Ischemia Produced by General Anesthesia During Temporary Carotid Occlusion, Surgery 54: 216 (July) 1963.)

HOMOLOGOUS-BLOOD SYNDROME Extracorporeal circulation introduces large volumes of homologous blood into the patient's circulation and frequently results in a fall in plasma and red cell volumes that continues into the first postoperative day. Subsequently a substantial increase in both compartments occurs without a change in blood balance. When this phenomenon is not taken into account and large amounts of blood are given for postperfusion hypotension, with associated blood volume deficit, hypervolemia generally ensues. The conclusion is that the deficit represents sequestration of blood with subsequent desequestration of blood leading to a rise in blood volume. The implication is given that the lungs are a major site of sequestration. No attempt is made to maintain isotopic normovolemia after operation. Late blood loss is incompletely replaced in anticipation of desequestration. *(Litwak, R. S., and others: Homologous-Blood Syndrome During Extracorporeal Circulation in Man. II. Phenomena of Sequestration and Desequestration, New Engl. J. Med. 268: 1377 (June 20) 1963.)*

POSTPERFUSION SYNDROME Hemodilution perfusion techniques lessen the adverse effects of cardiopulmonary bypass upon the lung, as evidenced by lowered minimal surface tension and improved microscopic appearance. The addition of low molecular weight dextran to whole blood reduces pulmonary histological damage but does not increase the survival rate or lower the minimal surface tensions. The blood components were reduced to one-half the usual concentration while the electrolyte concentration was maintained at normal levels. No deleterious effects of profound hemodilution were noted either during the time of perfusion or in the following 24 hours, provided a small amount of pressor agent was added to the perfusate to prevent a serious drop in blood pressure upon initiation of perfusion. *(Hepps, S. A., and others: Amelioration of the Pulmonary Postperfusion Syndrome with Hemodilution and Low Molecular Weight Dextran, Surgery 54: 232 (July) 1963.)*

CARDIAC ARREST Effects of peripheral hypoxia on the dog's heart were evaluated at various levels of cardiac oxygenation by the use of two separate extracorporeal circuits. Cardiac hypoxia of 10 minutes duration induced during normal systemic oxygenation did not result in marked bradycardia or arrhythmia. Systemic hypoxia, however, caused moderate to severe bradycardia, nodal rhythm, and sometimes cardiac arrest even when normal myocardial oxygenation was maintained. These effects, which could be abolished by vagotomy, were more profound when systemic unsaturation was suddenly induced and were most deleterious if the heart was hypoxic as well. *(Austen, W. G., and others: Mechanism of Cardiac Arrest in Acute Hypoxia, Surgery 53: 784 (June) 1963.)*

DIRECT CURRENT DEFIBRILLATION Alternating current countershock was applied without success following fibrillation after myocardial infarction, whereas direct current electrical countershock was twice successful in this patient. Continued cardiac massage for periods in excess of three hours proved to be useful with restoration of consciousness despite lack of effective heart action. *(Stanzler, R. M., and others: Comparison of Countershock With Direct and Alternating Current in External Cardiac Defibrillation, New Engl. J. Med. 268: 1289 (June 6) 1963.)*

HYPOXIA Circulatory effects of breathing low concentrations of oxygen were studied in 10 anesthetized dogs. Simultaneous measurements were made of cardiac output and blood flow to the head, kidney and hind limb. Four experiments were performed with the addition of succinylcholine to inhibit the ventilatory response to hypoxia and maintain P_{CO_2} constant. Rise in cardiac output and mean arterial pressure occurred which was significantly correlated to the decrease in arterial oxygen saturation. Blood flow tended to increase during hypoxia in the regions studied but the responses were variable and only the change in renal blood flow had a significant correlation to arterial oxygen unsaturation. Systemic and regional vascular resistances during hypoxia varied both in direction and magnitude of change. Effects of hypoxia influence cardiac