ABSTRACTS

BACTERIAL ENDOCARDITIS

The author observed 20 atypical cases of subacute bacterial endocarditis. The unusual features were repeatedly sterile blood cultures, normal or only subfebrile temperature, a lack of microembolism and, in more than half of the cases, signs of a diffuse glomerulonephritis. In 12 cases the diagnosis of subacute bacterial endocarditis was confirmed at autopsy; however, cultures from the valves remained sterile. Because the clinical impression was rather that of a focal infection than that of endocarditis lenta, the author suggests the name type F for this group, which he feels will be observed whenever a large number of cases of subacute bacterial endocarditis are studied.

Pick

BLOOD COAGULATION

One-half of patients with chronic myelogenous or lymphatic leukemia showed a prolongation of the heparin clotting time and a decreased clot retraction rate and a slight thrombocytopenia. The severity of these defects was closely related to the degree of hemorrhagic symptoms. Leukemic patients without this clotting defect and with normal values for the coagulation tests showed no evidence of bleeding.

Of the untreated patients with polycythemia vera and elevated hematocrits, 33 per cent showed increased clot retraction rates and platelet counts elevated above 400,000. A similar percentage of these patients had histories of either thrombosis or hemorrhage. These studies indicate that the elevation in the platelet count is the most important single factor in the occurrence of both hemorrhage and thrombosis in polycythemia. Therapy should be directed toward the rapid reduction of an increased number of platelets.

The heparin clotting time appears to be the most valuable single test or index of coagulation. It is readily adaptable to both routine clinical and experimental use and it enables the detection of either abnormally increased or decreased clotting ability.

Mintz

CONGENITAL ANOMALIES

The authors present clinical and pathological findings in a case of tetralogy of Fallot associated with patent foramen ovale. Of unusual interest was the finding of left axis deviation and hypertrophy of the left ventricle. It was concluded that the presence of the associated patency of the foramen ovale resulted in a shunt from the right to the left side of the heart in this case. The hemodynamics probably were very similar to those of tricuspid atresia or stenosis. The pressure in the right auricle must have been higher than that in the left auricle and part of the blood probably flowed from the right into the left auricle, while the remainder flowed into the right ventricle. The additional blood flowing into the left auricle and thence into the left ventricle probably resulted in a


The discovery of the anticoagulant dicumarol led to the search for a 4-hydroxycoumarin with about the same hypoprothrombinemia-inducing capacity as dicumarol, but which also produced less toxic effects on small blood vessels. 4-hydroxycoumarin anticoagulant No. 63 was studied and was found to have an optimal effect in twenty-four to forty-eight hours; this is somewhat shorter than the period of optimal effect of a single dose of dicumarol. This drug still needs frequent prothrombin determinations as does dicumarol. From the authors’ experience with dogs, 4-hydroxycoumarin anticoagulant No. 63 has a greater degree of anticoagulant action and a duration longer than that of dicumarol without the production of hemorrhagic manifestations. The potency of 4-hydroxycoumarin anticoagulant No. 63 is two to three times as great as that of dicumarol. The mechanism of action of this new drug has not been established, nor has it been precisely determined for dicumarol. Desired distinct advantages over dicumarol have not as yet been proven.

Mintz

139 Circulation, Volume II, July, 1950
gradual hypertrophy and dilatation of both of these chambers. The right ventricle in this case was also hypertrophied because of the stenosis of the pulmonary valve and the dextraposition of the aorta. It is concluded that a patent foramen ovale in association with a tetralogy of Fallot may in some instances result in hypertrophy of the left ventricle sufficient to produce a left axis deviation in the electrocardiogram.

SCHWARTZ


The author presents a case of a young woman who at operation was found to have a coarctation of the aorta just above the diaphragm. She died five hours after surgery was performed. Preoperatively the blood pressure in the left arm was consistently found to be between 180/140 and 200/140, as compared with readings of 120/100 and 130/100 in the right arm. Blood pressure and pulsations were not obtainable in the lower extremities. Pulsations were not noticed over the intercostal arteries and there were only minimal erosions of the ribs. The aortic knob was present but not prominent.

ABRAMSON


The authors report what they believe to be a diagnostic and pathognomonic sign of coarctation of the aorta. In 3 patients a characteristic alteration of the femoral pulse curve was found. The peak of the curve is reached much later than normally. In patients with coarctation it is reached after mechanical systole while in normal subjects it occurs before the end of mechanical systole. In addition, there is a statistically significant delay in the peak of the carotid pulse curve. The secondary peak on the steep decline of the normal curve is absent in coarctation because of the absence of reflection of the pulse wave from the periphery.

Normally the femoral pulse wave is dependent on the pulse wave initiated by the stroke volume and propagated by the aorta. In coarctation the pulse wave is delayed and reduced at the constriction, so that in the femoral artery the pulse wave is formed not by the stroke volume but by fractions of it flowing through collateral channels into the distal part of the aorta at different moments and at different levels.

WAIFE


Two cases of complete atrioventricular block associated with pregnancy are reported, one of them a patient who had had two pregnancies. None of the pregnancies resulted in cardiovascular complications. The cardiac diagnosis in each case was probable congenital heart block associated with a patent interventricular septum. These cases further substantiate the evidence that complete heart block is not in itself a contraindication to pregnancy.

CONGESTIVE HEART FAILURE


Patients in congestive failure were submitted to a prolonged fast. If no edema was present, sodium chloride decreased in the blood and was excreted in the urine at a gradually decreasing rate. On the other hand, if the patients were edematous the sodium chloride of the blood did not vary; sodium chloride was excreted poorly at the beginning and then in greater amounts. This increased elimination paralleled an increased diuresis, so that the curve of elimination of salt and that of water were parallel. The total excretion of salt during fast in general is remarkable. The author believes that there is a temporary reduction of the sodium chloride in the blood and that passage of salt from the tissues to the blood causes reabsorption of the edema, and diuresis.

Luisada


A form of progressive, chronic, "right-sided" cardiac failure was produced in dogs by tricuspid valve avulsion and pulmonary stenosis. Three dogs thus treated developed congestive failure with elevated auricular pressure and distended neck veins. The dogs also showed decreased work tolerance, hepatomegaly, ascites, tachycardia at rest and a relatively fixed heart rate during exercise. Two of the hearts studied in the heart-lung preparation showed cardiac insufficiency.

MINTZ

Tepper, E.: The Effect of Strophanthin on Venous Pressure in Heart Failure. Deutsche med. Wchnschr. 75: 142 (Jan.), 1950.

In three groups, consisting of patients without heart failure, with left heart failure and with right heart failure, venous pressure, arterial pressure, pulse rate and respiration were studied at one-minute intervals following an intravenous injection of 0.25 mg. strophanthin. In the patients without heart failure no changes of significance were observed. In both types of heart failure the pulse rate and the diastolic arterial pressure showed a slight decline. The respiration became slower and deeper.
in left heart failure and the venous pressure increased markedly. In right heart failure the outstanding change was a drop of the increased venous pressure, the average fall being 50 mm. of water. The venous pressure began to fall one minute after the injection; this could also be observed in cases of latent or impending failure. A test injection of strophanthin is of value in the recognition of heart failure as well as in the differential diagnosis between right and left sided failure.

