

THE ANESTHESIOLOGIST'S BOOKSHELF

HUBERTA M. LIVINGSTONE, M.D., *Editor*

Cardiovascular Collapse in the Operating Room. By HERBERT E. NATOF, M.D., Assistant in Anesthesia, University of Illinois College of Medicine, and MAX SADOVE, M.D., Professor of Surgery (Anesthesiology), University of Illinois College of Medicine, Chicago. Foreword by WARREN H. COLE, M.D. Cloth \$6.00. Pp. 197, with 23 tables and 15 illustrations. Published by J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1958.

This interesting monograph is a detailed summary of the problem of cardiovascular collapse (a terminology which the authors quite rightfully prefer to the ambiguous catch-all phrase "cardiac arrest"), particularly as it pertains to anesthesia and operation. The primary thesis is that there are almost always multiple predisposing and precipitating factors associated with cardiovascular collapse which occurs in the operating room, and that all such factors must be anticipated and rectified if tragedy is to be avoided.

The first chapter emphasizes the lack of a uniformly accepted definition for the term, "cardiac arrest," and the impossibility of comparing data based on this term for that reason. Chapter 2 is a fascinating review of the published reports of cardiovascular collapse in the operating room during the periods 1920 to 1942 and 1943 to 1956. In the former period, preoperative shock and serious infection were significant factors associated with cardiovascular collapse in the operating room; while in the latter period, due to the great increase in the number of intrathoracic surgical procedures, preoperative heart and pulmonary disease and operative hemorrhage have become the leading predisposing factors to cardiovascular collapse. The third chapter is an extensive review of the pathophysiologic states (hypoxia, hypercarbia, hypovolemia, anemia, hypotension, electrolyte disturbances, and certain reflexes) which appear to influence the operative and anesthetic course of the patient unfavorably, and the role of anesthetic agents in producing undesirable cardiovascular effects. Chapter 4 consists of an analysis and the protocols of the 33 cases of "cardiac arrest" occurring in the author's own hospitals over a two and one-half year period: ether over-dosage (3 cases), toxic reaction to local agents (2 cases), hypoxia due to airway obstruction (4 cases), high spinal or epidural block (3 cases), excessive medication (1 case), reflex inhibition of the heart (2 cases), hypovolemic states—acute or chronic (8 cases), moribund states (3 cases), miscellaneous and unknown causes (4 cases), and "arrest" associated with neither surgery nor anesthesia (3 cases). The fifth chapter details the prevention of cardiovascular collapse in the operating room, particularly the preoperative preparation of the patient and the proper conduct of anesthesia. The final two chapters outline the methods of diagnosing and treating cardiovascular collapse when it does occur in the operating room.

There has been a virtual torrent of literature on the subject of "cardiac arrest" during the past decade or so, and a number of anesthesiologists will find that much of the material in this book is quite familiar to them. Some will question certain statements (i.e., the advocacy of rapidly induced anesthesia and apnea by the administration of intravenous barbiturate and muscle relaxant in the presence of a full stomach). However, the material is well organized and comprises an adequate review of the subject. The resident in training in anesthesiology and the occasional anesthetist will learn a great deal from this small book. It should be required reading for all surgeons, internists, cardiologists, pediatricians, and other physicians involved in the preoperative preparation or postoperative care of today's surgical patient.

DAVID M. LITTLE, JR., M.D.

Tracheotomy: A Clinical and Experimental Study. By THOMAS G. NELSON, M.D., M.C., U.S.A.R. Cloth \$3.75. Pp. 111, with 47 illustrations. The Williams & Wilkins Company, Mount Royal and Guilford Avenue, Baltimore 2, Maryland, 1958.

Inasmuch as anesthesiologists are continually faced with problems of airway maintenance, it appears inevitable that a few will be forced to perform tracheotomy as an

emergency procedure. Review of this small volume may make it possible for these few to perform it reasonably well.

The author, a military surgeon, presents a complete historical background of tracheotomy with an extensive bibliography. The following section is devoted to a detailed report of 310 tracheotomies performed on 300 patients by various techniques and individuals. Complications and deaths are analyzed in detail. His statistics demonstrate an increase in the numbers of tracheotomies performed for the management of secretions.

An experimental study of tracheotomy in dogs is reported in which an attempt was made to determine the best technique and location, in order that post-tracheotomy stenosis might be minimized. Although not conclusive, the data suggest that the more easily performed cricothyroidotomy should be avoided, the standard lower tracheotomy being preferable.

The author describes a technique and location based upon his clinical experience and experimental study. He recommends a low transverse incision, resection of a small portion of anterior tracheal cartilage and division of the thyroid isthmus when indicated. He stresses the importance of post-tracheotomy management including proper techniques for aspiration of secretions, care of the cannula, and humidification of the inspired air.

ROBERT T. PATRICK, M.D.

British Medical Bulletin. Volume 14, No. 1, January 1958. Paper \$3.25 U.S.A. and Canada. Pp. 72, with 40 illustrations and tables. Published by the Medical Department, The British Council, 65 Davies St., London W 1, England.

This issue of the *British Medical Bulletin* is devoted entirely to anesthesia. Seventeen articles by recognized authorities on both accepted and controversial subjects provide a wealth of information.

The articles entitled "Biochemical Disturbances Associated with Anesthesia," "Myoneural Blocking Action of Anesthetic Drugs" and "Electrographic Monitoring of Anesthesia" are extensive and excellent reviews of the literature.

Epstein in his article, "Principles of Inhalers for Volatile Anesthetics," deplores the fact that calibration of vaporizers used in anesthesia has been ignored by manufacturers of anesthesia equipment in contrast to flowmeters and syringes filled with accurate concentration of drugs. With characteristic clarity he presents the essential physical requirements of accurate vaporizers, most timely in view of the introduction of Fluothane.

"Carbon Dioxide Homeostasis in Anesthesia," "Muscle Relaxants," "Neonatal Anesthesia" and "Hypothermia in Surgery" are concise and informative articles on these specific subjects.

The advantages and disadvantages of controlled hypotension are discussed in two articles written respectively by an advocate and a skeptic. Both fail to point out that this technique can be successful only if accompanied by complete surgical cooperation. This technique is not as popular in the United States as it is in Great Britain.

The article on "Obstetrical Anesthesia" will not meet the approval of many readers in the United States. There is a fundamental difference of opinion on this subject on either side of the Atlantic. An anesthesiologist who states, "Spinal and extradural methods are specialized techniques carrying inherent risks of grave complications," is exposing lack of experience.

Other articles cover the following subjects: "Anesthetics and Mechanical Receptors," "Anesthesia in Burns," "Treatment of Respiratory Inadequacy," "Rebreathing in Anesthetic Systems" and "Deaths and Anesthesia."

There is a pertinent introduction by Dr. John Gillies, who stresses the real necessity now and in the future for an extensive knowledge of the basic sciences in anesthesiology training and practice. This publication is recommended to all anesthesiologists and particularly to those who are under the imminent shadow of oral examinations.

RAYMOND F. COURTIN, M.D.