every case by the percussion method. In 44 per cent of these, enlargement was rather sudden. Following recovery from congestive failure the liver remained enlarged in 22.5 per cent and it was tender in about half of these. Jaundice was present in 18 per cent. One hundred twenty-six out of 456 cases had clinical jaundice, and of these 81 died, a 64 per cent mortality. This suggests that jaundice indicates a poor prognosis.

Seventy-eight per cent of these cases had ascites. In 5, ascites was the first sign of congestive failure, although all 5 were chronic alcoholics with evidence of concomitant portal cirrhosis. Urobilinogen was present in excess in the urine of 20 patients. It persisted in 4 who had apparently recovered although the liver remained palpable in 2 of these. If previous liver disease can be excluded the persistence of excess urobilinogen in the urine suggests a poor prognosis. The cephalin flocculation test was positive in 20 cases.

Many factors influence the liver function tests; these include circulatory disturbances, hepatocellular damage, conditioned nutritional deficiency, fever and bed rest. The author feels that cardiac cirrhosis or the hepatic fibrosis of heart disease cannot be diagnosed with certainty. It should be suspected in patients who have recurrent bouts of cardiac failure especially in the presence of rheumatic heart disease, and who complain of vague symptoms of indigestion, flatulence, right upper quadrant pain with or without hepato- or splenomegaly.

Waife

The author presents the case reports of 2 children who presented at necropsy both cardiac and neurologic findings. A 5 year old boy ran a slow course of progressive congestive failure. Autopsy revealed a heart weighing 330 Gm., lymphocytic and fibroblastic infiltrations, absent Aschoff nodules and normal valves. Subacute encephalitis was present. No etiologic agent was discovered. The second child was a 7 year old boy with congestive failure. Hemiplegia was caused by occlusion of the left middle cerebral artery. The heart was enlarged and showed thrombi in the left auricular appendage, but there was no microscopic evidence of myocardial involvement. No etiologic diagnosis could be made. Both children had chickenpox before the onset of their illnesses.

WAIPE

CORONARY ARTERY DISEASE, MYOCARDIAL INFARCTION


Occlusion of a coronary vessel in the course of subacute bacterial endocarditis is a rare occurrence. The authors collected 13 cases from the literature and they reported two of their own. The first was a 31 year old woman with a typical subacute bacterial endocarditis superimposed on an old rheumatic mitral and aortic lesion. After one month of successful penicillin therapy the patient suddenly developed severe anginal pain with electrocardiographic signs of an anterior wall infarct. She died in progressive heart failure 48 hours later. The autopsy revealed a clot thought to be an embolus in an otherwise normal anterior descending branch of the left coronary and a macroscopically visible infarct of the anteroseptal and apical region of the left ventricle. The second observed case was that of a 39 year old man with seropositive aortic insufficiency who died suddenly in the course of progressive heart failure which had not responded to treatment. At post mortem, an endocarditis of both mitral and aortic valves was found. A large polyposus vegetation on the right aortic leaflet completely occluded the ostium of the right coronary. No myocardial infarction was present in this case.

The authors conclude that the usual outcome of a coronary occlusion in the course of a subacute bacterial endocarditis is sudden death. The development of myocardial infarction is a rare event and seen only in cases who survive 24 to 36 hours.

Pick


A series of 7 cases of myocardial rupture is reported because they occurred in a small hospital during a single year. Myocardial rupture is most likely to occur during the first two weeks following an acute infarct. Keeping the patient at absolute bed rest during this period will minimize the danger of this complication. The data presented, together with those of Foor, suggest that the use of anticoagulant drugs does not predispose to myocardial rupture, but statistical analysis of a much larger series of cases is necessary.

Durant


The authors present the electrokymographic observations of left ventricular motion in 48 patients having precordial distress, as well as the clinical diagnoses of a group of 18 patients who had abnormal electrokymograms of the right ventricle. Abnormal tracings from the wall of the left ventricle were observed in myocardial infarction, coronary insufficiency, angina pectoris, and in patients with symptoms atypical of angina pectoris. Such abnormal findings may be obtained in the presence of normal or borderline routine electrocardiograms. On the other hand, normal electrokymograms can be obtained in the positions studied from the left ventricle of patients with myocardial infarction, angina pectoris, and coronary insufficiency. Abnormal electrokymograms can be obtained from the wall of the right ventricle, and 15 of 18 patients with this finding had evidence of cardiac or pulmonary disease or both. Abnormal electrokymograms can be obtained from the wall of both ventricles in the same individual.

An explanation is offered for the abnormal electrokymogram findings: the myocardium of the ventricular wall is unable to overcome the load placed upon it as effectively as a normal myocardium, due to some deficiency in its elastic and/or contractile properties. And further, the burden for the cardiac output may then principally rest on the piston-like action of the interventricular and airciculoventricular septa with the walls acting as passive retainers to a greater or lesser extent.

Durant


In analyzing 635 consecutive autopsy protocols in an institution where the average age at autopsy was 60.04 years, the author found that in 88 cases
death was due to some form of coronary heart disease. Pulmonary embolism occurred in 26 of these 88 cases of coronary heart disease. Massive embolism occurred 8 times whereas minor pulmonary emboli were present in 18 cases. The incidence of pulmonary embolism was the same regardless of whether or not myocardial infarction had occurred but the incidence of massive embolism was higher in the group not showing myocardial infarction. The contributory role of the minor pulmonary emboli is difficult to evaluate, but the occurrence of 11 lung infarcts in the cases of minor embolism indicates that they had a bearing on the fatal outcome in at least some of the deaths. The presence of clinically diagnosed congestive heart failure did not appear to affect the incidence of pulmonary embolism in the coronary heart disease group for, of the 26 cases of pulmonary embolism in this group, 13 developed in patients showing clinical congestive failure and 12 developed in patients with no clinical congestive failure. However, evidence of some degree of congestive heart failure was found at autopsy in most of these 12 subjects.

**Wendkos**


This is a case report of an acute anterior wall myocardial infarction complicated on the sixth day by acute suppurative appendicitis with rupture and generalized peritonitis. The heavy sedation required to relieve the cardiac pain probably masked the pain of the appendicitis. The high mortality in surgical intervention during the acute phase of coronary occlusion is stressed. The authors feel that in such cases ether is the anesthetic agent of choice.

**Klosk**


The authors analyzed 414 consecutive cases of myocardial infarction not treated with anticoagulants between 1935 to 1948. It was found that age, sex, pre-existing hypertension, the presence of angina or previous infarction materially affect the statistical deductions of previous reports. The use of average ages, for example, is misleading since significantly different age-distribution curves may give identical figures for average age. A difference in mortality rate may result as a reflection of the masked age distribution rather than as the result of therapy. Since the mortality rate from myocardial infarction is about 50 per cent higher in women than men, the sex distribution in a series will influence the mortality rate. The alternate case method of study does not equalize these variables.

In this series 15.5 per cent of the patients died, and 6.5 per cent had one or more thromboembolic phenomena. The combined mortality rate of over 4000 cases in the literature was 23.5 per cent, and embolic phenomena occurred in 10.8 per cent of 1927 cases.

**Waipe**

**ELECTROCARDIOGRAPHY**


Three hundred and twenty-five electrocardiograms taken on 29 male and 26 female children with active carditis or inactive rheumatic heart disease were analyzed. There were 229 tracings taken on children during the active phase of the disease, and 96 during the inactive period. A Q-T interval of 0.41 second or more was considered abnormal.

The corrected Q-T interval was 0.41 second or more in 38 per cent of the electrocardiograms of patients with active carditis, whereas only 27 per cent of the electrocardiograms taken during the inactive phase of the disease had a prolonged Q-T, interval. In the same patients, the highest Q-T, interval during the active phase of the disease was compared with the highest Q-Tc interval during the inactive phase. The interval was prolonged in 47 per cent during the active episodes, and in 29 per cent in the quiescent period. Electrocardiographic abnormalities other than Q-T, interval prolongation were found in 54 per cent of the serial tracings during active episodes. The P-R interval was prolonged in 30 per cent of these. The duration of the Q-Tc interval was definitely not prolonged in all cases of rheumatic carditis. However, it was prolonged in 76 per cent of the patients with pancarditis and congestive failure. Fifty per cent of the patients in the quiescent period who had cardiac hypertrophy had an increased Q-Tc, interval. The incidence of Q-Tc, interval prolongation found was no greater than the accepted incidence of electrocardiogram abnormalities in active carditis.

The authors conclude that Q-T, intervals in electrocardiograms, per se, are not diagnostic of active rheumatic carditis.