**CORONARY ARTERY DISEASE AND MYOCARDIAL INFARCTION**


The authors studied the effect of cessation of cholesterol feeding in chicks on the hypercholesterolemia and atherosclerosis which had been produced by such feeding. Within ten weeks after the procedure was terminated there was a gradual decline in the severity of the lesions, while blood cholesterol levels fell to normal within three weeks. Microscopically, there were found a diminution and disappearance of foam cell deposits, increasing fibrotic changes in both the abdominal and thoracic portions of the aorta, diminution of grossly stainable lipid and heavier calcification. In general, the early lesions were completely reabsorbed, while more severe lesions underwent regressive and reparative changes.

**ABSTRACTS**


The authors present 14 cases with calcification within myocardial infarcts. In eight of the cases calcification was visible in life. Such calcification is most likely to be noted within the fibrosed myocardium of patients with large myocardial infarctions who survive for six years or more. It is most frequent in the region of the cardiac apex and may be differentiated from pericardial calcification by its position within heart muscle rather than on the very contour of the silhouette. The authors stress that calcification of infarcted myocardium, as in ventricular aneurysm, occurs in individuals with a predominant right coronary artery pattern, or with a balanced pattern, but is infrequent when the chief source of blood supply is from the left coronary artery. The clinical course in these patients is the same as in other patients with similar grades of infarction who have no calcification.


In view of the encouraging lipotropic action of choline on atherosclerosis in experimental animals, the authors made a study of the lipotropic action of choline in proven human atherosclerosis. A group of 230 patients with proved acute myocardial infarction were studied. One-hundred fifteen of these patients served as controls. The other 115 patients who had had acute myocardial infarction were placed on choline therapy after discharge from the hospital. The dose of choline varied from 6 to 32 Gm. daily per individual depending on the patient's tolerance for the drug and the degree of hypercholesterolemia present. Of the 115 control patients, 35 patients or 30 per cent died within three years. In the choline-treated series of 115 patients, 14 patients or 12 per cent died after three years. Thus, over a three-year period the lipotropic agent choline was effective in reducing the mortality rate due to recurrent coronary thrombosis with myocardial infarction.

**ELECTROCARDIOGRAPHY**


The authors studied 463 electrocardiograms significant of left ventricular hypertrophy. The tracings...
were divided into several groups according to the etiology and the clinical form of heart failure. One group consisted of 67 cases with postmortem control.

The electrical axis of QRS was found most often in the first sextant of Bayley between 0 and minus 30 degrees. Deviations from this range occurred in arteriosclerotic heart disease, in aortic stenosis and in arteriolar hypertension. A right axis deviation was not found in the material. In congenital heart disease with left heart strain, the QRS axis was usually normal and $A_{QRS}$ and $A_{V}$ were infrequently opposite in direction. The electrical position was most frequently horizontal in all groups. A marked increase of the voltage in the standard leads was found if left ventricular hypertrophy was produced by aortic stenosis and insufficiency; there was less of an increase if the hypertrophy was due to arteriosclerotic heart disease. The same held true with the amplitude of S in $V_{1}$ and of R in $V_{6}$. In more than half of the cases the index of White and Bock exceeded or was equal to plus 17 mm. This index was normal in most of the patients with arteriosclerotic disease and with congenital anomalies. In one-third of the cases the intrinsicoid deflection in $V_{1}$ was delayed more than 0.45 sec. and in two-thirds of the cases it was associated with an augmented index of White and Bock. A QS complex in $V_{1}$ to $V_{5}$ was not indicative of anteroseptal infarction in the presence of signs of left ventricular hypertrophy. The most marked signs of left ventricular hypertrophy were found in cases of aortic stenosis.

Pick


The authors studied the electrocardiograms of 189 cases of "combined heart strain," including 148 cases of mitral-aortic valvular lesion, 14 cases of mitral stenosis with hypertension and 14 cases of hypertensive heart disease complicated by chronic pulmonary disease. Eighty-nine cases were in general heart failure. In 46 cases left heart failure was present, and in 15 cases, right heart failure. No signs of heart failure were found in the remaining 39 patients. Cases with bundle branch block and signs of myocardial infarction were excluded from the study. In 49 of the cases an autopsy control of the clinical data was available.

In their analysis of the electrocardiograms, the authors directed their attention to the presence of QRS-axis deviation and determination of the electrical position in the limb leads and to signs of rotation along the longitudinal axis and signs of right and/or left hypertrophy in the chest leads. The authors came to the following conclusions based on this analysis: In "mixed cardiopathies" (combined heart strain) the characteristic pattern in the limb leads consists of a QRS axis in the limb leads between 0 and +90 degrees, signs of clockwise rotation along the longitudinal axis and signs of left heart hypertrophy in the chest leads. In contrast to this pattern, pure mitral lesions lack the appearance of left heart strain in the chest leads, and cases with right heart hypertrophy secondary to left heart failure usually show left axis deviation in the limb leads and counterclockwise rotation in the chest leads.

Pick


The arrival of excitation at the exposed surface of the dog heart was measured by recording the electrical events on a double beam oscillograph by means of pairs of small differential electrodes. It was demonstrated that the endocardial breakthrough occurs simultaneously over various regions; this suggests that the conduction system supplies conducting twigs deep into the muscular layers of the myocardium. A region opposite the branching of the larger subdivision of the His bundle and located to the right of the interventricular sulcus was first to be activated in all experiments; this region is termed "source of excitation" (Quellpunkt der Erregung). The authors believe that small individual myocardial sections are selectively excited and that these regions are relatively isolated from each other during excitation, while recovery occurs simultaneously over much larger sections.

Hecht


Complete A-V dissociation was found in 66 patients among 59,000 admissions over a nine-year period. Auricular flutter was also present in 7 and auricular fibrillation in 8 subjects. There were 38 males and 23 females. Heart block was permanent in 64 per cent, chiefly in those over 60 years of age. Forty-two of the 66 had various degrees of the Adams-Stokes syndrome. This occurred more frequently in males but showed no particular age distribution. Eighteen per cent had angina pectoris; 6 per cent had myocardial infarction. Forty-four per cent had some degree of heart failure. Bundle branch block was noted in 55 per cent of the cases. There was no sex difference among the cases of complete heart block associated with auricular flutter or fibrillation. Heart failure with angina pectoris was more frequent in this group of 15 patients than in patients with complete heart block alone.

Waife
HYPERTENSION


The authors report 2 cases of apparently "nephrogen" hypertension, in which decapsulation of the kidneys with denervation of the renal pedicle and splanchnic nerve resection resulted in profound hypotension and death in irreversible shock a few hours after the operation. They tried to simulate the mechanism which was active in these patients in animal experiments: In 5 dogs hypertension was produced by "cellophane nephritis" and two to nine months later the kidneys were removed. In all 5 cases a marked drop in blood pressure resulted, which lasted until the death of the animals. In control experiments on 8 normotensive dogs, bilateral nephrectomy brought about a rise in blood pressure up to hypertensive levels. The authors' conclusion is that the hypertensive effect emanating from the kidneys can be twofold: overproduction of renin or faulty production of hypertensinase. It might be difficult to decide in an individual case which is the actual mechanism, but the latter seems to be the more frequent.

ULLMANN


The author reports a case of pheochromocytoma in which the tumor was located in the costovertebral area just lateral to the upper portion of the descending aorta. On removal of the mass, the systolic blood pressure dropped from 220 to 110 mm. Hg and a few minutes later was barely obtainable. With intravenous adrenaline, a gradual elevation of blood pressure occurred. For several years after operation the blood pressure ranged between 160/100 and 180/110 but later it fell to 140/80.

