

tures of levarterenol and phentolamine in ratios of 4:5 up to 4:40 mg. per liter show the same pressor effect in normotensive subjects as levarterenol alone. These same mixtures when given subcutaneously do not result in ischemic necrosis. Several patients in shock treated with such mixtures displayed a satisfactory pressor response with other evidence to show that addition of phentolamine levarterenol mixtures does not impair the efficiency of the levarterenol as a pressor amine. Such mixtures are useful in preventing complication of ischemic slough during levarterenol therapy. (Zucker, G., and Levine, J.: *Pressor and Diminished Local Vasoconstrictor Effects of Levarterenol-Phentolamine Mixtures*, *Arch. Internal Med.* 104: 607 (Oct.) 1959.)

**NOREPINEPHRINE** Serious arrhythmias appearing during treatment of cardiogenic shock with norepinephrine may be a function of the degree of atherosclerotic involvement of the heart and coronary circulation. This study undertook to produce gross and microscopic atherosclerotic changes and to evaluate the functional effects on the heart of epinephrine and norepinephrine. Results showed that cholesterol fed rabbits up to 38 weeks showed no significant anoxic electrocardiographic changes. Injections of epinephrine 100-500  $\mu$ g. ranges produced ventricular arrhythmias and on occasion ventricular fibrillation in normal and high fat fed animals. Following norepinephrine in 100-200  $\mu$ g. range, tachycardias were seen only in fat fed animals, but with higher doses, 500-1,000  $\mu$ g. dosage ranges similar changes were seen in both groups. Norepinephrine under these circumstances induced characteristic anoxic ST-T electrocardiographic changes, but no instances of ventricular fibrillation. Perfusion studies of isolated hearts showed decreased contractility and reduced responses to epinephrine and norepinephrine in high fat fed animals. (McLville, K. I. and Shister, H. E.: *Cardiac Responses to Epinephrine and Norepinephrine during prolonged Cholesterol and High Fat Feeding in Rabbits*, *Am. J. Cardiol.* 4: 391 (Sept.) 1959.)

**NEUROBLASTOMATA** Three patients were found, on radiological or histological evi-

dence, to have neuroblastomas which secreted norepinephrine, normally only secreted by mature chromaffin cells or tumors arising therefrom (and postganglionic fibers of the sympathetic nervous system). Neuroblastomas though composed of cells less differentiated and mature than chromaffin cells, and not on the same direct line of development, do arise from the same primordial cell type. (Isaacs, H., and Medalie, M.: *Noradrenaline-Secreting Neuroblastoma*, *Brit. M. J.* 1: 401 (Feb. 14) 1959.)

#### POSITIVE PRESSURE BREATHING

The effect of intermittent positive pressure breathing on the distribution of inspired air, and the number and types of ventilating spaces was measured in patients with pulmonary emphysema and pulmonary heart disease. Patients with pulmonary heart disease had a 100 per cent increase in functional residual capacity, and four to six spaces of ventilation. The poorly ventilated spaces comprised more than 50 per cent of the whole. During intermittent positive pressure breathing, these values decreased sharply and approached normal. Concomitantly, arterial oxygen tension was increased and carbon dioxide tension was reduced. Intermittent positive pressure breathing thus improves alveolar ventilation in these patients by improving distribution of inspired air and by decreasing the poorly ventilated spaces. (Torres, G. E. and Lyons, H. A.: *Intermittent Positive Pressure Breathing in Patients with Pulmonary Heart Disease: Its Effect on Distribution of Inspired Air*, *Bull. New York Acad. Med.* 35: 751 (Nov.) 1959.)

#### HYPERVENTILATION DURING ANESTHESIA

Crile believed that the loss of consciousness alone was not sufficient to protect patients from the reflex effects of painful stimuli during surgery. Yet nitrous oxide (70 per cent) and *d*-tubocurarine has been used frequently as the sole anesthetic agents in accidents or surgical procedures. Absolute muscle flaccidity and effective control of the respiration is necessary. This combination provides no more than mere unconsciousness. In order to explain why this technique works, electroencephalographic tracings and estimation of blood pH were obtained during anesthesia.