

dominal surgery because of major and minor reactions observed during and following operation. These reactions were believed to be due to stimulation of unblocked autonomic nerves. A local anesthetic block of hypogastric, splanchnic or vagal nerve plexuses is advocated to supplement the light general anesthesia. (Loder, R. E.: *Inadequacy of General Anesthesia for Abdominal Operations, Lancet* 2: 468 (Sept. 7) 1957.)

**ELECTRIC SHOCK** Psychiatric patients who have received electric shock treatments without adequate anesthesia, dread and avoid the treatments and dislike the procedure so much that they pass on their fear to patients and relatives. Using intravenous 2 per cent thiopental (.2–.36 Gm.) followed recently by intravenous succinylcholine (30–40 mg.), the author has successfully conducted 10,000 shock treatments on 750 inpatients and outpatients without arousing fear in the patients or personnel. Oxygen inhalation administered by a resuscitator precedes and follows the seizure. (Brownell, I. O.: *Electric Shock Treatment Without Fear, South. M. J.* 50: 943 (July) 1957.)

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The following are abstracts of articles appearing in the Annals of the New York Academy of Sciences 66: 955–976, 983–1010 (April), 1957.

### FLUIDS AND ELECTROLYTES

(Roberts, K. E., and others: *Respiratory Alkalosis*.) The three stages of respiratory alkalosis are: (1) an initial loss of carbonic acid resulting in an elevation of pH; (2) compensatory metabolic changes tending to restore the pH involving a decrease in bicarbonate ions and an increase in chlorides, ketones and lactic acid; and (3) formation of fixed acids and the loss of bicarbonate. Other electrolyte alterations due either to intracellular shifts or to increased renal excretion are hypokalemia, hypophosphatemia and hyperchloremia. In contradistinction to metabolic acidosis mental and neurological changes (dizziness, paresthesias, slurring of speech, and clonus) are prominent findings. Treatment includes carbon dioxide

inhalation; oral or intravenous potassium, phosphate and bicarbonate; and if ammonium intoxication has occurred, sodium glutamate may be useful.

(Harris, J. S.: *Special Pediatric Problems in Fluid and Electrolyte Therapy in Surgery*.) The problems of infant fluid and electrolyte replacement discussed are: small size of patients, variation in the surface area to body-size ratio; effects of growth and immaturity of organ systems, changing resistance to stress, and peculiarities of premature newborns. Fluid and electrolyte maintenance requirements are best related to surface area (1,500 cc. of fluid, 30 mEq. sodium, 25 mEq. potassium, 25 mEq. chloride, and 75 Gm. carbohydrate/square meter/day). Fluid and electrolyte replacement therapy is best adjusted to weight. Preoperatively the child should be awakened to maintain his preoperative fluid and carbohydrates as long as possible. Parenteral therapy should be reserved for situations that threaten life. Corrections back to normal are made slowly, allowing the child's own homeostatic mechanisms to make the final adjustments.

(Cooper, B. M.: *Contribution of Radioactive Isotopes to the Study of Electrolyte Balance in Surgery*.) Most patients in the postoperative period will show some decrease in exchangeable potassium ions, which is rapidly corrected with the resumption of a normal diet. In many conditions (starvation, cirrhosis, and Addison's disease) the exchangeable potassium may be reduced as much as 50 per cent without a decrease in serum potassium.

**HYPOTENSION** (Patrick, R. T.: *Relationship of Anesthetic Agents to Hypotension*.) Estimation of blood pressure is one of the few useful measurements of circulatory efficiency readily available. It is a resultant of two factors, cardiac output and peripheral resistance, which themselves are subject to many influences. Cardiac output supplies the needs of the whole organism, while peripheral resistance influences the distribution of the cardiac output. A decrease in cardiac output appears to be an inevitable concomitant of

the anesthetic agents now in use. The degree to which this is compensated for by alterations in peripheral resistance seems to vary both with the anesthetic and the depth of anesthesia.

(*Burstein, C. L.: Adrenocortical Insufficiency during Surgical Anesthesia.*) Although the establishment of anesthesia results in an increased plasma concentration of 17 hydroxycorticosteroids, the eosinophil count does not decrease significantly. After the effects of anesthesia are dissipated, an eosinopenia develops in most patients studied. The inference drawn is that the traumatic stimuli of surgical intervention are blocked by the anesthetic and become apparent only upon emergence from anesthesia. In patients with natural or iatrogenic hypoadrenalism preparation with adrenal corticoids is stressed.

(*Aviado, D. M., Jr.: Hypotension and Autonomic Nervous System.*) The cardiovascular reflexes are reviewed in terms of reflexes which cause hypotension and those which compensate for the hypotension initiated by any cause. The baroreceptor reflexes arising from the carotid sinus, and the aortic arch, by causing tachycardia and vasoconstriction, are responsible for the return of the blood pressure. In all instances of hypotension, the primary concern is the correction of the initiating cause. When it is not readily removable (high spinal, ganglioplegies) sympathomimetic amines are ideal for bringing about a rise in aortic blood pressure.

(*Zweifach, B. W., and Hershey, S. G.: Protective Mechanisms in Shock.*) Resistance to shock in animals can be induced by pretreatment with autonomic blocking drugs or certain antibiotics and by increasing the tolerance of the host through repeated exposures to sublethal trauma or bacterial endotoxins. Resistance is characterized by the absence of vascular de-

compensation and pathology in the liver and bowel. However, since "irreversible" shock can be induced in the absence of significant bowel and liver disease it appears that a decisive factor or factors have not yet been identified.

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**EUROPEAN FEDERATION** An European Federation of Anesthesiologists has been founded with the following aims: friendly union of the united societies and their members, exchange of information, study of the duties and interests of anesthesiologists, and discussion of professional problems. The following questions shall be studied by the Federation: legal responsibility of the anesthesiologist, standardization of anesthesia machines and creation of reserves in cases of catastrophes. The board of administration consists of: President: S. Brena (Turin), Vice Presidents: S. Couremenos (Athens); R. Frey (Heidelberg); P. Jaquenoud (Marseilles). General Secretary and Treasurer: G. Bovay (St. Sulpice, Vaud, Switzerland). The Federation will publish "European Anesthesiology" ("Anesthesiologie Européenne"), edited by Dr. P. LaCombe, Issoudon (Indre), France.

**MORAL POSITION** The qualified specialist of anesthesiology is granted all powers for the softening of pain and the procedures of anesthesia—even at the risk that by this treatment the life of the patient might be shortened accidentally. Today there is no more a moral obligation to endure pain as "God's will" since we have relatively safe drugs and specialists conscious of their responsibility. (*Pope Pius XII: Anesthesia and Human Personality, Anaesthetist 6: 197, 1957.*)

This public recognition of our profession from the theological and philosophical point of view helped vitally to fix the moral position of the anesthesiologist in continental Europe.