The author points out that a diagnosis of intrathoracic pheochromocytoma should be considered when a tumor in the costovertebral portion of the chest is associated with paroxysmal or sustained hypertension, especially in the younger age group.

ABRAMSON


Subarachnoid hemorrhage of nontraumatic origin may be the result of a ruptured intracranial arterial aneurysm, extension from a massive intracerebral hemorrhage, meningeal inflammation, bleeding from a neoplasm or a blood dyscrasia. A ruptured intracranial aneurysm is by far the most common cause.

During the acute phase of subarachnoid hemorrhage, the patient is strictly confined to bed with his head elevated, and therapy is entirely supportive. Lumbar puncture is performed for diagnosis only, with the amount of fluid slowly withdrawn being no more than 1 to 2 cc. After the acute stage has subsided, intracranial arteriography is performed and if an aneurysm is revealed which is readily accessible to surgical isolation, this is treated in an appropriate manner. Since the presence of hypertension increases the mortality from subarachnoid hemorrhage, the authors recommend saphenous vein in such instances in an attempt to produce a persistent, significant reduction in blood pressure. Through such means the possibility of recurrence of bleeding from another aneurysm is decreased.

ABRAMSON


The authors point out that 933-F "reverses" the hypertensive effects of epinephrine but has little effect on the hypertension caused by direct sympathetic stimulation; therefore this drug is of value in diagnosing pheochromocytomas, especially if associated with a sustained hypertension. Using an intravenous dose of 20 mg. of 933-F, they studied 120 patients with hypertension. In 2 patients with polycystic kidneys, 2 with hypertension of pregnancy, 2 with chronic pyelonephritis, and 1 each with chronic glomerulonephritis and Cushing's disease, none responded to 933-F with a fall in blood pressure; in fact 3, including the case with Cushing's disease, showed a rise. In only 2 out of the total group was there a significant fall in blood pressure, the others showing a negligible blood pressure change or a rise. Almost all patients developed a tachycardia and became flushed; occasionally premature systoles were encountered, and some had a fine tremor. Most patients complained of palpitation, nervousness and a sense of warmth.

Of the 2 patients with a positive response to 933-F one was found to have a pheochromocytoma at surgery. The other, a 7 year old female, had a neuroblastoma, removal of which caused a gradual fall in blood pressure, and a negative response to 933-F; with recurrence, however, the pressure rose again, and a positive response to 933-F reappeared. Small amounts of epinephrine-like substance were extracted from the tumor.

It is postulated that sometimes pheochromocytomas may produce hypertension indirectly by stimulating the pituitary and adrenal, rather than directly by the effect of their secretions on the arteriolar bed or cardiac musculature.

CORTFELL


Rats were made hypertensive by a figure eight
ligature of the left kidney and removal of the remaining kidney. This type of hypertension was influenced by at least three dietary factors: caloric intake and protein and sodium content of the diets. Restriction of food consumption adequate to permit weight maintenance resulted in a fall to normal pressure levels regardless of the amount of protein offered. Low protein diets also caused a significant reduction in hypertensive readings. Drastic reduction of sodium failed to lower pressures in high protein-fed rats but caused a significant fall to subnormal levels in low protein fed rats. The addition of 3 per cent sodium chloride to a low protein diet resulted in marked hypertension.

HECHT


In the older patient, hypertensive heart disease usually takes a benign course. The condition of the vascular tree and not the height of the pressure determines the progress of the disease. Early roentgen findings are a convex rounding of the left border of the heart due to left ventricular enlargement, and elongation of the silhouette, indicating left ventricular dilatation and involving chiefly the outflow tract extending from apex to aortic valve. The rounded apex is displaced to the left and downward toward the chest wall, plunging posteriorly below the dome of the diaphragm. The high QRS voltage is due to the increased left ventricular mass, with an increased potential directed toward the left arm. ST-segment depression and T-wave inversion occur due to relative myocardial ischemia and to chemical changes affecting myocardial nutrition.

For successful management, the physician should become familiar with the personality of the hypertensive and the patient's entire life must be reviewed in relation to his social and economic goals. Sedation with bromides and phenobarbital, given routinely throughout the day, may lead to confusion, restlessness and disorientation. Chloral hydrate and paraldehyde are preferred.

WAIFE


On the basis of observations in animals and in man, the author concludes that the adrenal cortex is related to hypertension. He reports that, in animals: (1) Bilateral adrenalectomy interfered with the development of experimental renal hypertension and also abolished or impaired renal capacity to form vaso-excitatory materials under anaerobic conditions in vitro, even in animals maintained on high salt diets. (2) Large doses of pituitary adrenocorticotropic hormone at times stimulated the juxtaglomerular apparatus which may secrete a vasopressor material. (3) Desoxycorticosterone acetate (DCA) plus salt produced cardiac and renal enlargement in dogs and also caused hypertension in nephritic rats.

In human subjects, he found that: (1) Prolonged administration of DCA at times produced hypertension in patients with Addison’s disease as well as in normotensive subjects without adrenal disease. (2) DCA, 10 mg. daily for one week, caused a prompt rise in blood pressure in hypertensive patients but not in normotensives. (3) Rigid restriction of sodium chloride masked the pressor response of hypertensives to DCA. (4) Cortisone, 80. mg. daily, caused small decreases in blood pressure in four hypertensive patients and an increase in one patient with Addison’s disease.

WHITE


A 55 year old woman with paroxysmal hypertension, associated with attacks of blurred vision and right-sided convulsions, received 10 mg. of benzodioxan per square meter intravenously. Within six minutes her blood pressure rose from 168/96 to 190/110. This was associated with convulsive twitchings and thick speech. The attack subsided without residual signs after intravenous sodium amytal. This attack mimicked her previous attacks exactly. The cold pressor test and a histamine test did not provoke such a reaction. It is concluded that benzodioxan has a sympathomimetic action in a susceptible person.

PATHOLOGIC PHYSIOLOGY


Experiments in which the livers of dogs were excluded from the circulation confirmed the known fact that this organ exerts a favorable action on the heart. When a liver was included in the circulation, or when hepatic blood was injected, both mean and pulse pressure increased. Regular, slow undulations of the blood pressure were observed after exclusion of the liver, while a steady level of the blood pressure was maintained after injection of hepatic blood. The above observed phenomena were not due to mechanical or chemical effect of the injected solution, as proved by several control studies.

The authors are still uncertain whether to admit a hepatic hormone or the existence of other actions. One possibility is that the liver removes from the blood some depressant metabolic product so that it may not reach the heart. In other words, the observed phenomena might be caused by toxic properties acquired by the plasma when the liver is not included in the circulation.

In order to determine the cardiac output in man under anoxemic conditions, the authors placed healthy individuals in a low-pressure chamber for half an hour and lowered the atmospheric pressure within twenty minutes to values corresponding to an altitude of 4000 meters. An increase of the cardiac output, determined by the ethyl iodide method, from 30 to 50 per cent was observed. In untrained persons this was due mainly to an increase of the heart rate, in trained individuals mainly to an increase of the stroke volume. Following exercise under anoxemic conditions a further increase up to 75 per cent occurred.

