transfusion of donor-blood during perfusion. Freshly collected donor-blood is preferred for perfusion. The patient perfused for 2½ hours developed abnormal bleeding due to fibrinogen destruction, but was successfully treated by the infusion of human fibrinogen. Plasma hemoglobin after perfusions of less than 1 hour was 50 mg. per cent or less. (*Rothnie, N. G., and others: Changes in Blood-Coagulation Due to Perfusion for Cardiac Surgery, Brit. J. Surg. 48: 272 (Nov.) 1960.*)

SHOCK Several factors which may contribute to circulatory collapse following cardiovascular surgery are blood loss, airway obstruction, partially relieved valvular obstruction, hemopericardium, ball valve thrombosis, dehydration, cardiac arrhythmias, reactivation of rheumatic carditis, myocardial infarction, and infection. Adequate management is dependent entirely on the correct diagnosis of the cause. (*Redo, S. F., and Arditi, L. I.: Causes and Treatment of Arterial Hypotension, Circulatory Collapse and Shock Following Cardiovascular Operations, Surg. Clin. N. Amer. 41: 309 (Apr.) 1961.*)

HEMORRHAGIC SHOCK Hepatic metabolism and hemodynamics have been studied in a series of unanesthetized dogs whose major hepatic vessels had been previously catheterized. Two types of hemorrhage were studied. Blood was suddenly or acutely withdrawn in one group of dogs in amounts sufficient to lower blood pressure to 60 to 40 mm. of mercury. These findings were compared with those from another group of dogs following slow, protracted hemorrhage. After hemorrhage there was a progressively increasing hepatic glucose output, hepatic potassium output, and hepatic sodium uptake, and an increased hepatic venous resistance. The latter was intensified after retransfusion of the withdrawn blood. In previous studies, the authors had found that comparable conditions were produced by the infusion of epinephrine to unanesthetized dogs and also that the adrenal gland output of catechol amines was increased by hemorrhage. This suggests that many of the hepatic, metabolic, and hemodynamic effects that follow hemorrhage are mediated by epinephrine. (*Shoemaker, W. C., Walker, W. F., and Turk, L. N.: Role of Liver in Development of Hemorrhagic Shock, Surg. Gynec. & Obstet. 111: 327 (Mar.) 1961.*)

TRANSFUSION THERAPY If a transfusion reaction is suspected 20 ml. of venous blood should be drawn, and a specimen of urine collected. The blood should be utilized in the following tests: (1) complete blood grouping and cross-matching using pretransfusion and post-transfusion samples from the recipient and the donor blood from the container; (2) direct Coomb's test on the red cells of the recipient; (3) testing of the recipient serum against the panel of known group O cells to determine the presence and specificity of any antibody; (4) estimation of free hemoglobin and serum bilirubin in the post-transfusion sample from the recipient and the recipient's urine; (5) Gram stain and culture from the original container if available. (*Grove-Rasmussen, M., Lesses, M. F., and Anstall, H. B.: Transfusion Therapy (concluded), New Engl. J. Med. 264: 188 (May 25) 1961.*)

HYPOTHERMIA Ventricular fibrillation occurring during the combined use of extracorporeal circulation and hypothermia in dogs is easily reversible when controlled by a pump oxygenator. Its occurrence does not necessarily indicate anoxemia or myocardial damage. Recovery of normal ventricular function is not altered by cold combined with 10 to 60 minutes of myocardial ischemia at temperatures of 7 C. Studies reveal that effective heart action ceases at 25 C. Others reveal that potassium-magnesium-prostigmine cardioplegia appears to be a safe technique. (*Sealy, W. C., and others: Observations on Heart Action during Hypothermia Induced and Controlled by Pump Oxygenator, Ann. Surg. 153: 597 (May) 1961.*)

HYPOTHERMIA Observations on the distribution of infused potassium in dogs in moderate hypothermia (mean temperature 27.9 C.) indicate that there is probably no remarkable alteration in the exchange of potassium in the hypothermic state. Probably there is a net loss of potassium from the cells as hypothermia progresses. Although the se-

quence of events in death from potassium intoxication is essentially the same in normal and hypothermic dogs, the lethal blood potassium level is significantly lower in hypothermic animals. (*Hoff, H. E., and others: Potassium Distribution and Toxicity in Hypothermia, J. Appl. Physiol. 16: 250 (Mar.) 1961.*)

