

ARTERIOGRAPHY Changes in the vascular tone of the leg of the dog were studied following intra-arterial injection of Diodrast, Urokon, and Renografin. Injections of Diodrast and Urokon produced vasoconstriction, 70 per cent Urokon causing the most severe and prolonged effect. Renografin produced the least amount of vasospasm. Priscoline did not protect against the spasm. There was a suggestion that intra-arterial procaine gave some protection against vasoconstriction. (Moore, T. C., and others: *Use of Impedance Plethysmography in Evaluation of Peripheral Vascular Response to Arteriography, Surgery* 44: 345 (Aug.) 1958.)

MITRAL INSUFFICIENCY Surgical correction under direct vision using the pump-oxygenator was attempted in 13 patients with pure mitral insufficiency and in 4 with a mixture of stenosis and insufficiency. A right sided approach was used in 13 of the above because it permits a smaller incision with better exposure. If the mitral valve is maintained partially open, there is little danger of the ventricular action pushing air past the closed aortic valve. Because more information can be obtained about the functioning mitral valve, elective cardiac arrest is not desirable. In 4 of the subjects, postoperative left auricular pressures were reported and were markedly reduced compared to preoperative values. (Kay, E. B., and others: *Direct Vision Correction of Mitral Insufficiency, Surgery* 44: 325 (Aug.) 1958.)

BLEEDING TIME Refrigeration of blood for 10 minutes at 1 to 2 C. causes it to lose its normal hemostatic properties, not recoverable by heating to 37 C. Violent aeration of blood in air, by liberating CO₂ and driving the pH to the alkaline side, also renders blood non-hemostatic. Hemostatic action may be recovered by returning the liberated CO₂ to blood by shaking in atmospheric air containing 9 per cent CO₂. (Cruz, W. O., and Oliveira, A. C.: *Influence of Cooling and CO₂ Content of Blood on Bleeding Time, Proc. Soc. Exper. Biol. & Med.* 98: 461 (July) 1958.)

FROZEN RED BLOOD CELLS Blood collected in plastic bags is processed in a

closed-system Cohn centrifuge, red blood cells are separated from plasma and glycerol solution gradually added to the red blood cells to a final concentration of 50 per cent. The glycerolized red blood cells are then stored in the frozen state at either -80 C or -120 C. When ready for use the cells are deglycerolized, resuspended and stored at 4 C and used clinically. Even after storage at these low temperatures for periods up to 19 months, the red blood cells appeared therapeutically comparable to cells stored at 4 C up to 21 days in standard anticoagulant solution. Since sterility is maintained at every step, an additional post-thawing storage of the red blood cells for up to 11 days at 4 C is possible. No transfusion reactions of any kind were noted. (Tullis, J. S., and others: *Studies on the In Vivo Survival of Glycerolized and Frozen Human Red Blood Cells, J. A. M. A.* 168: 399 (Sept. 27) 1958, and Ketchel, M. M., and others: *Use of Biomechanical Equipment for the Long-Term Preservation of Erythrocytes, J. A. M. A.* 168: 404 (Sept. 27) 1958.)

SHOCK Artificial hibernation achieved by using the "lytic cocktail" abolishes the "non-harmonious" state characteristic of the body response to an injury. Neuroplegia by means of the lytic cocktail plus refrigeration (artificial hibernation) reduces the metabolic changes and the oxygen requirements of the body; thus increasing the chance for recovery even in cases of "irreversible shock" that have not improved with the usual treatment consistent in blood and plasma transfusions and vasopressor agents. With the exception of primary shock artificial hibernation seems to be worth a trial in the treatment of shock. (Govea, J., and others: *New Concepts on Pathologic Physiology of Shock and Its Treatment by Artificial Hibernation, Revista de la Confederacion Medica Panamericana* 3: 129 (April) 1956.)