Pick


The role of circulatory stasis in the lungs as an etiologic factor in postoperative pulmonary complications is emphasized by the author. Normally the lungs can accommodate large quantities of blood in their capillary beds without any increase in external dimensions. The increased volume of blood in the lungs causes enroachment on the alveolar spaces by the engorged capillaries. When the subject assumes the recumbent position, there is a reduction in vital capacity, since the lungs now serve as a storage place for the blood which has drained out of the veins in the lower extremities. Because of the muscular inactivity and depressed function of the surgical patient during and immediately after operation, there is a demand for less blood in large portions of the body. As a result, accumulation of blood occurs in the lungs. Abnormal respiratory excursions and lack of change in body position over a period of hours further contribute to circulatory stasis. The blood stasis particularly when present in the dependent parts of the lung, predisposes the postoperative patient to the development of atelectasis and pneumonia. More attention should therefore be directed to the avoidance of pulmonary blood stasis.

Abramson


The author reports the case of a 49 year old man previously in good health who touched the lower wires of a high tension power line with an aluminum ladder. He was instantly knocked to the ground and remained unconscious for several minutes. A short time later an examination revealed a ventricular rate of 130 with a barely palpable pulse and a blood pressure apparently too low to be recorded. Three hours after the accident the blood pressure was 80/60 and auricular fibrillation with ventricular premature beats was observed on the electrocardiogram. The pulse rate was 120. For the following two days the pulse and blood pressure remained in the same range. The patient was digitalized and on the following day (the third day after the accident) the electrocardiogram was normal. It was not until the fifth day that the blood pressure increased to 140/70. A slight tremor of the hands remained for a longer period of time.

A review of the literature by the author shows 7 reported cases of auricular fibrillation, or auricular flutter, after electrical accidents. The pathologic finding in electrical fatalities is intensive blood stasis. Anatomical lesions of the heart are rarely seen. Rupture of the myocardial fibers and fragmentation of the myocardium have been reported.

Margolies


Cooling and warming the entire epicardial surface of the hearts of 7 dogs by perfusing the intact pericardial sac with isotonic saline solution produced opposite effects in the direction of the T wave in standard bipolar limb leads and in unipolar limb leads. Heating the epicardial surface caused increase in height of T; cooling resulted in inversion of T. S-T segment shifts occurred only at maximal temperature ranges, and the duration of the Q-T interval increased in direct proportion to the coldness of the perfusate. The authors conclude from these experiments that an endocardial-epicardial gradient exists during repolarization.

Hecht


The author describes the action of the lungs as a check-valve capable of regulating the transfer of blood from the right ventricle to the left; he thus seeks to clarify certain apparent discrepancies in the operation of Starling’s law and the genesis of congestive failure of the circulation.

The extensive pulmonary capillary network receives blood from both ventricles through the pulmonary and bronchial arteries. If one pulmonary artery is ligated these capillaries will fill and become distended from the higher pressure bronchial arteries. The pressure within this capillary network is the result of intra-alveolar air pressure, pulmonary and bronchial arteriolar pressure and pulmonary venous pressure. The appearance of the lung of the guinea pig at simulated high altitude is identical with that of a dog after ligation of a pulmonary artery or of a man with congestive failure; all show engorgement
of the capillaries of the alveolar walls with thickening and enroachment upon the alveolar spaces. Low oxygen tensions have been proved to increase pulmonary artery pressure in man and experimental animals apparently as the result of local arteriolar and precapillary constriction, accompanied, in the experimental animal at least, by systemic and therefore bronchial artery dilatation. The author believes that the changes in the lungs in congestive failure are not passive and that they may depend almost entirely upon anoxia rather than on back pressure from the left atrium. He states that there are indications that certain mechanisms, such as bronchial constriction, pulmonary arteriolar constriction, veno-pressor tone, right heart tone and rate of diuresis, operate to cushion the effect of a sudden increase in blood volume, venous return and arterial pressure and thus protect the alveolar capillaries from rupture. He then constructs a theory as to the manner in which this check valve function of the lung takes part in the genesis of congestive failure of the circulation.

H. D. Levine


Measurement of coronary blood flow in sixteen dogs through the left anterior descending coronary artery by means of an electromagnetic rotameter revealed that during the onset of electrically induced auricular fibrillation a sharp drop occurs in coronary flow which is returned to normal and better than normal levels within a few seconds. Upon cessation of the irregularity coronary flow increases and remains high for several minutes.

Hecht

PATHOLOGY


The authors describe a group of 27 patients with chest pain, most of whom had a friction rub and enlargement of the roentgen-ray shadow of the heart. In these patients neither the clinical course nor subsequent prolonged observation (six months to sixteen years, average five and one-half years) established the existence of either rheumatic fever or myocardial infarction. In most cases the attack followed in the wake of an acute upper respiratory infection or an atypical pneumonia. The pain radiated in the majority of cases, was more often intermittent than continuous, and in most cases was aggravated by deep breathing, cough or movement of the body. Dyspnea was experienced by 14 patients and 3 of these required the erect posture for comfort. A pericardial friction rub was heard in 19 cases.

In not a single instance were there signs of shock or cardiac insufficiency. Left pleural effusion was present in 14 cases, complicated by right pleural effusion in six. The course was variable in severity and duration but the prognosis for recovery was always good. The occurrence of fever, a friction rub or an increase in the sedimentation rate on the first day of the illness was helpful in differentiating this type of pericarditis from that type complicating myocardial infarction. Over a period of from two weeks to three months (average six weeks) the electrocardiogram showed distinctive changes in the RS-T segment and T waves without depressed RS-T segments, a Q pattern or prolongation of the P-R interval. Recurrences, milder than the original attacks, occurred 4 times in 3 cases. The antistreptolysin titer was generally not elevated but it was high in two patients from whose throats a hemolytic streptococcus was grown. Penicillin, streptomycin and sulfadiazine had no apparent beneficial effect on the pericarditis. There was no evidence that this condition is a precursor of constrictive pericarditis.

H. D. Levine


The authors report the clinical and autopsy findings of a case of rupture of a saccular aneurysm of the lower thoracic aorta. The presenting symptoms at the time of admission simulated an acute gastrointestinal perforation. There were physical and roentgenographic signs suggesting a pneumonia consolidation in the right lower chest, but successive thoracenteses indicated a moderate serosanguinous effusion, followed within a few days by the aspiration of a thick bloody fluid which did not clot. The patient died about six weeks after the onset of symptoms. The necropsy findings were those of pinpoint perforation into the right pleural space.

SchwedeL

PHARMACOLOGY


The authors describe a method for measuring minute quantities of digitoxin and ouabain in the serum of both experimental animals and patients under digitalis therapy. The frog's heart was used as a biological indicator. The inotropic effects rather than the toxic effects were measured. The authors believe that previous reports of the rapid disappearance of digitalis glucosides from the serum are in error because the previous technics were too crude to detect small quantities. At low levels the evaluation can be made in terms of calcium ions, when pH and potassium are controlled.
The contractile response of the frog heart bathed with human serum was depressed by the addition of citrate. This depression was mitigated by the subsequent addition of ouabain or digoxin. It was possible to transform the citrate values into equivalent calcium concentrations for the serum in question. When equilibrated with ouabain dissolved in human serum, the frog heart retained the isotropic effect after being transferred to Krebs-Henseleit solution. When human serum was diluted with calcium-free Krebs-Henseleit solution, the calcium-protein complex behaved as a calcium buffer. Twenty per cent human serum (two parts of serum to eight of calcium-free synthetic solution) had a calcium-ion concentration of approximately 0.54 mm. In 3 cases of congestive heart failure, one of which was treated with ouabain intravenously and 2 of which received digoxin orally, the serum concentration remained elevated for over an hour. The higher figures for digoxin reflected largely the lower potency of digoxin as compared with ouabain.