**Margolies**


Electrocardiographic indications of coronary insufficiency are more likely to become evident in tracings made following exercise than in those made when the patient is resting. To reveal such changes, electrocardiograms have been made after the two-step exercise test. In interpreting the electrocardiogram following such exercise, the P-R interval is taken as the control level. Depression of the S-T segment of over 0.5 mm. in any lead is considered a positive result. Such a change is usually maximal...
in the precordial lead. Other changes considered to be corroborative of coronary artery disease are a change from an upright T-wave to an isoelectric or inverted T-wave, a change from a flat or negative to a positive T-wave, premature beats or a more significant arrhythmia, widening of the QRS complex, intraventricular or bundle branch block, large Q waves, prolongation of the P-R interval or heart block.

The value of this added refinement in the study of patients who experience recurrent bouts of pain in the chest is illustrated in 3 cases.

Wendkos


A 37 year old woman developed fever and headaches. An acute leukemia with paramyeloblasts was found. The first electrocardiogram was normal; another tracing obtained 17 days later showed complete A-V block with bradycardia. Autopsy confirmed the clinical diagnosis. Extensive leukemic infiltrations were found in the upper interventricular septum, particularly in the fibrotic part. The A-V node was partially destroyed.

Scherf


The authors indicate that electrocardiograms obtained with the exploring electrode in the left supraventricular fossa or over the left clavicle at the lateral border of the sternoleidomastoid muscle reflect the potentials of the left ventricular cavity. In 69 of 100 patients, such tracings were of the Q8-inverted T pattern. The authors believe that these leads explore the subendocardial surface of the left ventricle and demonstrate changes indicative of subendocardial damage where standard methods are unsuccessful.

Hellerstein


This study was performed because of the difference of opinion as to whether or not there is a correlation between electrical and mechanical events of the cardiac cycle. Simultaneous electrokymograms of the pulmonary artery and ascending aorta and electrocardiograms were done. In a study of more than 50 normal subjects, the pulmonary artery ejection phase at times preceded aortic ejection (as measured by the upstroke of the electrokymographic curves in both instances) by as much as 0.03 second or followed it by as much as 0.02 second. Of 25 cases of bundle branch block, the authors found correlation between the electrical and mechanical events in only 8. In 17 cases the relation between the onset of the pulmonary artery upstroke and that of the ascending aorta was within the normal range. Repetition of the curves at different times gave the same results within the error of measurement of 0.01 second. These results indicate a lack of correlation between electrical and mechanical events of the cardiac cycle.

Mintz


The importance of the subject of hypopotassemia is stressed because of the frequency with which it occurs and the profound nature of the disturbances of body function that exist during this state. Emphasis is placed upon the value of electrocardiography as an aid in diagnosis and as a means of following the effects of therapy.

The electrocardiographic patterns observed in 79 patients with hypopotassemia of various etiologies are presented. Five different patterns of T wave and S-T segment changes accompanied by Q-T segment prolongation were observed. These consisted of (1) depression of the S-T segment of varying degrees, (2) inversion of T waves, (3) T waves of normal amplitude with prolongation of the Q-T interval, (4) low amplitude of T wave, and (5) prominent U wave following T wave. The first two patterns constituted the changes shown by 50 per cent of those observed. Pattern 1 was observed most frequently after prolonged vomiting and pattern 2, in diabetic acidosis. The changes observed were immediately reversible following the administration of potassium. It was found that the U wave is an important criterion of hypopotassemia, having been present in 33 cases (42 per cent). Evidence is presented which suggests that lengthening of the Q-T or Q-U interval are both important in the diagnosis of hypopotassemia.

In some instances of alkalosis a diminished serum or ionizable calcium probably contributed to the electrocardiographic changes. However, the effect of administration of this electrolyte suggested that its role in the production of the alterations was a minor one.

Durant

Hypertension

Dihydroergocornine (D.H.O. 180) is a derivative of the ergotoxine group of alkaloids with marked sympatholytic and adrenolytic properties. Following a ten week control observation period the compound was administered orally in daily doses of from 4 mg. to 12 mg. to 10 hypertensive patients. After six weeks a placebo was substituted and maintained for four weeks. No significant hypotensive effect was demonstrated with this dosage which is 20 to 50 times greater than the effective intravenous dose. The subjects showed some lowering of blood pressure following intravenous D.H.O. 180.

WAIPE


The author studied 13 cases of hypertension with the symptomatology of a brain tumor. In 10 of the cases there were typical signs of increased intracranial pressure while in the remaining cases a tumor was suggested by epileptic attacks of the Jacksonian type. The arterial pressures varied between 220 and 330 systolic and 120 to 170 diastolic. In 10 cases left heart strain was found in the electrocardiogram. Heart failure was present only in one case. The death rate of patients with the first type of symptoms was 70 per cent in the first year. The 3 cases with epileptic attacks died within 2 to 5 years. The author concludes that both types represent a special form of the disease, which resembles malignant hypertension in course and prognosis.

PICK


A 36 year old white man was subjected to splanchnicectomy because of a blood pressure which varied between 180/120 and 240/140 and an associated grade 4 retinopathy. Pre-operatively the renal function was excellent, although a slight degree of cylindruria and albuminuria was present; the electrocardiogram was normal; intravenous pyelogram was normal, and chest x-ray films disclosed a normal sized heart. Seven years later he was entirely asymptomatic and his blood pressure was 132/80. In some of the tissue removed at operation there was one artery with a necrotic wall. Around the wall was a subacute periarteritis with many newly formed blood vessels. On the basis of this finding involving a single artery, a diagnosis of periarteritis nodosa was made. Hypertension in this case is considered to be related in some way to the vascular lesion. In contrast, a 42 year old woman with chronic lupus erythematosus involving the face, trunk, and hands who was subjected to the same operation for severe hypertension, died six months postoperatively although the hypertension was lowered to some degree by the splanchnicectomy.

WENDKOS


A case of hypertension secondary to amyloid contracted kidneys is reported. A 21 year old man was admitted to the hospital because of draining sinuses, one in the right knee of six years' duration, and one in the left hip of three years' duration. At this time hepatomegaly and splenomegaly were noted. He was treated with chemotherapy and during the next four years had four hospital admissions. During these admissions, beginning hypertension with eye ground changes and cardiac hypertrophy were noted. He was placed on a low protein--low salt diet and on veratrum viride. He reentered the hospital because of epistaxis and severe cramps in the legs, was found to be very anemic, and unable to eat. Despite intensive therapy, he died soon after admission.

Pathologic examination revealed amyloid deposition in all parts of the kidney, as well as in the arterioles of spleen, liver, gall bladder, stomach, pancreas, and periadrenal fat. The authors point out a correlation between nutrition and hypertension in cases of amyloidosis. They suggest that in young, well-nourished individuals, there is hypertension, whereas in cachectic patients, the blood pressure was low.

NADLER


The authors report the results of a follow-up examination of 418 patients with hypertension (blood pressures above 155 systolic and 100 diastolic) who were reexamined after a period of eight to nine years. The death rate for men with essential hypertension exceeded the normally expected death rate for men in the same age groups by 102 per cent; for the women this figure was 91 per cent. Chronic nephritis increased the death rate in men by 587 per cent and in women by 150 per cent in excess of the normal. The total excess mortality for patients with hypertension of all types was 233 per cent for the men and 201 per cent for the women.

Analysis of the cases of essential hypertension showed that the mortality increased with increase of both systolic and diastolic blood pressure. However, the condition of the fundus of the eye is a better guide for the prognosis of hypertension than the increase in blood pressure. Heart disease, albuminuria and diabetes appeared to reduce the expectation of life, even more for women than for men. Hypertension accompanied by obesity appeared to be
prognostically more favorable than the same hypertension in patients whose weight was normal or low. Hypertension in young subjects carried a relatively shorter life expectancy than high blood pressure in old age. Among the causes of death of the patients with all forms of hypertension, heart disease (40.9 per cent) took the lead; next came carcinoma (16.4 per cent), followed by uremia (14.9 per cent) and apoplexy (8.6 per cent). Apoplexy as a cause of death was almost seven times as common among women (14.2 per cent) as among men (3.1 per cent). For 9.4 per cent of the deaths in this series the cause could not be ascertained.

