

ANESTHESIA
FOR INFANTS AND CHILDREN

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With 182 illustrations

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FOREWORD

During the past decade surgery has made important strides in providing safer and improved methods for handling various problems in infancy and childhood, indeed now making it possible to correct some conditions which were previously thought to be entirely hopeless. Many factors have contributed to these dramatic advances in pediatric surgery. Outstanding among them is the work of anesthesiologists who have focused on the field and have provided well-standardized procedures for carrying small and critically ill patients through operations on literally all portions and every system of the body. The surgeon realizes that his chances for success or failure are determined in great measure by the capabilities of the person at the head of the table who is administering the anesthetic.

In some medical circles there seems to be an attitude that the surgical operator is managing the show; in others, the anesthetist has an overly possessive feeling toward the patient. Neither approach is proper. It is best for each to be cognizant of his own problems and also to know of the other's difficulties; both must work together for total care of the patient. Certainly this is the most pleasant way to work, and surely it is the most effective way to conduct a child through a surgical ordeal.

It has been my good fortune to have Dr. Smith as the head of our anesthesiology service. He has managed in an expert and harmonious way a large department, carrying a heavy clinical load. In addition, he has been inquisitive and desirous of developing new ideas and bringing forth new technical advances. He has been an excellent teacher of doctors, nurses, and students. He has written this book to summarize and put on record the anesthetic methods which have been found to be most practical and useful. The volume will doubtless prove to be of great value to all readers who are interested in strengthening their knowledge of anesthesia for infants and children.

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PREFACE

During the past few years, the scope of pediatric anesthesia has been greatly extended, and numerous contributions have been made in both technical and theoretical aspects. Brief articles containing valuable bits of information or describing important new types of apparatus have been widely distributed throughout anesthesia journals and texts, as well as pediatric, surgical, and general medical literature. My intention in writing this book is to organize and evaluate this information and to add what I can from first-hand experience and observation.

A few words of explanation concerning the preparation of the text should be offered. It is assumed that those who use this book will be familiar with the essentials of general anesthesia; consequently detailed information concerning anesthetic agents and techniques commonly used for adults is not included. Greater emphasis is placed upon information which anesthesiologists usually lack when called upon to care for infants and children. In many instances this concerns pathology, pediatrics, or surgery rather than anesthesia. Such matters may appear to be beyond the scope of a text on anesthesia; however, knowledge of this material often is essential for correct anesthetic management of young children, and it seems important to place such information within easy reach of anesthesiologists whose experience with young patients has been limited.

Since many aspects of the subject seem to overlap, it has been difficult to avoid a certain amount of repetition. In the description of apparatus, the discussion of choice of agent and technique, and suggestions for management of specific types of cases, the same basic factors often apply. In several instances a certain amount of repetition has appeared preferable to breaking up the continuity of the text by referring the reader to other pages.

The references included with each chapter have intentionally been confined to articles which have made definite contributions to the field. Furthermore, an attempt has been made to choose references which are generally available and to avoid those which are relatively inaccessible.

In the preparation of this book I have become indebted to many. The members of the anesthesia department have contributed in a variety of ways. Dr. Tiina Bougas was largely responsible for gathering the material for the study on mortality, while Miss Eleanor Kline assembled the statistics. Miss Betty Lank and my other associates provided much of the material necessary for background.

To Dr. Robert E. Gross, Dr. Donald MacCollum, and others of the surgical staff I am especially grateful for their generous cooperation in allowing me freedom to use patient material, photographs, and statistics. Dr. Charles Davenport Cook's excellent chapter on Respiratory Physiology was an invaluable asset in shaping the text, and his work is keenly appreciated.

While Mr. Ferdinand Harding and his assistant, Miss June Woodworth, deserve credit for most of the photography, several clinical photographs were contributed by Dr. Morton Woolley, Dr. Thomas Holder, and Dr. Robert Allen. The drawings are the work of Miss Mary Ellen Delaney.

Dr. Mary Ellen Mathews was responsible for reviewing many of the references, and stenographic work was shared by Dr. Mathews, Miss Eunsook Kang, Miss Phyllis Cooper, and Miss Evelyn Del Gizzi. The index was compiled by Tuckerman Day of Concord, Massachusetts. To all I am deeply grateful.

Most of all, of course, I am indebted to my wife, who assumed all of my responsibilities at home and gave invaluable material assistance in the final proofreading of the text.

ROBERT M. SMITH, M.D.

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