**GODFREY**


The purposes of this study were to learn the specific effects of Mercuhydrin on conduction and electrical systole in the isolated rabbit heart; to compare its myocardial toxicity with that of other organic mercurials; and to evaluate the detoxifying effects of BAL, ascorbic acid and thiamin, used before and after the mercurial compounds.

Mercuhydrin caused prolonged atrioventricular and intraventricular conduction time, prolonged the electrical systole, and produced dropped beats and cardiac asystole. Preliminary BAL, ascorbic acid and thiamin, in descending order of efficacy, raised the blocking and cardiolethal dosages of Mercuhydrin. The same drugs given after the mercurial compound partially reversed the cardiac effects. Theophylline ethylene diamine and epinephrine exhibited lesser cardio-protective activity. Magnesium sulfate, niacin and riboflavin had no cardio-protective activity.

**MINTZ**


The purposes of this study were (1) to obtain comparative cardiotoxic and cardiolethal dosage levels of Thiomerin and (2) to determine the cardio-protective effects of BAL, ascorbic acid and thiamin used before and after Thiomerin in the isolated perfused rabbit heart.

Thiomerin prolonged atrioventricular and intraventricular conduction times, prolonged electrical systole, and produced transient ventricular ectopic beats and ventricular fibrillation. Large doses of Thiomerin produced marked cardiac slowing, asystole, cardiac dilatation and decreased contractility of the heart. To a much lesser extent than other mercurials, Thiomerin produced monophasic type S-T segment displacements, doming and inversion of the T wave. The cardiotoxicity of Thiomerin is less than 1/200 that of Mercuhydrin and 1/1000 that of Salyrgan, theophylline and Mercuzanthin. The cardiolethal ratios of Thiomerin to Mercuhydrin are less than 1:700; the ratio of Thiomerin to the other mercurials is 1:1,800.

When Thiomerin was preceded by BAL, approximately 2 times the usual cardiolethal dose was tolerated. BAL also reversed the prolonged atrioventricular and intraventricular conduction times. Ascorbic acid increased the cardiolethal doses of Mercuhydrin and Mercuzanthin but not of Thiomerin. The slight conduction effects of small doses of Thiomerin were often partly reversed by ascorbic acid. Thiamine protected against cardiolethal doses of Mercuhydrin but not against those of Thiomerin.

**MINTZ**


This study was undertaken to determine the influence of cortisone upon the development of hypertension and nephritis in both intact and adrenalectomized rats. The administration of cortisone did not prevent the development of experimental cytotoxins serum nephritis in the rat. Moderate hypertension developed in nephritic rats with intact adrenal glands when cortisone was injected, whereas severe hypertension appeared in adrenalectomized nephritic rats similarly treated with cortisone. The nephritic rats rendered hypertensive by the administration of cortisone presented no greater histologic evidence of renal damage than did normotensive control nephritic animals.

**MINTZ**


Goldenberg and associates stated that “nor-epinephrine hypertension is due to an increase of total peripheral resistance, with no significant change, or even a drop in cardiac output, whereas epinephrine hypertension is the result of a significant increase of cardiac output.” It is not clear which of the factors that determine cardiac output are responsible for the difference of response to epinephrine and norepinephrine. One factor which can be evaluated is the
effect of the two substances on the contractile force of myocardium.

The authors found that both dl-norepinephrine (Arterenol) and N-isopropyl-norepinephrine (Isuprel) exert an inotropic action on heart muscle which is at least as great as that produced by U.S.P. epinephrine. This report indicates that the differences in cardiac output which Goldenberg et al. reported are probably not due to a lack of inotropic effect by dl-norepinephrine.

MINTZ


Experiments on the combining capacities of the cation exchange resins Nalcite HCR, Duolite C-3, and Amberlite IR indicate that Nalcite HCR is the most efficient as judged by the uptake of sodium, potassium and calcium from solution.

Sodium, potassium and calcium can be removed from the animal body in significant amounts by the ingestion of cation exchange resins. The relative affinity of the resin for different cations and the cation content of the diet both influence the extent to which various cations will be removed from the body by resin. The in vitro and in vivo uptake of sodium by H-form resins is suppressed by calcium and potassium ions. A high calcium diet markedly interferes with the uptake of potassium and sodium of the resin. It may be possible to remove selectively cations from the body by proper control of the cation content of the diet and the form and amount of ingested resin.

MINTZ


The venous occlusion plethysmograph with a compensating spirometer recorder, the digital plethysmograph and potentiometric recording of the skin temperature over various regions of the body, including the fingers and toes, was used to study the effects of Priscol on the peripheral circulation in man. Intravenous administration of 50 mg. of Priscol in 2 cc. of solution within a period of two minutes produced a definite increase in blood flow in the forearms and legs, which lasted several hours. The systolic blood pressure increased an average of 6 mm Hg and the diastolic decreased an average of 11 mm. These changes in blood pressure were transitory; within fifteen minutes of the administration of this drug, the blood pressure returned to the pre-injection level. The heart rate increased an average of 26 beats per minute, and the rate returned to normal within fifteen minutes after the injection of the drug. There was a definite increase in the amplitude of the pulse even during the rapid heart rate produced by Priscol. Priscol produced the greatest increase in skin temperature over the lower extremities, especially the toes.

MINTZ


Lanatoside C was given intravenously to 26 patients who had the clinical and electrocardiographic findings of paroxysmal supraventricular tachycardia, after carotid sinus and ocular pressure, gagging, and Valsalva maneuver had failed to terminate the arrhythmia. A period of 60 to 120 seconds was used for the injection and a total of 1.2 mg. of the drug was used as a routine procedure. If in 30 minutes the rhythm had not reverted to normal, 0.4 mg. more of the drug was given intravenously. Usually before a second dose of lanatoside C was given, carotid sinus and ocular pressure were tried again. In all the patients, normal rhythm was restored within one and one-half hours after administration of the preparation referred to above.

WENDKOS

PHYSICAL SIGNS


Basing his discussion on 4 observations with post-mortem controls, the author describes the clinical features of dissecting aneurysm of the aorta with special reference to the differential diagnosis between it and acute coronary occlusion. The radiation of the pain, which may be excruciating, sometimes follows the course of the aorta. Restlessness, singultus and thirst may be observed here more often than in myocardial infarction. Pre-existent hypertension may persist up to twelve hours after the onset of the attack. Anuria may be observed as a result of dissection of the renal arteries or of shock. In one case an acute abdominal picture was present with unusual bradycardia. In the only case in which the correct diagnosis was made during life there was a marked anemia, extensive cutaneous hematomata, abdominal distention and a paraplegia of the lower extremities.