BERNSTEIN


A new test for vasopressor substances in the blood of hypertensive cases is presented. The test involves the injection of 3 cc. of human blood serum into the ear vein of a rabbit and the subsequent determination of the animal's circulation time by a fluorescein method. It was found that serum from hypertensive patients usually prolonged the circulation time (to more than 7.5 seconds). Serum from persons with normal blood pressure almost always yielded negative tests. It is assumed that the increased circulation time obtained with serum from hypertensives is due to the presence of excessive vasopressor substances. Further studies are indicated to further evaluate the test.

DURANT


The author describes 4 cases of severe hypertension in children which were presumably the result of renal lesions. In 3 of the cases the initial lesion was a pyelonephritis which became chronic and resulted in progressive renal damage with gross scarring. In 3 cases a unilateral nephrectomy was done; 1 patient was cured, a second presumably cured—the time was insufficient for proper evaluation—and a third, while not cured of the hypertension, was relieved of the symptoms of headache and frequent epistaxis. In the 2 successful cases, blood pressures dropped from 270/215 and 260/190, respectively, to within the normal range, and improvement in their general conditions was dramatic.

The author states that the absence of pus or albumin in the urine does not exclude renal disease, and that with a normal blood urea nitrogen level, severe unilateral renal disease can be present. An excretory pyelogram should be done on all children with hypertension. Since the complete absence of one kidney is not extremely rare, a retrograde pyelogram is necessary to differentiate between nonfunctioning kidney and complete absence of one kidney. Success in surgery is only anticipated when one of the kidneys is normal or only slightly damaged.

MARGOLIES


Three main factors are essential in the pathogenesis of hypertension: a nervous, a renal, and a humoral one. Nervous impulses, originating in the pressoreceptors and in subthalamic centers, regulate tonus and reactivity of peripheral vessels. Organic lesions, such as sclerosis in the region of the carotid sinus, cerebral tumor or trauma, encephalitis or carbon monoxide intoxication, can produce persistent hypertension by disturbing the coordination of pressure-regulating nervous impulses. A primary renal pathogenic factor can be demonstrated in man in the presence of unilateral kidney disease when a drop in blood pressure occurs after nephrectomy. The humoral regulation of the blood pressure is dominated by the hypophysis, mainly through its adrenocorticotropic hormone (Addison's and Cushing's disease). Hypertrophy of the adrenal cortex is a common finding in hypertension. Climacteric hypertension can also be explained by an overfunction of the adrenal cortex following cessation of inhibitory effects of the ovaries on the hypophysis. Prolonged stress leads to stimulation of the adrenal cortex, which in turn stimulates the liver to excessive production of hypertensinogen. The use of a diet low in protein and salt, which lowers the blood pressure, is followed by a decrease in excretion of 17-ketosteroids in the urine.

PICK

PATHOLOGIC PHYSIOLOGY


A study of the various forms of pulmonary edema was made in order to produce a rational therapy based on pathogenesis. The methods for estimating the degree of pulmonary edema have been qualitative rather than quantitative. The method in use is to note the color and presence of hemorrhagic areas, to look for fluid, and to determine the consistency of the lung on palpation. These methods, while adequate for distinguishing between a normal lung and one that is grossly edematous, does not serve to distinguish mild edema; nor does it offer a quantitative evaluation of the degree of injury.

A method was devised to determine the quantities which change significantly during pulmonary edema. The quantities measured include lung weight, lung density, insoluble protein nitrogen of the lung,
pulmonary hemoglobin, and soluble (nonhemoglobin) protein nitrogen. These values were determined for the lungs of 10 normal guinea pigs.

MINTZ


Hemorrhagic shock was induced and measured in anesthetized dogs by the methods outlined in the preceding article. Pressures and flow were altered by (a) Dibenamine and (b) extirpation of carotid sinus and/or epinephrine infusions. The dogs treated with large doses of Dibenamine (15 mg. per Kg.) had a more rapid fall in pressure and a greater decrease in cardiac output than did the controls. Peripheral resistance fell promptly, and lower terminal values were obtained. Fifty per cent of the Dibenamine-treated animals survived as compared with 8 per cent of the controls. The dogs treated with small doses of Dibenamine (5 mg. per Kg.) showed a survival rate of 72 per cent against 8 per cent for the controls, but there were no appreciable differences in the responses measured that would have explained the difference in the survival rate. Removal of carotid sinus, or epinephrine or Arterenol infusion induced prolonged episodes of vasocostriction resulting in a rise in pressure and resistance, and a reduction in peripheral flow. Late in the course of hemorrhage, the values in these treated dogs differed but little from those of the controls.

The lethal bleeding volume of all controls varied, depending on the season, from an average of 30 ml. (summer) to 38 ml. (winter). Large doses of Dibenamine reduced the bleeding volume (21.2 cc.) per Kg.; Peripheral flow appeared adequate even at low pressures, so that the animals were able to walk about with pressures of less than 50 mm. Hg. The bleeding volume was slightly larger in the series subjected to epinephrine infusion, or carotid sinus section.

It is assumed that a central vasocostrictor impulse controls peripheral flow through various organs, and may shunt blood to vital organs during hemorrhage. Local accumulation of metabolites during anoxia caused by the reduced flow through an organ convert the peripheral local vasocostriction to local vasodilatation. If these local controls supervene, a general fall in peripheral resistance ensues with circulatory collapse leading to death. Dibenamine prevents local vasocostriction and thereby tends to maintain adequate peripheral flow, even with low pressures. This may be the cause of the increased survival rate in Dibenamine-treated animals.

HECHT


The authors studied the effect of cooling on auricular fibrillation produced by methods other than aconitine. Fibrillation was produced by three methods. One method employed faradization of the atria lasting 30 to 60 seconds. This type of fibrillation rarely persisted long enough for study. Auricular fibrillation was also produced by rapid stimulation with rhythmic electrical shocks. The most effective method for producing prolonged fibrillation was the application of a small strip of filter paper moistened with a concentrated solution of acetyl choline to the area of the sinus node.

Cooling of the sinus node and the atrial part of the A-V node was accomplished by the application of ice cold water in a glass tube or by direct application of ice cubes on these areas. The A-V node was cooled in three ways. One method was by pressure with the thermode against the outer lateral wall of the right atrium, towards the lower wall of the right atrial septum in the area of the A-V node. Another method was to lift the heart from its bed by elevation of the apex, and to cool the A-V node through the coronary sinus vein at its orifice in the right atrium. A third method was to clamp the superior and inferior vena cava and to open the atrium quickly and apply the thermode on the area of the atrial part of the A-V node near the orifice of the coronary sinus.

The results indicated that auricular fibrillation is not stopped by cooling the area of stimulation or by cooling the site of application of acetylcholine. In 24 of 27 experiments, however, the simultaneous cooling of the sinus and A-V nodes terminated the fibrillation. Interruption of the cooling caused the auricular fibrillation to reappear. These experiments tend to support the theory that in some forms of fibrillation more than one center of rapid stimulus formation is active. These experiments argue against the presence of a circus movement.

MINTZ


Segmental necrosis of many of the small coronary arteries and arterioles, as well as extensive hemorrhages and necrosis of the pulmonary artery and aorta, developed in dogs given massive doses of adrenaline. Medial necrosis of the coronary arteries was frequently accompanied by periarteritic cellular inflammatory exudate or by perivascular fibrosis. Necrosis of the aortic adventitial vasa vasorum was prominent. The lesions reproduced the acute ar-
PATHOLOGY


Studies made at necropsy in the past five years have revealed that the incidence of rheumatic heart disease is far higher among patients who died with rheumatoid arthritis than it is in the general population. This observation has been out of line with the experiences of many clinicians who have examined the incidence of heart disease among living patients with rheumatoid arthritis.

One hundred and fourteen patients having rheumatoid arthritis of peripheral joints and 33 having rheumatoid spondylitis were examined in detail to determine the incidence of major and minor cardiac abnormalities. Similar studies were conducted concurrently on 100 nonarthritic persons, most of whom were well and a few of whom were undergoing treatment for injuries. Auscultatory, roentgenographic, sphygmomanometric and electrocardiographic studies of these two groups of subjects disclosed that the incidence of rheumatic heart disease in the arthritic groups, judged on clinical evidence, was not significantly higher than the incidence of this condition among the controls. No explanation for the apparent difference in the incidence of this complication in the living and the dead patients resulted from this study.

BERNSTEIN


The author presents the findings in 3 fatal cases of myxoma of the left atrium, of which only one presented clinical manifestations of myocardial ischemia and dyspnea unrelated to posture. The remaining 2 cases had few symptoms of cardiac dysfunction. He feels that certain electrocardiographic changes may be expected in theory, such as exaggerated P waves and evidence of right ventricular strain, S-T depression and T wave inversion in Leads II and III. These findings may occur without any clear clinical explanation and are difficult to assess. Death may be due to hemorrhage into the tumor in some cases, while obstruction by the tumor may account for the remainder. It is concluded that the diagnosis is still an extremely difficult problem, but, with the aid of angiography, confirmation is possible when tumor is suspected. Early recognition may ultimately lead to its surgical removal.

