

CARDIAC ARREST Cardiac arrest is an occasional complication of nasotracheal aspiration performed in a postoperative patient for the treatment of retained tracheobronchial secretions. Although vagal stimulation alone may not cause cardiac irregularities, such stimulation in the presence of hypoxia and during the sudden reversal of hypercarbia may produce cardiac arrhythmias and even cardiac arrest. Experimental studies have demonstrated that endogenous carbon dioxide can accumulate to dangerously high levels in relatively short periods. A rapid reversal of this results in a sudden, precipitous fall in carbon dioxide tension, with a concomitant rise in pH and plasma potassium level. The transient increase in potassium concentration coincides with the period of maximal electrocardiographic abnormality. Since patients requiring nasotracheal aspiration for airway obstruction may be both hypoxic and hypercarbic, suction periods should be brief (less than five seconds), and oxygen should be administered simultaneously. (*Fineberg, C., Cohn, H. E., and Gibbon, J. H.: Cardiac Arrest During Nasotracheal Aspiration, J. A. M. A. 174: 148 (Sept. 24) 1960.*)

VENTRICULAR TACHYCARDIA The intravenous injection of epinephrine (0.01 cc./kg.) in 54 attempts in the dog during ventricular ectopic tachycardia failed to produce ventricular fibrillation. The tachycardia was slowed down or moderately increased in most experiments. (*Scherf, D., Tanner, D., and Yildiz, M.: Effect of Epinephrine on Experimental Ectopic Ventricular Tachycardia, Proc. Soc. Exp. Biol. Med. 105: 30 (Oct.) 1960.*)

AURICULAR DEFIBRILLATION By the action of an electrical device on the heart to produce defibrillation of the atrium during mitral commissurotomy, in 3 patients the fibrillation ceased, although it had lasted continuously for several years. The contractions of the heart became rhythmic and slower; the atrium participated in the contractile activity (a P wave appeared in the ECG), and the pulse deficit disappeared. The clinical importance of the defibrillation method is obvi-

ous: the most dangerous period for the patients—the immediate postoperative period—is associated with regular rhythmic and efficient activity of the heart. Under these circumstances there is much less strain on the heart and the general condition of the patients is thereby improved. (*Vishnevskii, A. A., Tsukerman, B. M., and Smelovskii, S. I.: Elimination of Auricular Fibrillation by Method of Electrical Defibrillation of Atrium, Klin. Med. 37: 26, 1959.*)

VENOUS RETURN Blood returns to the heart because of the existence of a venous pressure gradient of 3 to 4 mm. of mercury, operant between the reactive venous reservoir and the central venous conduit. Augmentation of sympathetic tone produces an increase in venous return due to an increase in the effective "intravenous" pressure gradient from 3 to 4 mm. of mercury to 5 to 10 mm. of mercury. The venous system has the ability to independently increase venous return. The venous system can serve as a buffer against the effects of sudden momentary changes in arterial flow by maintaining, reducing, or augmenting venous return. (*Bartelstone, H. J.: Role of Veins in Venous Return, Circulat. Res. 8: 1059 (Sept.) 1960.*)

VENOUS PRESSURE Distention of the urinary bladder by instillation of 50 cc. of fluid into an empty bladder produces an increase in venous pressure and venomotor tone as determined by measurements on intact isolated superficial venous segment of the forearm in man. Such a response could be eliminated by a regional procaine block. It was found to be absent in a patient with a complete transection of the spinal cord. It is concluded that bladder distention initiates a spinal venomotor reflex producing an increase in the peripheral venous tone in the superficial veins of the forearm of man. (*Burch, G. E., and DePasquale, N.: Effect of Bladder Distention on Venous System of Man, Proc. Soc. Exp. Biol. Med. 105: 173 (Oct.) 1960.*)

ELECTROENCEPHALOGRAM The usefulness of the electroencephalogram in detect-

ing cerebral venous obstruction (superior vena cava) is emphasized by the presentation of six case histories. The EEG is probably the most sensitive and rapid indicator of the onset of venous obstruction. Signs suggestive of cerebral hypoxia suggest superior vena caval obstruction and the surgeon should be so informed by the anesthesiologist so that the obstruction may be corrected. (*Paton, B., Pearcy, W. C., and Swan, H.: Importance of Electroencephalogram during Open Cardiac Surgery with Particular Reference to Superior Vena Caval Obstruction, Surg. Gynec. Obst.* 111: 197 (Aug.) 1960.)