PICK

PHYSIOLOGY


Cross circulation experiments in dogs demonstrated the presence of a normally occurring pressor substance in the blood of normal dogs and of dogs whose liver, kidneys, spleen or adrenal glands had
been removed. The blood of dogs with experimental renal hypertension seemed to contain greater amounts of the substance than normal controls but its occurrence was not sufficiently regular to suggest that the substance played a part in the maintenance of this type of hypertension. The indicator dogs, into which 600 to 1000 ml. of heparinized dog blood was transfused, were made highly sensitive by either nephrectomy or spinal cord section from C-6 caudad with carotid sinus denervation, or both. Pressure rises of 50 to 75 mm. Hg were observed during the infusion lasting from five to seven minutes with or without the donor dog in the circuit. It is assumed that the pressor substance has many of the characteristics of norepinephrine because methods which sensitize norepinephrine enhance the blood pressure response, adrenergic blocking agents (Dibenamine and Picrolinol) abolish the effects, and because infused norepinephrine, in contrast to epinephrine, can be cross-circulated with similar effects. Perfused blood alone, therefore, appears to be capable of exhibiting vasoactive properties.

HECHT


The author observed a high incidence of liver enlargement in two groups of workers: wine growers and dental surgeons. Both occupations require protracted and strenuous work in a more or less fixed upright position. This leads, in the author's opinion, to an interference with the normal liver circulation and to a general circulatory disturbance, of which liver enlargement is the earliest sign.

Pick


The diagnostic possibilities of auscultation have limitations due to the fact that the human ear can distinguish sounds and murmurs only within a certain range of intensity, frequency and time sequence. Thus, the differentiation of systolic and diastolic (presystolic) murmurs is possible only if they begin at least 0.1 sec. before or after the first heart sound. The quality of the first sound depends on this anatomical state of the mitral valve. Calcification of the leaflets leads to a decrease of its intensity. A loud first sound is due to a "misplacement" of the leaflets at the beginning of systole, and is found with a short A-V conduction time or with incomplete filling of the left ventricle in mitral stenosis or in shock. Additional (gallop) sounds cannot always be distinguished with certainty. A triple heart rhythm heard only during inspiration indicates splitting of a heart sound. A true gallop sound has a deep character. If the latter is heard together with a loud first sound, it indicates mitral stenosis even if no diastolic murmur is present. This combination is found only if thickening of the mitral leaflets is confined to the free border. Only such cases are suitable for a surgical approach to the valvular lesion.

Pick


The ferret has been used as a laboratory animal for the study of numerous viral infections because of its susceptibility to these diseases. Diseases studied have been influenza, fowl-pox, swineherd's disease, Rift Valley fever, poliomyelitis, canine distemper and lymphocytic choriomeningitis. The ferret, because of its larger size, might serve better than the mouse or other rodents for investigations of these problems. Since little is known of the normal physiology of this animal, the present study was undertaken to study its cardiovascular function.

The mean cardiac output per minute per square meter of body surface for a group of 10 normal ferrets was found to be 2.476 liters. The average circulation time by the fluorescein technic was 6.8 seconds and 4.5 seconds as determined by the cyanide method. The average mean arterial blood pressure was 147 mm. Hg.

MINTZ

RHEUMATIC FEVER


Colorado has been among the first five states with large death rates from rheumatic heart disease among school children for a period of over twenty years. For this reason, a study was conducted to determine the prevalence and severity of rheumatic heart disease at high altitudes. A total of 1017 children living at an altitude of 10,000 feet or above were examined. Ten children were found to have rheumatic heart disease, an incidence of 1 per cent, and seven had possible rheumatic heart disease. The authors conclude that rheumatic heart disease is not unusually prevalent or severe in children living at an altitude of 10,000 feet or above.

MARGOLIES

ROENTGENOLOGY


Two types of the so-called "small heart" should be distinguished. The first type, found in asthenic but otherwise normal persons, is associated with a narrow thoracic cage and appears small by x-ray examinations because of its vertical position. The true small heart is more horizontal and is due to a congenital hypoplasia or may develop in dehydration.
or as a consequence of chronic cachectic processes. The author reports one such observation on a patient with lymphosarcoma, in whom a cardiothoracic ratio of 1:2.6 was found and whose heart was placed horizontally within the thorax. At autopsy the heart was very small and showed marked brown atrophy of the myocardium.

Pick


The authors discuss the problems associated with the injection of a contrast medium into the aorta through a catheter inserted into the radial artery and by way of a cannula inserted into the common carotid artery. Their discussion is based on observations of 21 cases of aortic coarctation and 15 cases of patent ductus arteriosus.

In performing thoracic aortography with a catheter inserted with the right radial artery they met with the problems of arterial spasm, difficulty in directing the catheter into the aorta, and in bringing the tip of the catheter into correct position, especially into the ascending aorta. In the case of aortography with a cannula they stress that the outer of the double cannula must be inserted deeply enough to reach the aorta. To lessen cerebral complications (hemiparesis, convulsions) they suggest the injection of 50 cc. of 50 per cent rather than 70 per cent of organic iodine. The dye is injected with a specially constructed pressure apparatus through the catheter or the cannula, in three to five seconds. Anteroposterior and lateral view roentgenograms are taken simultaneously.

Schwedel


The authors describe a method of angiocardiography in which the opaque dye is injected through a ureteral catheter (8F-9F). By selecting the site of the catheter tip various portions of the right atrium and right ventricle may be visualized. Apparently no better visualization of the left-sided chambers is obtained by injecting the dye into the pulmonary artery, except that there are no overlying densities due to residual dye in the right heart chambers. Demonstration of infundibular and pulmonic valvular abnormalities is usually better than with the older technics.

Schwedel

Surgery in Heart and Vascular System


The authors present the results obtained in 30 hypertensive patients subjected to total paravertebral sympathectomy, extending from the stellate to the third lumbar ganglia. Two in the series died as a result of the operation.

A quantitative relationship was found to exist between the extent of the sympathectomy and the degree of lowering of the blood pressure; this appeared to be dependent upon the more widespread vasomotor paralysis which followed total sympathectomy. However, the percentage of improved results in the blood pressure lowering effect was not great enough to justify the somewhat greater morbidity and mortality which attend the total sympathectomy, as compared with a lesser operation such as the thoracolumbar, T-7 or T-8 to L-3, and the splanchic nerve resection. The advantages of total sympathectomy were that, since the stellate ganglia were removed bilaterally, there was an abolition or improvement of anginal pain because of interruption of afferent nerves that traverse the sympathetics, and also a slowing of the heart rate because of interruption of the accelerator nerves. Despite the extent of the operation, there was a partial return of tonus, probably due to the presence and augmented activity of residual sympathetic nerves which do not pass through the paravertebral ganglonated chains, the splanchic nerves, or the celiac ganglia.

Abramson


Most aortic aneurysms are due to degenerative arterial disease, which renders them less amenable to a direct surgical attack and more subject to fatal rupture than the traumatic aneurysms that involve the extremities. Operations that slow the blood current in the aorta increase the pressure upon the wall of the artery and favor rupture of the aneurysm even though the arterial obstruction is proximal to the aneurysm. The author describes an operation for decreasing the blood pressure within the aorta and aneurysm which has given relief from pain and greater longevity than the other operations used. In this operation it is essential that a large artery connected with the aorta be used and united, only end-to-end, to an adjacent vein in the direction of normal vascular flow.