TANDOWSKY


The authors found 44 proved cases of suppurative amebic pericarditis reported in the literature. Of this group the diagnosis was established during life in 2 patients. The case reported in this article showed 2 liver abscesses; one in the left lobe communicated with the pericardial cavity. The diagnosis of pericarditis was made by electrocardiography. The ameba histolytica was found on pericardiotomy. The authors stress the importance of early diagnosis and therapy before liver abscesses rupture.

NADLER

PHARMACOLOGY


Using both open- chest dogs with levers attached to the right ventricle and chronically operated animals in which strain gage equipment had been sutured to the ventricle and left in situ, the authors found that the intravenous administration of several digitalis glycosides produced significant increases in the force of contraction of the right ventricle; there were however no statistically significant differences among the glycosides in comparable dosage. The degree of increase in the contractile force measured was inversely proportional to the original isometric systolic tension. The time required for maximal increase in force of contraction varied among the glycosides employed. No electrocardiographic changes of significance occurred prior to the development of substantially increased force of contraction.

GROSSMAN


The existence of nausea and vomiting following oral administration of digitalis, long before obvious systemic action occurs, is strongly suggestive of local, as contrasted to central, emetic activity. The degree of local emetic activity of 4 glycosides—scilleroside, lanatoside C, scillaren A and ouabain —was studied in a group of cats given large, single oral doses and observed for retching and/or vomiting. Most potent was lanatoside C; intermediate
were scilleroside and scillaren; least apt to produce emesis was ouabain. In each case, emesis occurred after only a small fraction of the dose had been absorbed. Moreover, local emetic potency was not related to cardiac effects. It was observed too that the length of the interval prior to vomiting tended to vary inversely with the size of the dose.

GROSSMAN


Previously, secondary amine bases of steroid nature among the veratrum alkaloids had been found to antagonize the accelerator effect of epinephrine on the heart rate. This antiaccelerator property of the two glycosides, veratrosine and pseudojervine, and of their respective aglycones, veratramine and jervine, was measured with the use of heart-lung preparations receiving a constant rate of infusion of l-epinephrine. The use of these preparations permits more accurate standardization of effect. Veratramine was found to be fifty times as potent as jervine in its antiaccelerator effect; the glycosides, veratrosine and pseudojervine, had about the same degree of potency as their respective aglycones.

GROSSMAN


A case is reported in which the chronic administration of ergotamine tartrate produced symptoms of vasoconstriction of five months' duration, with complete recovery following withdrawal of the drug and the intravenous injection of 140 mg. of sodium nicotinate. Data on biopsy of muscle, plethysmographic tests and values for skin temperature provided objective evidence of normal anatomic and physiologic vascular response despite the prolonged vasoconstriction. The administration of 10 mg. of Priscoline intravenously was ineffective in overcoming the vasoconstrictive effect of ergotamine. Sodium nicotinate proved to be an efficient vasodilator in the presence of vasoconstriction due to ergotamine. The absence of tissue necrosis and the demonstration of normal vessels at biopsy tended to support previous observations that intimal change is necessary in ergotism for stasis, thrombosis and tissue necrosis.

BERNSTEIN


Using a dose of desoxycorticosterone acetate (DCA) just sufficient to cause a minimal elevation in blood pressure in rats along with a significant increase in heart weight and kidney weight, the authors investigated the inhibitory effect of many steroids on the hypertensive effects of DCA. Of the compounds tested, progesterone, testosterone, estradiol, pregnenolone, acetoxypregnenediol, "saturated 12-keto DCA," and hyaluronidase were all incapable of inhibiting the DCA effects studied. Large doses of lipo-adrenal cortex extract had an inhibitory effect on the cardiovascular-renal effects of DCA. The possibility is discussed that the adrenal gland might liberate some factor opposed to DCA.

Cortell


The dose-action curves of the pressor effect of epinephrine in 5 dogs were determined and an attempt made to fit to these data the curves previously obtained by other investigators. Using the method of least squares, the hyperbolic curve of Rosenblueth was the only one to exhibit good fit over the entire range measured. It is of interest that a hyperbolic curve of the same type \( y = \frac{x}{a + bx} \) has been derived from hypotheses employed to develop the mechanism of chemical mediation of autonomic nervous system activity.

GROSSMAN


The authors review the clinical and pharmacologic aspects of digitalis. The drug reduces heart size in both normal and diseased hearts; the cardiac output consequently varies, depending on the initial size of the heart. The refractory phase is prolonged and A-V conduction is slowed. Myocardial irritability increases.

The erroneous indications for digitalis include murmurs, routine preoperative preparations, angina pectoris, thyrotoxicosis and acute rheumatic fever. It is contraindicated in paroxysmal ventricular tachycardia and in certain cases of Adams-Stokes syndrome, intraventricular block and the Wolff-Parkinson-White syndrome.

Thirty-five cases of digitalis poisoning seen over a seven year period are described. Two of the 35 showed no clinical signs or symptoms suggestive of disease. In 10 cases no rational explanation for the use of digitalis could be found. In 26 cases the signs and symptoms of poisoning were ignored. The most common signs and symptoms were anorexia, nausea, vomiting and cardiac arrhythmias. Among 25 instances of the latter premature ventricular beats
occurred in 20, 11 of which were characterized by bigeminy.

Electrocardiographic effects were sufficiently definite in 25 of 33 cases to be considered reasonably diagnostic. Digitalis preferably should be avoided prior to electrocardiographic study of suspected myocardial disease because digitalis-T-wave changes may persist for several weeks after the drug has been discontinued.

In general the optimum dose is the minimum dose required to produce a desired effect. Ambulatory patients have a wider margin between therapeutic and toxic doses than have severe cases of heart failure. The degree of improvement with digitalis is of some prognostic value.


The authors review the physiology of fibrillatory states, emphasizing the concept that fibrillatory agents act not by increasing irritability or excitability, but rather by depressant effects; the resulting areas of local block permit re-entry of impulses with culmination in fibrillation. This concept explains the paradoxical toxic effect of ventricular fibrillation which may occur with large doses of antifibrillatory drugs. The existence of conduction defects as a precursor of the fibrillatory state is also stressed.

It is shown that the most effective antifibrillatory drugs possess a roughly similar basic chemical structure, and that many of them have local anesthetic action. Among the drugs discussed are the cinchona alkaloids, quinacrine (Atabrine), alpha-fagarine, N-benzyl-N-methylphenethylamines, procaine and diethylenoethanol, potassium, barium and magnesium ions, sympathomimetic drugs, atropine, papaverine, sparteine, digitalis, and antihistaminics.

It is concluded that quinidine remains the drug of choice, though quinacrine offers great promise. The authors strongly urge frequent electrocardiographic observations during quinidine treatment in order to reduce the hazards. They strongly advise quinidine in the following conditions: (1) fresh fibrillation or flutter with normal heart size, normal sounds, and normal blood pressure; (2) ventricular tachycardia; (3) post-thyroideectomy flutter or fibrillation. The authors strongly reject the use of quinidine in the following: (1) complete heart block; (2) intraventricular conduction defects; (3) bacterial endocarditis; (4) overdigitalization.

The use of quinidine in established flutter and fibrillation, ventricular premature beats, supraventricular tachycardia, congestive failure, auricular fibrillation during myocardial infarction, and in cases with greatly enlarged hearts or severe mitral stenosis is discussed at length. The toxicology of quinidine is reviewed, and simple dosage schedules outlined.

Enselberg


The authors screened patients with angina pectoris by means of the Master two-step test. Five cases were found in which the electrocardiographic response remained constant when recorded from day to day. After control studies, the identical procedure was carried out five minutes after the administration of 0.4 mg. of glyceryl trinitrate, and in a similar manner the test was performed on other occasions, 5 to 30 minutes after the ingestion of 1 to 2 ounces of whiskey. Only one test was performed, in any 24 hour period, and identical conditions were maintained. The characteristic changes in the depression of the RS-T segments and flattening or inversion of the T waves failed to appear with exercise after glyceryl trinitrate. In striking contrast, after the administration of alcohol little or no influence on the electrocardiographic response to standard exercise was noted. The authors state that whiskey appeared as effective as glyceryl trinitrate in preventing angina induced by standard exercise tests, although it did not prevent the electrocardiographic changes. They conclude alcohol is not a coronary vasodilator agent, but that it is a rapidly active sedative which increases the threshold of pain while promoting a sense of well-being. They conclude that alcohol must be considered a poor substitute for glyceryl trinitrate and suggest that existent views regarding the value of alcohol in treatment of angina pectoris should be drastically amended.