HYPOTHERMIA Cats, rabbits and dogs in anesthesia were cooled to obtain a rectal temperature of 24-26 C. Reflex regulation of the vascular tonus was studied by means of stimulation of receptors in the carotid sinus, respiratory tract, urinary bladder, and also of sciatic, vagus and aortic (in cats and rabbits) nerves before and during hypothermia, and, in some cases, after return of body temperature to normal. In hypothermia there is a considerable fall in arterial pressure and an increase in pulse pressure. Vascular reflexes are markedly diminished. They are completely abolished when the animals are cooled to 20 C. Depressor reflexes are inhibited more profoundly and sooner than pressor ones. Experimental cooling of the isolated carotid sinus to 20-26 C. proved that sensitivity of carotid sinus receptors to various chemical stimuli (adrenaline, acetylcholine, nicotine) and to changes of intravascular pressure was not diminished but, on the contrary, increased. These findings suggest that changes of enteroreceptive vascular reflexes in hypothermia cannot be explained by a diminished receptor susceptibility. (*Kondratovich, M. A.: Reflex Regulation of Vascular Tonus in Hypothermia, Byull. Eksper. Biol. i Med. 50: 75, 1960.*)

EMERGENCY RESUSCITATION Never discontinue direct artificial respiration in favor of performing external cardiac compression alone. It is far more likely that direct artificial respiration alone will revive an unconscious victim than external cardiac compression alone. Cardiac resuscitation by any method does not provide adequate pulmonary ventilation, and airway resuscitation should form at least fifty per cent of any resuscitation procedure if suffocation or critical myocardial depression is the prime reason for a rescue attempt. (*Dobkin, A. B., and others: Emergency (On the Spot) Resuscitation of Collapse Using Direct Artificial Respiration (D.A.R.) and External Cardiac Compression (E.C.C.), Canad. Med. Ass. J. 84: 889 (Apr. 22) 1961.*)

RESUSCITATION The efficacy of mouth-to-nose breathing was studied in twelve psychiatric patients undergoing routine electroconvulsive therapy. Technique of inflating the convulsing patient should consist of three essential points: (1) Hyperextension of the head must be established and maintained. (2) After maximal inspiration, the rescuer must secure a seal around the victim's nose that will remain air-tight as he applies maximal pressure. (3) The rescuer holds the inflating pressure as gas is delivered intermittently between glottic spasms, until he senses that he has emptied a large tidal volume from his own lungs. He then releases contact to allow the patient to exhale while he, the rescuer, takes his next breath. The use of the nose as the route of inflation solves the problem of safe access to the patient's upper airway during a seizure. Further, nasal inflation minimizes the risk of regurgitation and pulmonary aspiration of gastric acid by virtue of the lesser tendency to overinflate the stomach. (*Elam, J. O., and others: Mouth-to-Nose Resuscitation During Convulsive Seizures, J. A. M. A. 176: 565 (May 20) 1961.*)

AIRWAY PATENCY Cinefluorographic techniques were used in human subjects anesthetized to apnea with thiopental in order to locate the sites of upper airway obstruction during artificial respiration by mouth-to-mouth and mouth-to-nose methods. Proper hyperextension of the head produces wide clearance between the base of the tongue and the posterior pharyngeal wall, thus effectively opening the upper airway. Hyperextension is properly achieved by backward pressure with one hand on the frontal region or vertex and upward traction with the other hand on the chin. The use of both hands in this way produces maximal tilt, and at the same time pulls up the mandible, bringing the tongue with it. (*Greene, D. G., and others: Cinefluorographic Study of Hyperextension of the Neck and Upper Airway Patency, J. A. M. A. 176: 570 (May 20) 1961.*)

CARDIAC MASSAGE Since ventilation is as important in cardiac resuscitation as cir-