Lecks

Thromboembolic Phenomena


This work was based on the need for a laboratory test to predict thromboembolic disease. Waugh and Ruddick measured the ability of whole blood to counteract the anticoagulant effects of heparin in vitro. The basis for this test was the physiologic antagonism between thromboplastin and heparin; the former substance was considered to be increased
in the bloodstream in cases of accelerated coagulation. By using increasing amounts of heparin in a series of test tubes, they attempted a “controlled declaration of the clotting process.” Silverman modified this test in an attempt to increase its accuracy. The authors used the Silverman modification in this report.

The in vitro tolerance test was studied in 74 controls, 12 obstetric patients, and 7 patients who had undergone prostatectomy. The authors found that this test failed to show a significant difference between the control and the post-partum-post-operative groups. These results differ from those in the reports of Waugh and Ruddick and Silverman.

MINTZ


Cummine and Lyons introduced the concept of an intermediary product in the fibrinogen to fibrin reaction to which they gave the name fibrinogen B. If fibrinogen B is found in the circulating plasma it is considered abnormal. They correlated its presence in the plasma with the production of intramuscular thrombosis. They also noted that fibrinogen B appeared in the plasma whenever tissue necrosis was present, especially in cases of pyogenic infection. Lyons also demonstrated in vitro that platelet fragility increases in the presence of fibrinogen B.

The authors made 553 tests and in only two instances were the criteria of Cummine and Lyons for inevitable thrombosis fulfilled, but neither patient developed clinical evidence of intravascular thrombosis. On the basis of this experience, the test would appear to be of no particular value in the confirmation of a diagnosis of thrombophlebitis suspected clinically. The authors were in agreement with Cummine and Lyons, however, in noting a relation between the presence of tissue necrosis and the appearance of fibrinogen B in the plasma. They also noted, as did Cummine and Lyons, a persistently negative test for fibrinogen B in thrombophlebitis after it was initially positive.

In view of the good results of anticoagulant therapy in intramuscular thrombosis initiated on clinical evidence alone, the practicality of this test is open to question.

MINTZ


Following the use of ultraviolet blood irradiation in 10 cases of acute deep thrombophlebitis, the authors noted a rapid disappearance of pain, tenderness along the course of the involved vein, and fever. Edema remained for from one to twelve days after treatment was started. The therapy also appeared to be effective in 9 patients with chronic thrombophlebitis. The procedure consisted of removing a predetermined amount of blood from an antecubital vein (1.5 cc. per pound of body weight) and passing it through the Knott hemo-irradiator which exposed the citrated blood at a definite rate to ultraviolet rays from a water-cooled quartz mercury vapor lamp. The irradiated blood was then injected back into the patient.

ABRAMSON


An attempt was made to evaluate sympathectomy as a therapeutic procedure in thromboangiitis obliterans. In a series of 85 patients, 170 extremities were sympathetomized. In 3 of 25 limbs intermittent claudication disappeared following operation, in 4 it became much less and in 8 it improved, while in the remaining 10 the symptom was unchanged or became worse. Most of the patients demonstrated improvement in general comfort. Twenty-three of the sympathetomized extremities were subsequently amputated.

ABRAMSON


On the basis of a study of 3 cases of thrombosis of the internal carotid artery, the author calls attention to the value of carotid angiography in making the diagnosis. The branches of the external carotid artery are visualized but the internal carotid will show only in the first one or two centimeters of its course. Rarely the thrombosis may extend down to the origin from the common carotid.

It is pointed out that careful examination of the arteries of the neck in all patients with hemiplegia, convulsive states, or syncope may lead to a more frequent diagnosis of thrombosis of the carotid arteries.

Generally there is a sudden onset of hemiplegia, preceded by headache and dizziness. The arm is usually more affected than the leg and face. Hemianopia and hemianesthesia may be present and also aphasia, when the appropriate side is affected. Although some degree of recovery generally takes place, it is far from complete.

The etiology of the condition is not clear. Trauma does not appear to play any role. However, arteriosclerosis has been noted in a considerable number of cases and thromboangiitis obliterans in several.

ABRAMSON


The findings observed in 6 cases of non-traumatic
thrombosis of the carotid artery, as demonstrated by angiography, are reported. The first symptom in this condition is often some transient weakness of one of the extremities together with a minor disturbance of speech. After partial recovery takes place, several recurrent exacerbations of weakness and disturbance of speech occur, which then are followed by increased weakness, aphasia, loss of consciousness, or visual defects. In some instances slow improvement is noted, although in most cases the condition remains stationary for years. Angiography is the most important diagnostic measure. The radiopaque substance is injected into the common carotid artery. The commonest site of thrombosis is either at the point of bifurcation of the common carotid artery or a short distance above this site. Treatment does not differ from that of hemiparesis in cerebral thrombosis. The use of anticoagulants is contraindicated because of the possibility of cerebral hemorrhage.

**ABRAMSON**

**VASCULAR DISEASE**


The author presents a survey of various surgical procedures for the management of arterial diseases in the lower extremities. He stresses the importance of early treatment and recommends repeated intraarterial injections of a combination of acetylcholine (0.2 Gm.) with Prostigmine (0.5 Gm.) dissolved in a 1 per cent solution of procaine. Under this treatment he noted marked subjective and functional improvement due to an increase of blood supply to the afflicted extremity as evidenced by a rise of the skin temperature in the injected area. This was especially true in patients with a vasospastic component. Lumbar sympathectomy may result in permanent improvement whereas paravertebral anesthesia (L-2 to L-5) has only a temporary effect, but is useful for instantaneous relief of pain and for a quick demarcation of beginning gangrene.

**PICK**


Both paravertebral sympathetic blockade and anesthesia of the posterior tibial nerve are useful for the establishment of the vascular function of the lower extremities in the ambulatory patient, since neither of them involves the nerve supply to muscles necessary for walking. In order to establish a standard method the operation was performed on 16 healthy persons between 24 and 57 years of age. Elimination of the vasoconstrictor tone of the foot was determined by thermo-electric measurements of the skin temperature of the dorsal and plantar side of the foot. An evaluation of 17 experiments revealed that paravertebral anesthesia is not suitable as a standard method; the results are inconsistent and the procedure difficult, dangerous and unpleasant for the patient. This is in contrast to anesthesia of the posterior tibial nerve. With the latter procedure, performed at a constant room temperature of 24 C., a skin temperature in the examined area of less than 35 C. is abnormal and values below 35.25 C. suggestive of inadequate blood supply to the leg. At a room temperature of 20 C. the respective abnormal and suggestive values are 34.00 C. and 34.45 C.

**PICK**


In an attempt to study the factors involved in the production of primary varicose veins in the lower extremities, histologic sections were made of the sapheno-femoral junction in 100 subjects. In only 16 cases was the sinus wall of the saphenous vein opposite the valve normal. In all others the sinus was from one-half to one-fifth of the normal thickness, as a result of absence of smooth muscle and internal elastic membrane in this site. The question was raised as to whether this defect was congenital and possibly hereditary. The valve leaflets were histologically normal in all instances.