This study indicates that Mecholyl is promptly and effectively absorbed from the nasal mucous membrane, and that the cardiovascular effects of a therapeutic subcutaneous dose may be reproduced by the application of a larger dose (two and one half to three times) intranasally. Reactions were moderately intense when they occurred, but none could be classified as severe or alarming, probably because the intensity of the reaction could be regulated by the removal of the applicator.

DURANT


Tablets of Mercuhydrin, 60 mg., in combination with ascorbic acid, 100 mg., were equally as effective as tablets containing 120 mg. of Mercuhydrin alone; there were significantly fewer side reactions when the combination was used. The recommended op-
timal daily therapeutic dose is 1 to 2 tablets. The tablets were frequently satisfactory in controlling mild or moderate congestive failure after maximum compensation had been obtained by injectable Mercuhydrin.

DURANT

PHYSICAL SIGNS


According to the authors, triple rhythms due to an additional systolic sound should be divided into two types. (1) Cases having a sound or snap in early systole. The sound may prolong the first heart sound or be superimposed on its second phase; it is heard most frequently over the pulmonic area but may be heard over the aortic area. The rhythm is due to increased loudness of the vascular component of the first sound and occurs whenever high pressure and/or distention of the vessel occurs. However, a similar phenomenon may be heard at the apex in cases of adhesive pericarditis. (2) Cases having a sound or snap in mid or late systole, sometimes followed by a systolic murmur. The rhythm is caused by tension of a pleuropericardial adhesion and is heard best at the apex or over the xyphoid process.

The authors refuse to apply to these rhythms the term “systolic gallop” and reserve the name “gallop” for triple rhythms with a diastolic extra sound. The present trend, however, is to dispense with the name “gallop” and refer to all rhythms with three sounds as “triple rhythms” with qualification as to phase and location.

LUISSADA

PHYSIOLOGY


Using the dog’s gastrocnemius in situ, with its normal circulation intact, the author studied the relation between blood pH and blood flow during muscular activity. In order to produce contraction of the muscle, the peripheral end of the cut sciatic nerve was stimulated electrically to elicit either a single tetanic contraction or a series of rhythmic contractions. Changes in venous blood flow were measured with the hot-wire anemometer.

On the basis of his findings, the author concluded that the increased local blood flow, which starts simultaneously with the first contraction of the muscle, is not the outcome of changes in blood pH and that the acid metabolites do not play a role in this regard. Furthermore, lactic acid does not exert any specific influence, for the increase in blood flow preceded the rise in lactic acid concentration of venous blood; the peak of the latter response occurred some time after cessation of stimulation, at a time when no further increase in circulation was observed. The local vasodilatation may be due to the effect of vasodilator metabolites, among them being acetylcholine, adenosine triphosphate, and histamine.

ABRAMSON


The authors studied the effect of hot moist packs on the peripheral circulation in man, using the venous occlusion plethysmograph. Packing for 15, 30, and 45 minutes produced significant rises in temperature of the skin and increases in blood flow. However, the conclusion could not be drawn that such applications, employed only once daily, would produce satisfactory therapeutic results. The packs had their greatest effect if placed on the subject when they were as hot as could be tolerated. Whether the changes in circulation produced by packs are as great as those obtained with other methods could not be determined.

ABRAMSON


The intrarenal tissue pressure was determined by measuring the pressure required to just prevent fluid from flowing out of a small cannula set in the renal parenchyma. It was found to average 26 mm. Hg in 9 anesthetized dogs, the range being 13 to 40 mm. This is about ten times greater than the tissue pressures observed in subeutaneous, intradermal, or intramuscular tissues.

AUTHORS


An acceleration of the heart rate produced by deep inspiration is followed by slowing which is independent of expiration; the heart rate returns to normal values even if breath is held in deep inspiration. The average heart rate is the same if the breath is held in deep inspiration or expiration. These observations seem to disprove the generally held opinion that Hering’s lung heart reflex is partly responsible for the acceleration of the human heart during inspiration.

PICK

RHEUMATIC FEVER

The authors report 11 rheumatic fever patients who were vaccinated for smallpox. Following the vaccination, there was definite reactivation of rheumatic fever in 4 cases, probable reactivation in 2 and no reactivation in 5. While they recognize that the series is a small one, the authors believe that vaccination may act in the same manner as an upper respiratory infection in the reactivation of rheumatic fever. The symptoms, however, start much more rapidly following vaccination, occurring on the first and second day after take. Whether the reactivation of rheumatic fever is an allergic manifestation or whether it is the result of secondary infection at the vaccination site is not known and warrants further investigation. It is suggested that rheumatic fever patients should only be vaccinated when they are directly exposed to smallpox.

Margolies


The authors describe and compare the morphology and pathogenesis of representative human cardiac lesions from several fatal cases of active rheumatic fever and rabbit cardiac lesions induced in a small proportion of rabbits that had undergone multiple successive skin infections with Group A streptococci of several serologic types. The following lesions were noted in the rabbit hearts: myocardial interstitial submiliary granulomata similar to Aschoff bodies, a variety of lesions of the cardiac blood vessels, granulomatous endocarditis and valvulitis, and occasionally localized epicarditis. Comparison of these lesions with those of patients who died of rheumatic fever indicated that the experimentally induced lesions are similar to those found in human rheumatic carditis.

In comparing human lesions with those induced in rabbits by parenteral injections of foreign serum the authors noted that serum-induced carditis is generally characterized by a peri- or panarteritis nodosa, a lesion which is not a common feature in fatal rheumatic fever, and which was absent in the hearts of the rabbits undergoing repeated focal Group A streptococcal infections. The occurrence in the latter group of experimental animals of myocardial interstitial submiliary granulomata often unrelated to arteries, and very similar to Aschoff bodies, has not been duplicated to any noteworthy degree in the hearts of animals with serum disease.

Schwartz


Activity of rheumatic infection in old age is not uncommon. As in younger patients, congestive failure with poor response to therapy should excite suspicion of rheumatic activity. In the aged, the characteristic apical diastolic murmur of mitral stenosis is absent in a large percentage of proved cases. In some cases of mitral stenosis, only a systolic murmur is audible. Such apical systolic murmurs are often taken to be due to arteriosclerotic changes or to dilatation of the aorta. The classical opening snap and the rumbling low-pitched mid-diastolic murmur are not found in every case. The murmurs are modified by underlying arteriosclerotic changes, by slowing of the blood stream, and by a number of other cardiac and extracardiac factors common to old age. The typical murmurs of aortic insufficiency and stenosis are also diagnosed, sometimes erroneously in this age group, as being due to arteriosclerotic or syphilitic etiology, when they are really of rheumatic origin. Even at the time of autopsy, the presence of degenerative and arteriosclerotic lesions alongside the rheumatic lesions creates diagnostic difficulties. Hypertension may be associated with rheumatic heart disease in the aged and death may result from causes related to the hypertension rather than to the rheumatic heart lesion.

Wendkos

ROENTGENOLOGY


The authors report their experience with aortography in 100 cases. Aside from aid in the diagnosis of abdominal tumors, this technic has been of value in three conditions: (1) in impotent men with no erection; (2) in patients with extreme fatigue in walking but without real intermittent claudication; (3) in patients with arteritis. In the first group, in those patients in whom tortuositities and dilatations of the iliac vascular system were demonstrated, impotence was abolished by sympathectomy. In the second group aortography revealed either irregular dilatation of the iliac arteries or stenosing calcification. Lumbar ganglioneectomy did not give satisfactory results. In the third group aortography demonstrated the frequency of segmentary or extensive obliteration of the iliac arteries and the aorta. It is stated that bilateral lumbar ganglioneectomy gave excellent results. Twenty-two photographs of x-ray films are included.

Wessler


The author describes a method for injecting the
deep veins of the lower extremities with radiopaque dye (20 cc. of 35 per cent Diodrast), and the roentgenographic technic, stressing 45 degree inward rotation to best visualize most of the deep vessels of the leg. A high percentage of visualization was accomplished for peroneal, posterior tibial, popliteal, and femoral veins. The anterior tibial and profunda femoris veins were infrequently visualized.

