

early, in anesthesia administration. This finding indicated an adaptation to halothane anesthesia. The changes noted during induction in healthy, normal subjects should be transferred with caution to the situation prevailing in the operating room. (Smith, N. T., and others: *Cardiovascular Effects of Halothane in Man*, J.A.M.A. 206: 1495 (Nov.) 1968.)

ANTIDIURETIC HORMONE Intravascular distribution of blood was altered by thermal and positional change without concurrent changes in plasma osmolality to test the thesis that, in man, alterations in filling in certain portions of the intravascular compartment influence the release of antidiuretic hormone (ADH). Position and ambient-temperature changes were utilized to stimulate possible alterations in ADH levels. These levels increased from a mean value of 0.4 units supine to 1.4 units sitting to 3.1 units standing. Intense heat raised these levels from 1.6 to 5.2 units, while cold lowered ADH levels to 1.0 unit. The serum sodium and osmolar concentrations remained constant during all studies. Changes in activity of intrathoracic stretch receptors, in response to redistribution of blood, alter ADH secretion independently of changes in serum osmolality. The rapidity of change in blood ADH concentration indicates great sensitivity and a prime functional role for the volume receptors in the regulation of ADH secretion. (Segar, W. E., and Moore, W. W.: *The Regulation of Antidiuretic Hormone Release in Man*, J. Clin. Invest. 47: 2143 (Sept.) 1968.)

CENTRAL VENOUS PRESSURE The effects of blood-volume changes on central venous pressure (CVP) were studied in post-hemorrhagic shock in which the modifying influence of the reflex-induced excess venous tone on the CVP was abolished by the use of an alpha-adrenergic blocking, phenoxybenzamine. CVP measurement was superior to the mean arterial pressure because it related the blood volume to cardiac function. Moreover, interpretation of the CVP is not vitiated by the use of vasoactive agents in the presence of alpha-adrenergic blockade. CVP monitoring also helps detect occult hypovolemia that has been masked by increased

venous tone in an attempt to compensate for the hypovolemia. (Ranganathan, N., and Phillips, J. H.: *Central Venous Pressure and Blood Volume Determinations after Alpha-Adrenergic Blockade in Experimental Post-hemorrhagic Shock in Dogs*, Surgery 64: 1140 (Dec.) 1968.)

VENOUS PRESSURE Central venous pressure was monitored in healthy individuals during spinal anesthesia. In 60 per cent of patients hypotension (25 per cent reduction of blood pressure) followed administration of the spinal block. The CVP did not accurately reflect arterial pressure; 40 per cent of those with hypotension had unchanged CVP values, and 40 per cent of those who had decreased CVP did not have arterial hypotension. Factors which may affect the arterial and venous pressure changes include incomplete sympathetic blockade, variations in spinal level, age, posture, hydration, and changes in intrathoracic pressure. There was no consistency in patient responses to these factors. (Graves, C. L., and Klein, R. L.: *Central Venous Pressure Monitoring during Routine Spinal Anesthesia*, Arch. Surg. 97: 843 (Dec.) 1968.)

CARDIOGENIC SHOCK Mortality with myocardial infarction with shock averages 70 to 80 per cent. Because medical therapy is of limited value, mechanical assistance of the failing heart is being tried. Methods include cardiopulmonary bypass, venoarterial pumping, and bypass of the left side of the heart with a metal cannula. Each method has serious drawbacks. Another method is to withdraw blood from the distal aorta during systole to reduce ventricular work, and to re-inject it during diastole to increase coronary perfusion. This is called counterpulsation, diastolic augmentation, or orthophasic postsystolic myocardial augmentation. This method has been of some value but requires bilateral femoral arteriotomy and is often associated with excessive hemolysis. The intra-aortic balloon pumping is simpler, safer and more effective than other methods of counterpulsation. (Talpins, N. L., Kripke, D. C., and Goetz, R. H.: *Counterpulsation and Intra-aortic Balloon Pumping in Cardiogenic Shock*, Arch. Surg. 97: 991 (Dec.) 1968.)