**ABRAMSON**


The author states that patients exhibiting allergies of any sort should be tested for sensitivity to sclerosing solutions before injection of varicose veins is attempted. At times patients who have had injection therapy in the past may acquire sensitivity when a long period is allowed to elapse between injections. If too much sclerosing agent is used at any one time, the material may actually erode the vessel wall and cause a sterile abscess. Excessive dosage may also result in pigmented spots or streaks to a greater degree than necessary and may cause severe pain and fever. Patients with such clinical vascular disorders as thrombophlebitis, Raynaud's disease, Buerger's disease, vasospasm, and arteriosclerosis obliterans should not be subjected to injections of sclerosing agents, since the added spasm consequent to their use may reduce the caliber of the involved vessels or their collateral bed to a critical degree and thus contribute to the production of gangrene. Successful sclerosis involves the use of a minimum
amount of material and the subsequent maintenance of the vein in a collapsed state, through the prolonged use of elastic bandages or stockings, until healing occurs.

A BRAMSON


The author emphasizes the importance of physical medicine as therapy in peripheral vascular disorders. He points out that the application of controlled heat may be of value in certain conditions, although the use of uncontrolled heat may cause great harm, particularly in conditions in which arterial insufficiency exists. Frequently night cramps, which are not specific for vascular disease, will be helped by an electric blanket. Vascular exercises and the oscillating bed may reduce the rest pain of occlusive arterial vascular disease and may also decrease the edema of the legs which is often present in this type of condition. Whirlpool baths cause relaxation of muscles and are comforting, although they do not affect intermittent claudication. They seem to be especially effective in the treatment of varicose ulcers and secondary stasis dermititis. Pressure suction boot treatment and intermittent venous hyperemia appear to have little, if any, role as therapy in peripheral vascular disorders.

A BRAMSON


Since aspirin is considered to act as an anti-coagulant at the same time that it relieves pain, the author used the drug in anginal pain and in venous thrombosis. The dosage adopted was similar to that utilized in rheumatic carditis. According to the author, the results produced sufficient alleviation of symptoms to warrant further trial with the drug.

A BRAMSON


Stimulation of the cervical sympathetic trunk and the application of local epinephrine or norepinephrine to the conjunctivae and the injection of epinephrine intravenously has produced the picture of decreased circulation from narrowing of the vascular bed. It also produces what looks like "sludging" of blood within the vessels. Intravenous procaine in small doses will often reverse the sludging process, at least for a time, but this varies with the concentration of novocaine and the speed of injection.

M INTZ

MISCELLANEOUS


The author describes a technic of catheterizing arteries of the upper thorax and neck wherein the radial artery is exposed under local anesthesia, incised, and a ureteral catheter (6F–9F) is inserted and guided upwards into the subclavian artery under fluoroscopic control. Fifteen cc. of a radiopaque dye are injected rapidly, and roentgenograms are taken immediately after injection and three to four seconds later. Compression of the brachial artery with a sphygmomanometer prevents the flow of the dye peripherally.

The author feels that this method is suitable for investigation of structures supplied by the subclavian artery, such as the parathyroid glands, parts of the thyroid gland and the thymus. An illustrative case is described in which a metastatic tumor in the upper thoracic aperture was visualized by this method. After the injection of the dye the brachial artery is ligated above the incision site. The author states that no untoward effects have resulted from the entire procedure.

S CHW EDEL


The oximeter is a photoelectric device for continuous determination of arterial oxygen saturation, which depends upon the differences in light absorption by the pigments oxyhemoglobin and reduced hemoglobin. The model that can be obtained commercially is applied to the ear lobe, the blood in the ear first being arterialized through the application of heat. According to the authors, the clinical value of the oximeter justifies its further development. However, certain precautions must be taken, particularly with regard to the means of arterIALIZING the ear blood and the way in which the 2 photocells are mounted in the earpiece. The development of a quantitative oximeter is a long range program which still requires considerably more work and improvements in technic.

A BRAMSON


This instrument has proved a valuable tool in the field of cardiovascular physiology but its value in clinical work remains to be defined. Promising results have been obtained in preliminary studies of the arrhythmias and myocardial infarcts. In the latter
condition, it has been possible to demonstrate clearly paradoxical movement of the infarcted ventricular wall. However, in examinations being done on a large group of older men, several instances of paradoxical type movement in subjects with no or minimal cardiovascular symptoms and a normal electrocardiogram have been encountered without any apparent cause. Records from subjects with valvular heart lesions have been difficult to analyze.

One case diagnosed aneurysm of the thoracic aorta and another diagnosed mediastinal tumor by the electrokymograph have been verified at surgery and by response to x-ray therapy, respectively. It remains to be determined in what specific types of cardiovascular disease pathognomonic electrokymographic patterns appear and just what clinical value the instrument will have.

**BOOK REVIEWS**


Gold's monograph is the first book dealing solely with the use of the important drug, quinidine. The author has discussed in turn the details of indications, therapeutic actions, toxic actions, effect on the electrocardiogram, clinical pharmacology, dosage, and the prevention and treatment of all the minor and major arrhythmias with which the practitioner may be confronted. There is a very brief discussion of the use of quinidine in children and of alternative routes of administration, and a chapter on combined use of quinidine and digitalis. The section on pharmacology of the drug is clear and concise, as would be expected from the author's special qualifications. The reviewer strongly concurs in Gold's statement that "the use of inflexible systems of dosage is responsible for a large share of the defeats in quinidine therapy, and some of the disasters." Gold touches upon, but does not emphasize as clearly, that the disasters are often due as much to failure of careful supervision, with repeated clinical and electrocardiographic observations during and after conversion of an arrhythmia, as to the inflexibility of the system of dosage.

The major criticism that the reviewer has of the monograph concerns Gold's handling of the chapter on chronic auricular fibrillation. Many cardiologists would disagree with his statement (on page 53) that the use of quinidine in longstanding auricular fibrillation has, for the most part, been abandoned. He admits that quinidine is credited with accidents which are purely coincidental and stresses the fact of occasional serious complications of quinidine therapy without giving sufficient emphasis to the hazards of auricular fibrillation, per se, and to the benefits that may be obtained by converting some patients with auricular fibrillation to normal rhythm.

One might question the author's recommendation to avoid the simultaneous use of quinidine and digitalis whenever possible. His stress on the toxicity of quinidine in animals poisoned with digitalis does not do justice to the clinical fact that the two drugs have been repeatedly used in combination without difficulty when poisoning with either drug is avoided. If quinidine is used without prior digitalization in patients with auricular fibrillation, acceleration of the ventricular rate with quinidine may be so great as to force cessation of quinidine therapy.

With the reservations noted in the discussion of chronic auricular fibrillation and of the combined use of digitalis and quinidine, this monograph can be strongly recommended to the practitioner as an excellent guide to the understanding and successful use of quinidine.

**Maurice Sokolow**

**Digitalis and other Cardiotonic Drugs, ed. 2. Eli Roden Michit, M.D.** New York, Oxford University Press, 1949. 245 pages, 20 figures, 11 tables, $5.75.

The author presents a review of the clinical use of digitalis preparations. Divided into chapters dealing with digitalis folium, digitalis lanata, lanatoside C, other digitalis glycosides (including digitoxin, Digoxin, Gitalin), strophanthus, squill and other cardiotonic agents of plant origin, the book, in addition to a brief historical sketch, reviews the most recent literature on the clinical use of each digitalis preparation. The recent literature on the mechanism of action of digitalis is well reviewed. The bibliography at the end of each chapter is extensive. For the general practitioner who wishes to appreciate the volume of work at present under investigation in digitalis therapy, this book is excellent. The book is, however, lacking in critical analysis of much of the work done by others which is incorporated in the text. Impres-