**Schwedel**


The authors describe the technical details in the construction of apparatus used for angiocardiography wherein twelve and one-half exposures can be made per second. Exposure time is diminished to from 0.02 to 0.04 second with a generator which can deliver 800 milliamperes at 100 kilovolts. Films can be taken in two projections simultaneously (posteroanterior and lateral views). The films (18 by 24 cm.) are enclosed in specially built fiber cassettes, utilizing the advantages offered by intensifying screens. The authors discuss the advantages of such an apparatus, especially useful with infants with rapid heart rates, and they present illustrative examples.

**Schwedel**


This is a historical review of the methods used for visualization of the thoracic and abdominal aorta and its main branches by injecting a radiopaque dye (1) into the brachial, axillary, carotid or femoral arteries (retrograde or counter-current aortography); (2) directly into the thoracic (second left intercostal space anteriorly) aorta or abdominal aorta (direct aortography); or (3) by passage of a catheter into the aortic lumen (aortic catheterization). The authors claim priority in retrograde aortography.

**Schwedel**


The authors describe the features, both in the conventional film and after angiocardiography which indicate an abnormal blood supply to the lungs by enlarged bronchial and collateral arteries. The diagnosis in 5 of the 7 cases were confirmed by postmortem study.

Absence of normal curved vascular shadows arising in the hila suggests that the bronchial arteries supply the lungs. On the left, the shadows appear distinct from the heart, rounded and nodular, and may be directed outward and upwards. On the right, a mottled mass is seen higher than the normal position of the pulmonary artery because the bronchial arteries frequently descend from the under surface of the aortic arch. With angiocardiography, the bronchial arteries are seen filling later than the aorta. They are most easily recognized in the lateral and left oblique positions.

**Soloff**


The authors have made a preliminary survey to demonstrate the value of the miniature film in the detection of heart disease. During an eight month period, all 4 by 5 inch films taken at a unit for the control of tuberculosis were examined for abnormal cardiovascular shadows. Patients whose films were suspicious were studied further with a 14 by 17 inch film, physical examination, fluoroscopy, and electrocardiograms. From a total of 7093 films, 158 were selected as showing heart disease. The high percentage of error of those recalled was considered to be due to the greater distortion at the distance of 48 inches from the x-ray tube focus as against 60 inches. However, the findings of this study indicate that the mass chest x-ray survey is an excellent method of case finding in heart disease as well as in tuberculosis.

**Hellerstein**


The requirements for satisfactory angiocardiography are: rapid exposures at a speed of four per second, particularly in children with congenital heart disease; inclusion of the lung fields as well as the heart on the films; simultaneous visualization in the posteroanterior as well as oblique views with one intravenous injection of the radiopaque substance. The requirements for satisfactory angiocardiography may be met by the method of direct radiography (use of films), or by the indirect method (photography of the fluorescent image). The advantages and disadvantages of these two methods are discussed.

**Schwedel**


An analysis was made of the roentgenographic and hemodynamic changes in 12 cases of intertrial septal defect. Four had right ventricular and right atrial enlargement, 4 had right ventricular enlargement without concomitant right atrial enlargement,
7 had left ventricular enlargement, and none had left atrial enlargement. Three had no chamber enlargement at all; however, 2 of these had prominent pulmonary arterial segments. Three of 5 illustrated cases had diastolic as well as systolic murmurs in the pulmonic area.

A small left to right shunt produced no recognizable roentgenographic enlargement of the heart or of the pulmonary artery. A large left to right shunt usually resulted in marked enlargement, but an exception was noted. Small interatrial shunts associated with marked pulmonary arterial hypertension were roentgenographically indistinguishable from large interatrial shunts without marked pulmonary arterial hypertension. Aneurysmal dilatation of the pulmonary artery, usually associated with Lutembacher's syndrome, was found in one case without a lesion of the mitral valve at necropsy. Apparently the roentgenographic criteria usually ascribed to interatrial septal defect are less characteristic of this congenital heart defect by itself, than when this defect is combined with mitral stenosis (Lutembacher syndrome).

SCHWEDEL

SURGERY IN HEART AND VASCULAR SYSTEM


The author has developed a technic based on digital plethysmography which can be utilized to measure the collateral arterial circulation. Since collateral vessels have sympathetic tone and the dilatation of collateral channels secondary to ablation of sympathetic tone can be demonstrated plethysmographically, the technic can be used to assess the expected value of sympathectomy in patients with peripheral vascular disease. According to the author, the technic may be valuable where more usual methods are not satisfactory. Illustrative cases are presented.

WESSLER


The authors report a case of a pericardial coelomic cyst with successful surgical excision. The case was found during a routine chest survey when a circumscribed mass density was seen in the left lower lung field anterior to the cardiac shadow. The patient was entirely asymptomatic and was followed for two years prior to the surgery. Preoperative diagnosis was either pericardial coelomic cyst or dermoid tumor. Diaphragmatic hernia was ruled out by radiologic study. At operation a thin walled translucent cyst, attached by thick fibrous tissue to the apex of the pericardium was found. The pedicle was ligated and the cyst removed without difficulty, there being no adhesions to surrounding structures. Pathologically the cyst was thin walled, unilocular and contained thin yellow fluid. Microscopically the cyst consisted of flattened mesothelium resting on dense connective tissue. Embryologically these cysts arise from failure of the pericardial mesenchymal lacunae to unite with the pericardial coelom.

KLOSK


The onset of varicose veins appears to be related to a number of different factors, namely, pregnancy, use of constricting garments, occupations requiring standing for long periods of time, posture, and obesity. The treatment of this condition consists of the use of sclerosing solutions and surgical intervention. The operation of choice is resection of a 3-inch segment of saphenous vein and its proximal ligation as well as of all the tributaries. It is also necessary to produce a wide resection of each incompetent point, with ligation of every perforating vein coming through the fascia to the saphenous vein from the femoral vein. A resection of the lesser saphenous vein at the popliteal insertion is done at the same time even if the vessel is not dilated. Stripping by means of a Babcock type intraluminal stripper is likewise advocated. If all these steps are carried out, a satisfactory result can be expected in 75 to 85 per cent of cases.

Thrombosis of the deep veins of the lower extremity is frequently diagnosed early in its inception by the presence of dilated pretibial veins. Treatment of this condition consists of a combination of sympathetic nerve blocks and anticoagulant therapy when the clot is in the small vessels, and vein ligation if it has propagated into the femoral vein, if a proved embolus exists, or if there is some contraindication to anticoagulant therapy. Treatment of the ulcers, which arise in 25 to 35 per cent of cases following venous thrombosis, consists of procedures to make the lesion surgically clean and then ligation and division of the superficial femoral vein provided it is involved and there is an adequate profunda; the latter point can only be determined at the time of operation. Since the greater and lesser saphenous systems are generally likewise incompetent, they should also be resected. If much skin has been lost, grafting is required.

ABRAMSON


The authors have found sympathetic ganglionectomy to be a valuable method of treating auricular
paroxysmal tachycardia which could not be controlled by medication (6 cases). One case of paroxysmal auricular fibrillation was also stopped by this operation. Incapacitating attacks of tachycardia ceased in all 7 cases. One death occurred as a result of a cerebral embolism arising from a thrombus in the left ventricle. Recovery in the other 6 patients was uneventful. Chemical destruction of the ganglia by alcohol gave a good result in one case, but attacks recurved when the cardiac accelerator fibers regenerated.

Cardiac accelerator nerves run to the heart bilaterally, and there are important connections below the stellate ganglion. Regeneration is likely to take place if only a short length of the chain is removed. The operation must be done bilaterally, and the chains should be removed from the stellate down through the fourth or fifth thoracic ganglia.

LECKS

THROMBOEMBOLIC PHENOMENA


On the basis of a study of a relatively small series of patients, the authors came to the conclusion that thrombosis of the superficial saphenous system should be treated by ligation rather than by the use of elastic bandages. In this manner morbidity is markedly shortened and the possibility of extension into the deep circulation is completely prevented. Since varicosities frequently predispose to superficial thrombophlebitis, they should be actively treated and eliminated. According to the authors, ligation of the superficial femoral vein in the treatment of deep thrombophlebitis gives maximum protection against embolism and is not followed by disabling sequelae. On the other hand, ligation of the inferior vena cava is a major procedure which frequently results in serious postoperative sequelae. Anticoagulant therapy is effective in the treatment of deep thrombophlebitis but it does not give maximum protection against embolism.

