SWENSON'S PEDIATRIC SURGERY

FOURTH EDITION

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INTRODUCTION

The first edition of Swenson's textbook *Pediatric Surgery* was published in 1958. Although operative techniques have continued to evolve and operations are now being performed which were unheard of at that time, the general principles of care remain the same. The greatest advances have come in the areas of pre- and postoperative care and anesthesia. Our knowledge of the physiologic responses of newborn infants has broadened dramatically. Total intravenous nutrition allows infants with catastrophic gastrointestinal anomalies to survive. The techniques of nutritional support first developed in neonates are now being applied to older children with a variety of diseases which cause malnutrition. Miniturization and refinement of respirators save the lives of countless infants who would have died from respiratory failure. Chemotherapy of childhood tumors was not mentioned in the first edition. Today, drug therapy, more than any other single factor, has radically improved the prognosis of children with malignancies. Descriptions of new diagnostic techniques appear in medical journals every month. Roentgenograms and the recording of innumerable scans and assays can almost become an end in themselves, yet they may allow rapid delineation of many lesions. Pre- and postoperative changes can be followed critically and with ease.

The acknowledgment that pediatric surgery is an independent specialty has been most critical to the implementation of these advances in care. The pediatric surgeon of twenty years ago was a true generalist. Many pioneers operated with equal facility on the heart and gastrointestinal tract. They were skilled in the reduction of fractures, the repair of cleft lips, and in genitourinary surgery. The tremendous increase in knowledge in all these areas has led to subspecialization. Surgeons may now confine themselves to pediatric cardiac, orthopedic, neurologic, or plastic surgery. Excellent textbooks are available in all these areas. Today's "general" pediatric surgeon is concerned with congenital lesions of the gastrointestinal tract, lungs, and diaphragm, as well as the malignant tumors and trauma of childhood. A few perform cardiac or genitourinary surgery.

The pediatric surgeon must be more than a skilled and delicate technician. Along with being well versed in the many implications of pediatric disease and the optimum utilization of the appropriate specialists, he must also be sensitive to the psychological and emotional needs of his young patients. With these responsibilities in mind, the editor has emphasized a problem-oriented approach which attempts to reflect the actual presentation of a pediatric patient. Both the pediatric surgeon and the general surgeon will find that this perspective facilitates the recognition and management of the great variety of problems encountered in surgical practice.

Every child born with a surgically correctable anomaly should be able to survive. Formerly fatal respiratory, infectious, and nutritional complications can be treated or prevented. Life can be prolonged almost indefinitely with total intravenous nutrition and artificial ventilation. This technical ability raises a moral and ethical dilemma because there are infants with incurable defects or chromosomal abnormalities who will remain crippled or retarded regardless of our efforts. The surgeon must look to his own ethical and religious background in order to counsel the parents of such children.

Ideally, all major operations upon high risk infants and childrens should be performed in a pediatric center. Obviously, this is not always possible. Any surgeon may be called upon to care for a sick

child. This book is intended to help every surgeon in the diagnosis and treatment of pediatric surgical disease.

I wish to acknowledge all the contributors to this volume. Their willingness to accept editorial changes has helped produce a consistent and readable text. I also wish to thank the residents of the Pediatric Surgical Service at Children's Memorial Hospital in Chicago for their perspicacity. Finally, I wish to thank Matthew Collins of Appleton-Century-Crofts for his expert guidance.

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SECTION I

ASSESSMENT AND GENERAL CONSIDERATIONS IN THE CARE OF THE PEDIATRIC SURGICAL PATIENT

INTRODUCTION

The operation is only a brief phase in the continuing care of the pediatric surgical patient. To achieve success the proper diagnosis must be made and the child must be in the best possible physical and emotional condition before the operation. This requires that we personally obtain a history and perform a physical examination. The time spent with the child will reassure his parents and will aid the surgeon in evaluating his patient as well as the family. In the preoperative evaluation, it is the surgeon's responsibility to find and correct underlying diseases or abnormalities which may complicate the operation. A careful history will eliminate many pitfalls by turning up a potential coagulation disorder, an allergy to drugs, or perhaps a familial history of hyperthermia in reaction to certain anesthetic agents.

With the many techniques available for artificial feeding, any patient can be brought into an optimum nutritional state to ensure sound wound healing and rapid recovery. When there is any question in the surgeon's mind concerning the diagnosis or the patient's general condition, the surgeon should not hesitate to obtain the help of a consultant. In some patients, such as diabetics, it is extremely helpful to work closely with a medical specialist. However, the surgeon must bear the entire responsibility for his patient's preoperative and postoperative care.

The operating room is a relatively dangerous place. In this section, we have avoided adding the traditional chapter on anesthesia, but have included a discussion on care of the child in the operating room. Here there is a division of responsibility: the anesthesiologist must maintain a steady, safe plane of anesthesia; monitor the patient; administer transfusions and other fluid therapy, and at the end awaken the patient. Surgeons must be aware of the many hazards which face a pediatric patient, and especially a newborn infant, from the time he is first brought into the operating room. The surgeon must watch the tempera-