HYPOFIBRINOGENEMIA The hemorrhages following abruptio placentae and surgery for cirrhosis of the liver are primarily due to afibrinogenemia caused by fibrinolysis. When low fibrinogen levels are encountered, the total profibrinolysin and inhibitor levels are also reduced. The profibrinolysin is activated in these cases, thus reducing the quan-

tity of precursor. The active fibrinolysin formed destroys the fibrinogen by intravascular hydrolysis and it is then itself rapidly denatured. The lability of the active enzyme makes it difficult to detect "in vitro." Many disease states such as cirrhosis of the liver, advanced carcinoma, benign prostate hypertrophy and infection appear to present their own patterns in the fibrinolytic enzyme system. These changes are probably secondary in nature. (Phillips, L. L., and Skrodellis, V.: *The Fibrinolytic Enzyme System in Normal, Hemorrhagic and Disease States*, *J. Clin. Invest.* 37: 965 (July) 1958.)

ARTERIOSCLEROSIS In a review of 3,360 autopsies in zoo mammals and 7,660 autopsies in zoo birds over a period of 40 years, arteriosclerosis has increased 10 to 20 fold. The social pressure of an expanding zoo population and also inactivity are considered major factors in this increase. This change has involved 45 families of birds. (Ratcliffe, H. L., and others: *Changing Frequency of Arteriosclerosis in Mammals and Birds at the Philadelphia Zoological Garden*, *Circulation* 18: 41 (July) 1958.)

MYOCARDIAL INFARCTION Preoperative diagnosis, type and extent of surgery and anesthesia were studied in 35 patients with postoperative myocardial infarction. Predisposing factors include arteriosclerotic and hypertensive cardiovascular disease, polycythemia, and emotional tension and anxiety. Precipitating factors include hypotension, shock (hemorrhagic), arrhythmias and tachycardia with poor coronary filling, respiratory depression and hypoxia, decreased venous return, postoperative absorption of toxic tissue degradation products with changes in blood viscosity, volume and coagulability, trend toward increased blood coagulability on seventh to tenth postoperative days characterized by increased thromboplastin activity and platelet count and increased tolerance to heparin. Differential diagnosis must include electrolyte imbalance, acute cor pulmonale, acute pericarditis, digitalis and quinidine effects, and knowledge that effect of vasopressor drugs can invert T waves. In addition to active treatment of myocardial infarction, prophylactic

use of anticoagulants should be used between the third to tenth postoperative day. (Feruglio, G. M., Bellet, S., and Stone, H.: *Postoperative Myocardial Infarction*, *A. M. A. Arch. Int. Med.* 102: 345 (Sept.) 1958.)

HEART BLOCK Chronotropic responses to *l*-epinephrine and levarterenol in dogs with chronic complete heart block produced surgically, produced a change in ventricular rate of the heart which was inversely related to the resting rate. Levarterenol was superior to *l*-epinephrine as a ventricular cardioacceleratory agent in the unanesthetized and anesthetized animals. It is believed that reflex activity of the A-V nodal pacemakers in some humans with complete heart block may account for differences in dog and man to responses of levarterenol. Pentobarbital transiently increased ventricular rate and persistently enhanced responsiveness to *l*-epinephrine and levarterenol. Hydrocortisone has no acute effect on the ventricular rate. Acidosis of either metabolic or respiratory origin slowed the resting ventricular rate and decreased the sensitivity to *l*-epinephrine and levarterenol. CO₂ decreased ventricular rate more than acidosis induced by hydrochloric acid. Alkalosis of metabolic or respiratory origin increased ventricular rate and enhanced responses to *l*-epinephrine and levarterenol. Prefibrillatory activity of the heart was commonly seen. (Boyer, S. H., and Chisholm, A. W.: *Chronotropic Responses to Sympathomimetic Amines in Experimental Complete Heart Block: The Influence of Pentobarbital, Hydrocortisone and Acid-Base Changes*, *Bull. Johns Hopkins Hosp.* 103: 47 (Aug.) 1958.)

EPINEPHRINE ESTIMATION As determined by a new sensitive fluorometric method concentrations of epinephrine and norepinephrine in normal human arterial plasma are 0.10 and 0.20 micrograms per liter respectively. The concentration of epinephrine in antecubital venous plasma is lower, and that of norepinephrine higher, than in arterial plasma due to the secretion of the latter from sympathetic nerves in the forearm. (Price, H. L., and Price, M. L.: *The Chemical Estimation of Epinephrine and Norepinephrine*