ABRAMSON


The author reports a case of pulmonary embolism following an injection of penicillin in oil and wax (Romansky formula). The patient received the material in the buttock while standing, and within several minutes he noted a peculiar salty taste in the mouth and a choking pain in the neck. A severe cough started immediately and persisted. X-ray films of the chest taken several days later showed signs of pulmonary embolism in the lower halves of both lung fields. These subsequently cleared up and the clinical findings also disappeared. The clinical diagnosis was pulmonary oil embolism.

ABRAMSON


An analysis was made of the effects of the different therapies utilized to prevent thromboembolic complications in surgical patients. Despite the use of early ambulation, proximal vein ligation and anticoagulants, there was no reduction in the incidence of fatal pulmonary embolism in elderly patients who were confined to bed because of a severe operation and illness. Early ambulation may have been helpful in those patients who underwent major operations and were able to undertake active postoperative walking early in convalescence. In the great majority of cases with fatal pulmonary embolism, no clinical signs of thrombosis were apparent prior to embolism. It is possible that the incidence of fatal pulmonary embolism may be reduced by effective mass prophylactic measures or by the development of a laboratory test which demonstrates incipient thrombosis.

ABRAMSON

VASCULAR DISEASE


The authors present a standardized two-step test of exercise tolerance in intermittent claudication. The test is similar to that used in many clinics in the study of angina pectoris. Only patients with unequivocal intermittent claudication due to arteriosclerosis were studied. In 10 patients the first appearance of calf pain was found to be a sharp, constant, easily reproducible, and reliable end point. Other observations included the following: daily variations in exercise tolerance were very slight; pain subsidence time was comparatively constant and directly proportional to the amount of exercise; five minute rest periods were adequate for full recovery of calf muscle. This method of measurement, according to the authors, is useful in acute and chronic experiments on intermittent claudication.

WESSLER


In 4 patients muscle adenylc acid administered intramuscularly was found by the authors to be associated with relief of pruritis, dermatitis, ulcer-
tion, and edema secondary to severe venous pathology. In 4 additional cases the medication appeared to exert a favorable effect on the course of thrombophilebitis. No toxic reactions were noted. The drug is being tried in other vascular lesions. The mode of action of the drug is not known.

WESSLER


Occasionally spontaneous cure of aneurysms and arteriovenous fistulas occurs. Of the authors’ series of 122 arterial aneurysms, this type of response was noted in ten. In 8 of these the result was entirely satisfactory, while in 2 the clotted sac persisted and required surgical treatment because of associated nerve lesions. Of the 245 cases of arteriovenous fistulas, satisfactory spontaneous cures occurred in five. The obliteration of the lesions appeared generally to result from thrombosis.

ABRAMSON


Management of the critically ill patient with moist gangrene of an extremity has always been a difficult problem. The author studied this subject in 27 patients by utilizing refrigeration and a tourniquet applied to the limb below the site of proposed amputation. All of the patients had previously shown some evidence of toxic absorption from the gangrenous site; most of them had a considerable elevation of temperature. Every patient improved markedly with this procedure. Subsequently formal amputation, using spinal or general anesthesia, was undertaken above the cooled and ligated area with little risk.

ABRAMSON


Although rutin has been used clinically since 1942, its effectiveness remains open to question. The present study included 220 diabetic patients, of whom 50 had diabetic retinitis, 68 no retinitis but increased capillary fragility, and 72 normal retinas and normal fragility tests. Long duration of diabetes and hypertension are factors which predispose to diabetic retinitis. Poor control of diabetes may lead to early retinitis, and good control seems to be the best prophylaxis. Rutin, even in daily doses of over 300 mg. for 18 to 30 months, seems to have little effect in improving either capillary fragility or diabetic retinopathy. Retinitis proliferans of long duration may progress during rutin therapy. If treatment is begun early rutin may be of some value. The place of rutin in the treatment of diabetic retinitis is still not conclusively established and a proper evaluation must await further study.

DURANT


The papers of Katsura, Okubo, Okano and Kawakami, and Hiramatsu in Japanese are referred to. These are concerned with the production of experimental non-thrombocytopenic vascular purpura by anti-blood vessel endothelium serum. The Japanese investigators used as antigenic material endothelium scraped from the lining of the aortas of guinea pigs, and produced the antiserum by injecting it intravenously in rabbits. The Japanese authors believed that the purpura induced by injections of the anti-endothelium serum was a result of diapedesis of blood cells and enhanced capillary permeability and filtration due to specific lesions of the vascular endothelium.

The authors felt that this method of producing experimental purpura would provide an approach useful in elucidating various drugs or treatments which may have specific effects in hemorrhagic diatheses and give their preliminary observations which they feel confirm and extend those reviewed.

Antisera were produced against guinea pig and mouse blood platelets, guinea pig and mouse spleen, mouse bone marrow, marrow plus spleen ("anti-reticulo cytotoxic" serum), aqueous fraction of guinea pig adipose tissue rich in nonmuscular blood vessels, guinea pig smooth muscle, whole guinea pig blood vessel antiserum absorbed with guinea pig smooth muscle, and dog vascular endothelium. In all instances but the last, there were positive agglutinins and/or compliment fixation titers, which were slightly enhanced anamnestically by whole adrenal cortical extract, but not by "lipoadrenal" extract. In no case was a non-thrombocytopenic vascular purpura produced in vivo except by the anti-vascular endothelium serum.

BEIZER


In the presence of ischemia of tissue due to sudden or slow blocking of the main arterial channels, all therapeutic measures should be aimed at keeping the arterial main and terminal branches open so that as much blood as possible reaches the arterioles. Furthermore, the latter should also be kept widely dilated to increase the amount of blood passing through the capillaries.
Reflex vasodilatation obtained by the application of heat to distant parts of the body, particularly the hands, is quite effective in increasing blood flow to the feet. Pentamethonium iodide and hexamethonium iodide produce a rapid and prolonged increase in blood flow through the subcutaneous vessels of the lower extremities, but no significant increase in the upper limbs. Butylsympathol elicits variable changes in blood flow through subcutaneous tissues and an increase in muscle blood flow in half the cases. Sympathectomy is also of value in augmenting local blood flow; the only contraindication to the operation is the existence of organic disease in the arterial tree of the threatened part, which deprives the vessels of their capacity to dilate.

ABRAMSON


The authors studied the therapeutic effects of rapid thawing, anticoagulants, tetraethylammonium chloride and sympathectomy on experimental frostbite in two series of mice, rats, rabbits and dogs. Cold injury was produced by immersing the part to be frozen in ether kept cooled to the desired temperature with solid carbon dioxide. Immediate rapid thawing of the frozen part was followed by excellent results as far as the prevention of loss of tissue was concerned. Tetraethylammonium chloride was effective in treating the frozen tails and feet of the rat but not the frozen ears of rabbits. Sympathectomy, performed either before or immediately after freezing, was not helpful in preventing gangrene from occurring in the frozen ear of the rabbit. It did appear to help in the feet of dogs. Immediate heparinization gave suggestive evidence of some efficacy in limiting the damage from frostbite of the tail and foot. When this therapy was deferred until three hours after freezing, the results were no better than those in the untreated animals.

It was concluded that rapid thawing of the frozen part at a temperature just above body temperature might be of value in the treatment of frostbite in man. Sympathetic blocks, autonomic blocking agents, sympathectomy and heparin are also considered to be worthy of trial.

ABRAMSON


The studies reported were carried out to (1) compare various plethysmographic technics for recording the postarterial occlusion changes in blood flow; (2) determine whether or not a five minute period of arterial occlusion consistently produced vasodilatation among individuals with functional vascular disease; and (3) describe the characteristics of serial blood flow determinations following five minutes of arterial occlusion among normal individuals and patients with varying degrees of arterial insufficiency. The use of a toe cup with collecting cuff at the ankle proved highly satisfactory. The boot technie was satisfactory in studying the rate of flow to the foot when the major arteries were stenosed, but was not sufficiently sensitive to demonstrate arterial insufficiency when only small arteries to a portion of the foot were involved.

A five minute period of arterial occlusion did not consistently differentiate organic arterial disease from vasospastic states. A maximum rate of blood flow following occlusion falling into the normal range did give evidence, however, of a vasospastic element which suggested that good therapeutic results would follow medical or surgical treatment.

Time flow curves were plotted and analyzed. Normal individuals showed a prompt rise in rate of flow following release of occlusion with all methods of recording. Arterial oblitative disease showed a long prefastigium and low fastigium. A period of anemia was demonstrated in a significant proportion of patients with severe arterial oblitative disease, and also occurred in subjects with vasoneurosis. Vasospastic subjects had a prolonged prefastigium and a low fastigium. The duration of the prefastigium and the height of the fastigium were governed to a great extent by the degree of sympathetic tone in the normal subjects and by the caliber of the partially obliterated major vessels in those with arterial occlusion. In patients with vasoneurosis, sympathetic procedures often shortened or caused the disappearance of the anemoeic interval.