CAROTID BLOOD FLOW Quantitative and directional flow in the carotid systems of man were studied by means of a non-cannulating electromagnetic flowmeter. Following occlusion of the common carotid artery, blood flowed from the external to the internal carotid artery in 50 per cent of the cases, but the reverse was observed in the remaining 50 per cent. Head position and occlusion of the opposite carotid artery were each shown to have a pronounced effect upon the flow through the internal carotid artery. Studies on the effect of contralateral percutaneous carotid compression suggest that in acute situations a compensatory mechanism exists whereby flow through one carotid artery increases when that through the other is diminished. (*Hardesty, W. H., and others: Studies of Carotid-Artery Blood Flow in Man, N. Engl. J. Med.* 263: 944 (Nov.) 1960.)

CEREBRAL VASO-DYNAMICS Observations made through a "window" in the skull have shown that anaemia through blood loss leads to dilatation of the arterial and constriction of the venous bed: ligation of arteries supplying the brain or acute impairment of respiration cause dilatation of both the arteries and veins on the surface of the brain. Stimulation of the sympathetic nerve is accompanied by a fall of intracranial CSF pressure and marked diminution of cerebral volume with simultaneous dilatation of the venous bed. Administration of aminophyllin causes dilatation of the superficial cerebral arteries and intracerebral capillaries, leading to improved blood supply to nerve cells;

serpasil causes dilatation of both arteries and veins. Diagnosis of "cerebrovascular spasm" does not correspond to anatomical data since complete occlusion of even one intracerebral artery leads to death of the nerve cells and occlusion of large arteries produces focal necrosis. Transitory neurological signs taken to be the result of "cerebrovascular spasm" are most likely to be caused not by complete occlusion of the lumen but by strong constriction of the cerebral capillaries resulting from disorders of neuronal and humoral vasodilating innervation. (*Klosovskii, B. N.: General Problems of Pathology and Physiology of Cerebral circulation, Vestn. Akad. Med. Nauk SSSR* 7: 3, 1959.)

AORTIC COARCTATION Paradoxical postoperative hypertension immediately following resection for coarctation of the aorta is probably due to reflexes from aortic and carotid pressor receptors which were set at a high level preoperatively, and after surgery, with tension in the aortic wall reduced, may cease to act as buffers. Necrotizing arteritis is seen mainly in arteries below the site of coarctation and seems related to postoperative hemodynamic changes and the not infrequent delayed type of hypertension. (*March, H. W., Hultgren, H., and Gerbode, F.: Immediate and Remote Effects of Resection on Hypertension in Coarctation of Aorta, Brit. Heart J.* 22: 361 (June) 1960.)

LOCALIZED HYPOTHALAMIC STIMULATIONS By use of the Harsley-Clarke stereotaxic technique, a series of cats were subjected to hypothalamic electrical stimulation, chiefly in lateral and posterior positions. Electrocardiographic changes noted were marked alterations in QRS and T waves, bigeminal and trigeminal rhythms, A-V dissociation, extrasystoles, paroxysmal nodal and ventricular tachycardia, and the Wilson-Wolff-Parkinson-White configuration. (*Weinberg, S. J. and Fuster, J. M.: Electrocardiographic Changes Produced by Localized Hypothalamic Stimulations, Ann. Int. Med.* 53: 332 (Aug.) 1960.)

SHOCK With the aid of a newly devised technique employing a photoelectric drop-