DURANT


Vascular occlusion rarely occurs in infancy. A premature male infant was admitted to hospital at the age of 18 days because of cyanosis lasting 6 days. On the third hospital day blisters and gangrene developed at the end of the first and second toes of the right foot. The toes underwent spontaneous amputation. The dorsalis pedis and the posterior tibial vessels pulsed normally; blood cultures, x-ray examination of the heart, platelet count, prothrombin times, and clotting times were normal. The patient was discharged, otherwise well, one month later. The etiology of this occlusion was not discovered.

WAIFE

OTHER SUBJECTS


The author reviews the clinical and pathologic features of lupus erythematosus. The acute form
differs from the subacute form chiefly in degree and is based on laboratory findings such as leukopenia, increased sedimentation rate, albuminuria, reversal of albumin-globulin ratio and thrombocytopenia. Among 154 cases of disseminated lupus erythematosus in the literature prior to 1938, 30 were classified as "acute." On the whole patients composing this group were somewhat younger, showed mucosal lesions more frequently, suffered from arthralgia more often, and were more likely to be anemic than those with the chronic type. Fever was present in 97 per cent of acute cases. Leukopenia was present in 71 per cent to 22 per cent of chronic cases. All cases prior to 1938 terminated fatally. Among 32 acute cases reported since 1938, 91 per cent were women, 91 per cent had arthralgia, all showed renal disease and albuminuria, and 84 per cent thus far have died. A rapid sedimentation rate and an albumin-globulin ratio of less than 1.5:1 was characteristic of this group.

WAIFE


McWilliam, Flack, and others have shown that the rhythmicity of the sino-atrial region of various animals can be altered by thermal changes in the excised and perfused hearts and in the exposed heart in situ. The authors devised a special thermode which they placed in the region of the S-A node by venous (jugular, brachial) catheterization of the intact experimental animal or man. The thermode consists of an upper or chrome plated U tube attached to the cardiac end of a double lumen catheter. Thermode temperature was regulated by perfusing water of various temperatures (4 to 60°C) through this closed system. The exact position of the thermode was confirmed by careful necropsy examination.

The most pronounced effects occurred when the thermode was located at the right border of the junction of the superior vena cava and right atrium, the location of the S-A node. There was a latent period of 2 to 25 seconds before the changes occurred. This was due to the time it takes to change the temperature of the thermode and adjacent areas. Perfusion of the intracardiac thermode with cold water (4 to 25°C) caused the sinus rate to decrease from the control range of 120 to 150 to a range of 80 to 90 beats per minute. When the region of the S-A node was cooled excessively, the pacemaker shifted to the A-V node, with a rate varying from 35 to 66 beats per minute.

Warm perfusion (45 to 55°C) increased the sinus rate to a maximum of 200 to 232 per minute. The acceleration produced by heating was relatively greater and persisted longer than the slowing produced by cooling. The Q-T interval (electrical systole) was shortened by hot and lengthened by cold perfusion of the thermode. There were no changes in the P-R interval or in the duration or amplitude of the QRS complex. When perfusion was rapid, there were occasional T-wave changes. The possibility of thermal injury was excluded by the return of the T wave to the control form, the absence of
electrocardiographic injury effects on the QRS and ST-T segments, and the absence of gross pathologic lesions at necropsy.

MINTZ


Of 20 cases of acute pericarditis studied by the author, 15 were diagnosed in the ten year period from 1936 to 1946. The protocols of 8 cases are summarized to illustrate characteristic features of this clinical entity, particularly its cryptic and nonspecific etiology and its unusual onset. The electrocardiographic changes and differential diagnosis of acute pericarditis are discussed and the importance of serial electrocardiograms as a diagnostic aid is emphasized.

WENDKOS


The gamma globulin of acute disseminated lupus erythematosus contains the factor which is responsible for inducing rosettes of leukocytes and formation of the lupus erythematosus cell in mixtures of normal bone marrow preparations and lupus erythematosus plasma. The lupus erythematosus factor disappears from the blood during remissions and reappears during relapses in patients with acute disseminated lupus erythematosus.

DURANT


Numerous attempts have been made to improve the blood supply of ischemic tissues by reversing the blood flow. In order to reverse the blood flow through the cardiac veins the termination of the coronary sinus must be completely obstructed. In normal dogs this maneuver is detrimental to the heart. Variable effects are produced by acute complete coronary sinus obstruction. Left ventricular congestion with cyanosis, echymosis, fibrosis and necrosis were usually produced. Acute reversal of flow, by means of anastomosis of either right or left common carotid artery to the obstructed coronary sinus, failed in the author's experiments. The dogs either died within four days from left ventricular hemorrhage or else venous blood was found in the cardiac veins and a thrombus was found occluding the stoma. In experiments in which coronary arteries were ligated, after anastomosis of carotid artery and coronary sinus, death resulted from ventricular fibrillation or an infarction. Inability to effect gradual occlusion of the sinus termination made it impossible to produce gradual reversal of flow.

It is concluded, after 708 operations on 430 dogs, that arterial reversal of blood flow in the cardiac veins can rarely or never be accomplished in the normal dog heart.

WAIFE


The author observed 12 cases of hyperthyroidism with a heart rate of below 100 per minute, 2 of them with a transient bradycardia of 51 and 48. There was no correlation between the degree of elevation of the basal metabolic rate and the pulse rate. The author feels that changes of heart rate in hyperthyroidism cannot be explained by the increase in metabolism, but rather are due to a nervous factor. Usually tachycardia is due to stimulation of the sympathetic nervous system. In the cases referred to, an increase of vagal tone on a constitutional basis was probably responsible for the bradycardia.

PICK


Industrial physicians must know the mental and physical requirements of all jobs in the industry. This knowledge is essential in the proper placement of the cardiac. Generally patients with myocardial disease do not do well under such sudden stresses or strains as heavy lifting and stair climbing, or work in hot environments. They often can tolerate work which involves walking or bending and lifting if the objects are not on the floor.

Coronary artery disease is the most treacherous according to the author. In his experience very few cases occur among unskilled or semi-skilled laborers. Patients with coronary artery disease frequently have no restful hobby. They play as hard as they work. Such individuals, usually in executive positions, should be examined every six months. The industrial physician should familiarize himself with their temperaments, their job requirements, their habits of resting, eating and drinking. Moderation in all things should be encouraged. Many cardiacs can be rehabilitated and can live their normal expectancy while doing useful assignments.

WAIFE


As part of the reaction to stressful life situations the cardiovascular apparatus may react with two types of responses; a hyperdynamic and a hypodynamic response. These responses include altera-
tions in the rate, rhythm, force and cardiac output, electrocardiographic changes, and modifications of peripheral circulatory resistance.

Recently "iatrogenic heart disease" has been recognized. This is often due to a physician's statement that an (unimportant) cardiac abnormality was present, and to the presence of a history of heart disease or death among close friends or relatives of the patient. Finally there may be an additional emotional disturbance precipitating this form of heart symptom.

Dyspnea may be a psychosomatic symptom. During stress the diaphragm is shortened and contracted. This may produce a sensation of tightness. Ventilation is increased to overcome this muscular resistance. Not only can an intense emotional situation produce angina pectoris but man can also react to the threats and symbols of assault in his past. Great care must be exercised not to separate the child with rheumatic or congenital heart disease suddenly from his family. Severe anxiety in children affects physiologic function. Unresolved anxiety may lead to terror dreams and restless sleep. All forms of arrhythmias often occur in certain individuals following emotional upsets.

Waife

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All who desire to present papers at the Twenty-Fourth Scientific Sessions in Atlantic City, June 8 and 9, 1950, should forward to Dr. Andrus, 24 East Eager St., Baltimore 2, Md., an abstract (in triplicate) of the proposed presentation of not more than 300 words. The deadline for the receipt of abstracts is February 10, 1951.

MEMBERSHIP

Voting membership is open to any person interested in diseases of the heart and circulation, subject to the regulations of the affiliated Heart Association in the applicant's area of residence or practice. If there is no affiliated Heart Association in the applicant's area, he may apply for direct voting membership in the American Heart Association. Dues for this membership are $2.00 per year. Such membership extends from January 1 through December 31.

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ABSTRACTS

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